Write or Waste? Comparing the Effectiveness of Self-transcendence and Self-enhancement Appeals in a Shopping List Intervention to Reduce Household Food Waste

Paul A. Peeters

Faculty of Social Sciences, Radboud University Nijmegen

Master's Programme Behaviour Change

The Netherlands Nutrition Centre (Voedingscentrum)

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Supervised by

J. Knüppe (MSc)

Dr. J. C. T. M. Karremans

Abstract

Recent research suggests that making shopping lists and adhering to them appears to be a vital behavior in reducing food waste. Building on these findings, the objective of this research is to investigate the factors that contribute to the likelihood of making shopping lists and to examine whether these factors can be used to increase shopping list usage when attempting to reduce household food waste. The current research performs two Studies; a qualitative, survey-based study (Study 1: N = 839) to assess the relation between shopping lists and food waste and to understand consumers' drivers and barriers to making shopping lists. Furthermore, an experimental field study (Study 2: N = 169) was undertaken to compare the effectiveness of a self-enhancement appeal and a self-transcendent appeal in reducing food waste, in the context of shopping lists. Findings suggest that self-transcendence appeals were more effective in increasing shopping list usage compared to self-enhancement appeals. Interestingly, self-enhancement appeals were explicitly reported to be more motivating to make shopping lists. This shows an interesting dissociation between what people report to be motivating their behavior and what causes behavioral change. Although household food waste levels decreased over the course of the study, this effect could not be ascribed to the intervention for which a causal relationship between making shopping lists and household food waste remains unestablished. Theoretical and practical implications of these findings are discussed.

Keywords: shopping lists, food waste, habits, behavior change, intervention

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One-third of all food for human consumption is wasted across the food supply chain (FAO, 2011). The primary contributor to food waste across the global food chain is the consumer (European Commission, 2016; UNEP, 2021), which also holds for The Netherlands (Soethoudt & Vollebregt, 2017). This does not go unnoticed, as the generation of food waste has a serious environmental impact (UNEP; 2009; Foster et al., 2009). Estimates suggest that up to ten percent of global greenhouse gas emissions are associated with food waste (UNEP, 2021). Besides, it seems ethically unjustified to waste food in a world where one in nine people do not have sufficient access to nutrition (FAO, 2019). Therefore, it is vital that food waste levels will be reduced.

Planning and managing purchases have been identified as direct determinants of household food waste (Stefan et al., 2013; Ascheman-Witzel, et al., 2016). In the Netherlands, planning behaviors are estimated to make up for at least 23% of household food waste (Van Dooren & Knüppe, 2020). One mechanism at stake is that faulty planning can lead to overstocking which increases the likelihood that products turn into waste, and this applies not exclusively to perishables (Derksen & Aardening, 2019; Jörissen et al., 2015). This is alarming, knowing that approximately half of the Dutch consumers purchase more than necessary (Janssen et al., 2012; Temminghoff & van Velden, 2017). Therefore, tackling food waste before it enters the house seems like a promising approach (i.e., one cannot waste what is not purchased). Among planning behaviors (e.g., making shopping lists, checking inventory, and planning meals), making a shopping list and adhering to it appears to be pivotal behavior to reduce food waste. Consumers that make shopping lists infrequently (approximately one-third of Dutch households) waste twice as much food compared to consumers who always make a list (Derksen & Aardening, 2019). Furthermore, the use of

shopping lists over time has been on a decline since 2011 (Temminghoff & van Velden, 2017; Temminghoff & van Velden, 2015).

Despite the common practice of making shopping lists and its apparent importance to household food waste, little is known about why people do or do not make shopping lists. Research on shopping lists does indicate three reasons for why people use lists: as a memory aid to prevent items from being forgotten (Block & Morwitz, 1999; Thomas & Garland, 2004; Arnoud et al., 2014) to control spending (Thomas & Garland, 2004), and to save time (Arnaud et al., 2014). However, the relative importance of these and other reasons for consumers to make shopping lists appears unexplored. Therefore, the first objective of this research is to explore the factors that contribute to the likelihood of making shopping lists.

Recent research shows some of the effects of using shopping lists. This includes reducing the number of items bought and the amount of money spent when shopping (Suher, Huang & Lee, 2019; Davydenke & Peetz, 2020) as well as lessening the likelihood of making unplanned purchases (Inman et al., 2009; Huang & Yang, 2018). Together, this suggests the potential efficacy of using shopping lists to reduce household food waste. Yet, to date, there have been no intervention studies aiming at increasing shopping list usage as means to reduce household food waste. Moreover, a causal relationship between the two remains unestablished. Therefore, the second objective of this research is to examine whether the factors that contribute to the likelihood of making shopping lists can be used to increase shopping list usage to reduce household food waste.

To accomplish the first objective, a quantitative study is performed (Study 1) to identify drivers, barriers, and other psychological factors that determine making shopping lists. Thereafter, an experimental field study was conducted (Study 2) to compare the effectiveness of a persuasive appeal that focuses on time-saving against a self-transcendence appeal, to examine their respective influence on the reduction of food waste.

What factors determine whether consumers make shopping lists? One possible perspective to examine this is the Consumer Food Waste Model (CFWM; Van Geffen et al., 2016). Building on the framework of Rothschild (1999), the CFWM suggests that the constructs that affect behaviors leading to food waste, and consumer food management behaviors more generally, can be grouped into three categories: motivation, abilities, and opportunities. Firstly, motivation refers to a person's willingness to enact behaviors that reduce household food waste (Van Geffen et al., 2016). The motivation to make shopping lists may feature a cost-benefit analysis of the perceived utility (e.g., it speeds up the shopping process vs. I believe I can remember what I need). Secondly, opportunity pertains to the availability and accessibility of the resources required to enact behaviors (Shwom & Lorenzen, 2012). To make a shopping list, consumers possibly need to perceive sufficient time at hand as well as having a tool (e.g., a shopping list notepad) at their disposal. Finally, ability concerns someone's proficiency to engage in behaviors or change routines for which the necessary skills and knowledge are prerequisites (Van Geffen et al., 2016). Concerning shopping lists, one may need to learn how a shopping list can contribute to reducing food waste (e.g., checking the pantry beforehand to prevent overstocking) and incorporate this in their routine.

The effectiveness of self-enhancement (i.e., values that elicit personal benefit) compared to self-transcendence (i.e., values that interest the welfare beyond oneself) values in reducing food waste has not been extensively explored yet. On one hand, self-enhancement values (e.g., saving time during shopping) have been reported to be more important drivers to make shopping lists than self-transcendence values (e.g., reducing food waste) as discussed below in Study 1. On the other hand, self-transcendence values frequently motivate human behaviors (e.g., Schwartz, 1992). For example, previous research suggests that highlighting self-transcendence values can stimulate behavior corresponding with the value (e.g., Maio et

al., 2009), whereas highlighting self-enhancement values reduces behavior in line with self-transcendence values (Schwartz, 1992). Accordingly, providing information on why making a shopping list is good for the environment (i.e., a self-transcendence value) is expected to be more effective in reducing household food waste. Several recent findings support this prediction in other domains (Schwartz et al., 2015). As a specific example, previous research found that compared to monetary (i.e. self-enhancement) appeals, environmental (i.e. self-transcendence) appeals were more effective in decreasing shower frequency (Tijs et al., 2017), and promoting tire checks among car drivers to reduce gasoline usage (Bolderdijk et al., 2013). As this has not been examined in the context of food waste, it is both theoretically and practically interesting to investigate the question of whether explicit motives represent the real drivers for behavior. The research question is therefore whether an intervention should focus on self-enhancement or self-transcendence motives.

Study 1 –Quantitative Survey-based Study

The purpose of Study 1 is threefold; one is to verify previous research findings regarding the relationship between the use of shopping lists and household food waste, the second is to explore the psychological determinants of making shopping lists, and the third is to investigate how these determinants differ depending on the extent to which consumers make shopping lists. Doing so, this preliminary study intends to identify the most important drivers and barriers to making shopping lists which subsequently functions as preparatory evidence for directing the focus of an intervention aimed at reducing food waste. It is expected that: (H1) consumers who make shopping lists infrequently report wasting more food than consumers who always make shopping lists. Furthermore, no prior hypotheses were made regarding the relative importance of different drivers and barriers to making shopping lists, nor the extent to which consumers differ in this respect depending on how frequently they make shopping lists.

Method

Participants

The first study used an online questionnaire to uncover and understand consumers' drivers and barriers to making shopping lists and to assess the relationship between making shopping lists and food waste. Data were collected by the Dutch market research agency MWM2. The questionnaire was set out among consumers who were, at least partially, responsible for doing groceries for their household. Participants agreed to informed consent before participating and were reimbursed for participation after completion following the research agency's internal policies.

The data collection resulted in a sample of 839 individual consumers, of which 10 were excluded because they completed the questionnaire 2.5 times below the average time suggesting that they did so in a manner that did not allow them to consider the questions properly enough (MAD; Leys, et al., 2013). This left 829 participants for analyses resulting in a representative sample of The Netherlands (see Table 1).

Table 1

Overview of Percentages of Gender, Age and Educational Level

		N	Percentages
Gender	Male	410	49.5%
	Female	418	50.5%
Age	18 - 24 years old	93	11.2%
	25 – 34 years old	189	22.8%
	35 – 44 years old	188	22.7%
	45 – 54 years old	185	22.3%
	55 years old or older	174	21%
Educational level	Undergraduate or higher educated	253	30.6%
	High school education	420	50.7%
	Lower level of education	155	18.7%

Measures

Questionnaire

The questionnaire consisted of 30 items (see Appendix A) and covered shopping list usage and household food waste as main dependent measures as well as several psychological constructs as explained below.

Use of Shopping Lists. The frequency of use of shopping lists was measured by asking participants how often they did groceries in the previous week and how many times they used a shopping list on a 5-point scale ranging from ‘Every day’ (1) to ‘Never’ (5). For analyses, participants were divided into three groups depending on their frequency of use of shopping lists in relation to times gone shopping (i.e., Always, Sometimes, Never).

Food Waste. One question investigated the participants’ household food waste level by asking them to indicate how often they thought to have thrown away edible food on a 5-point Likert scale ranging from ‘Daily’ (1) to ‘Rarely to never’ (5).

Motivation. Participants were asked to indicate their main motivation and barrier to making shopping lists (see Table 2).

Opportunity. There were two separate questions concerning the extent to which consumers perceived time or effort as barriers to making shopping lists, which provided information on whether these aspects play a role in the opportunity to make shopping lists (see Table 2). The items were judged on Likert scales ranging from ‘Completely disagree’ (1) to ‘Completely agree’ (5).

Ability. Three items were used to measure the extent to which consumers were attached to their manner of making shopping lists, which provided information on the likelihood to which they were prone to divert from it (see Table 2). The items were judged on Likert scales ranging from ‘Completely disagree’ (1) to ‘Completely agree’ (5). Reliability

analysis of the items resulted in a Cronbach's alpha of .72, which can be considered as acceptable internal consistency (Gliem & Gliem, 2003).

Other Constructs. Finally, there were questions pertaining to the way participants make shopping lists (i.e., using a paper shopping list notepad vs. online methods), the behaviors that precede making shopping lists (e.g. checking the pantry), indicators that would facilitate making lists more frequently, and demographic factors. Not all items included in the questionnaire were used in the present research.

Table 2

Example Items for the Included Constructs

Construct	Example item
Main motivation	*'What is your main reason for making a shopping list?'* *A. 'I forget to buy something in the store less often'* *B. 'I can do my shopping faster'* *C. 'I make healthier choices'* *D. 'I don't spend too much money'* *E. 'I waste less food'*
Main barrier	*'What is your main reason for not making a shopping list?'* *A. 'If I have to get a few products and can remember what I need'* *B. 'I like to choose what I need in the store'* *C. 'It takes too much effort to make a shopping list'*
Opportunity	'*It takes too much effort for me to draw up a shopping list'*
Ability	*'I wouldn't like to make my shopping list any other way'*

Data analysis

First, descriptive statistics were attained for all relevant variables.

The first hypothesis (H1), whether consumers who make shopping lists infrequently report wasting more food than consumers who always make shopping lists, was tested by using a Kruskal Wallis test to examine the difference between the frequency of use of shopping lists and frequency of wasting food in the household as two ordinal variables.

For exploratory purposes, a series of Pearson chi-square tests of independence were conducted to investigate whether groups differ in terms of their motivation for and against

making shopping lists as well as their demographic background, depending on the extent to which they make shopping lists.

Results

Descriptive statistics

To obtain an impression of the dependent and independent variables, percentages, means, and standard deviations were computed for all relevant variables (see Table 3).

Table 3

Descriptives for the Independent and Dependent Variables

Construct	Option	N	Percentages
Frequency of use of shopping lists	Always	480	59.2%
	Sometimes	198	24.4%
	Never	133	16.4%
Method of making shopping lists	On a notepad or piece of paper	452	65%
	On a chalkboard	16	2.3%
	On mobile phone, via a note	162	23.3%
	On mobile phone, via an app	54	7.8%
	Other	11	1.6%
Main motivation	Forgetting to buy something less often	375	54%
	Shopping faster	148	21.3%
	Making healthier choices	38	5.5%
	Not spending too much money	95	13.7%
	Wasting less food	15	2.2%
Main barrier	Few products or being able to remember	546	72.6%
	Freedom of choice	140	18.6%
	Effort	66	8.8%
Other constructs	Factor	M	SD
Motivation	Attitude	3.25	.98
Opportunity	Effort	2.18	.99
Ability	Attachment	3.71	.80

Note. *M* = mean, *SD* = standard deviation. Attitude ranges from 1 to 5. Effort ranges from 1 to 5, Attachment rangers from 1 to 5.

Confirmatory Analyses

For the first hypothesis (H1), a Kruskal-Wallis test revealed that the frequency of wasting food in the household significantly differed across groups (i.e., Always, Sometimes, Never) depending on how frequently they use a shopping list, $H(2) = 12.54$, $p = .002$. Pairwise comparisons indicated that participants who sometimes use shopping lists indicated wasting more food (mean rank = 455.6) than those who never make shopping lists (mean rank = 384.4, $p = .016$) and those who always make shopping lists (mean rank = 391.5, $p = .003$). There was no significant difference in food waste between consumers that always and never made shopping lists. In sum, and somewhat surprisingly, food waste was significantly greater for consumers that sometimes made shopping lists compared to those who always or never made shopping lists. These findings suggest that, when designing an intervention to reduce food waste, focusing on consumers who make shopping lists infrequently seems like a viable approach.

Exploratory Analyses

As the results of the confirmatory analyses indicate that consumers who sometimes make shopping lists report wasting food more frequently than consumers who always or never make shopping lists, it is interesting to explore whether these groups differ in terms of their motivation for or against making shopping lists as well as their demographic background.

The first chi-square test of independence showed that there is no significant association between motivation to make shopping lists and frequency of use of shopping lists, X^2 (5, $N = 678$) = 8.7, $p = .120$. Motivation to make shopping lists seems to be independent of whether consumers always, sometimes, or never make shopping lists. As can be seen by the frequencies cross-tabulated in Table 4, *forgetting*, *faster shopping*, and *spending less* were reported as more important motives than reducing *food waste* by all three groups. Thus, these

findings indicate that irrespective of consumer type, self-enhancement motives are reported as more motivating to make shopping lists than self-transcendence motives.

The second chi-square test of independence showed that there is a significant relation between barriers to make shopping lists and frequency of use of shopping lists, X^2 (4, N = 735) = 27.1, p = < .001, Cramer's V = .13. A Bonferroni-adjusted alpha level of .005 (0.05/9) was used to identify the significant differences(s) within the 3x3 chi-square table. As can be seen in Table 4, consumers that always make shopping lists reported *remembering* (i.e., being able to remember products) as an important barrier compared to consumers who sometimes make shopping lists, p < .001. Moreover, consumers who make shopping lists sometimes report restricted *freedom of choice* more as an important barrier compared to consumers who always make shopping lists, p < .005. In other words, restricted *freedom of choice* is a more important barrier not to make shopping lists for consumers who make shopping sometimes, and *remembering* is a more important barrier for consumers who always make shopping lists.

Table 4

Main Motivations and Main Barriers by Frequency of Use Shopping Lists

		Group					
Construct	Reason	Always		Sometimes		Never	
		N	Percentage	N	Percentage	N	Percentage
Motivation	Forgetting	268*	55.8%	98*	49.5%	N/A	N/A
	Faster shopping	108*	22.5%	37*	18.7%	N/A	N/A
	Healthier choice	22*	4.6%	16*	8.1%	N/A	N/A
	Spending less	60*	12.5%	32*	16.2%	N/A	N/A
	Food waste	9*	1.9%	6*	3.0%	N/A	N/A
Barrier	Remembering	339***	79%	113***	61.7%	83**	67.5%
	Freedom of choice	56***	13.1%	47***	25.7%	33**	26.8%
	Effort	34**	7.9%	23**	12.6%	7**	5.7%

Note. *p >.05. ** p < .05. ***p <.005. N/A = Not applicable; consumers who reported never to make shopping lists were not asked about their motivations to make shopping lists.

The last series chi-square tests of independence showed no significant relationship between frequency of use of shopping lists and age, educational level, and household composition (all $p > .08$). A significant relation was found between gender and frequency of shopping list usage X^2 (82 $N = 810$) = 9.02, $p = .011$, Cramer's $V = .11$. Women were more likely to always make shopping lists than men, and men were more likely to make shopping lists sometimes and never than women. These findings indicate that whether consumers always, sometimes, or never make shopping lists is independent of demographic factors, apart from gender.

Discussion

The aim of Study 1 was to verify previous research findings regarding the relation between the use of shopping lists and household food waste and to explore the psychological determinants of making shopping lists. Together this could be used to devise an intervention that aims to increase shopping list usage when attempting to reduce household food waste, as discussed in Study 2.

Firstly, the first hypothesis (H1) was partially supported, implying that consumers who make shopping lists infrequently not only report wasting more food in their household than those who always make shopping lists, but also compared to those who never make shopping lists. This contradicts some previous research (Derksen & Aardening, 2019; Jörissen et al., 2015).

A possible explanation could be that consumers who never make shopping lists buy less products per shopping trip or go shopping more frequently. This might equate to shorter and more realistic planning for which overstocking and not consuming what is purchased (i.e., food waste) is less likely to occur (Luiting-Drijfhout, 2020). However, this was not further investigated and therefore could not be confirmed. Subsequently, exploratory analyses indicated that consumers do not differ significantly on demographic background, apart from gender, and motivations to make shopping lists depending on their shopping list usage.

Therefore, other than focusing on men, it is difficult to distinguish shopping list users when devising an intervention that focuses on a specific group.

Secondly, exploratory analyses indicated that self-enhancement motives rather than self-transcendence motives were ascribed to be motivating to make shopping lists. Specifically, *forgetting* products was the most important motive, followed by *faster shopping* and *spending less*. Similar findings about the importance of these motives were made in earlier research (e.g., Davydenke & Peetz, 2020; Thomas & Garland, 2004).

In addition, reducing *food waste* was reported as the least important motive to make shopping lists. An explanation for this could be that food waste is perceived as more abstract because there is no personal relevance of food waste (Trop & Liberman, 2010). Therefore, perceived personal consequences of food waste are possibly too low. As a result, this may affect consumers that make shopping lists as they give more weight to what is near and accessible (Trope et al., 2007). On that note, food waste should matter enough to overcome temporal discounting effects (Green & Myerson, 2006).

Moreover, exploratory analyses found that the main barrier to making shopping lists is the perceived efficacy to *remember* groceries. This is in line with previous research indicating that not making a shopping list is related to the number of items one believes to be able to remember to buy (Fernandes et al., 2016). Interestingly, the main barrier to make shopping lists (i.e., perceived efficacy to remember) was found to be the negative opposite of the main motivation to make shopping lists (i.e., not wanting to forget). Therefore, when motivating participants to make shopping lists (study 2), the second most important motive to make shopping lists (i.e., speeding up shopping) seems like a more viable motivation to focus on.

Finally, it was found that *effort* was reported infrequently as a barrier to making shopping lists. This was confirmed by the descriptive results on the construct which indicated that consumers on average did not experience time or effort to withhold the opportunity to

make shopping lists. Possibly, making a shopping list is perceived as a relatively small and simple task. However, when in a rush it can be imagined that even undemanding tasks are left out. Additionally, participants reported being relatively attached to their manner of making shopping lists. This corresponds to earlier research indicating that making a shopping list is a routine behavior (Thomas & Garland, 2004) that is not easily changed (Lally et al., 2010). Consequently, an intervention aimed to increase shopping list usage would benefit a persuasive appeal as well as equipping consumers with the ability to break from their habits.

Study 2 –Experimental Field Study

The results of Study 1 indicate that people indicate that self-enhancement motives, such as speeding up the shopping process and reducing costs, are more important to make shopping lists than self-transcendence motives. As touched upon in the introduction, it remains an interesting question as to what extent such explicit motives drive behavior. In other words, does the fact that people indicate self-enhancement motives to be more motivating mean that they really are? To find out, an experimental study was undertaken to evaluate the efficacy of motivating people to make shopping lists more frequently in an attempt to reduce household food waste levels. Based on previous research, it is hypothesized that an intervention directed at activating self-transcendent values will increase the use of shopping lists (H2) and reduce household food waste (H3) more than activating self-enhancement values or no values at all (i.e., control condition). Consequently, the impact on food waste is to be expected to be caused by the role of shopping lists usage (H4).

Method

Design

Participants were randomly assigned to three possible conditions: the self-enhancement-, self-transcendent-, and control conditions. The assignment to conditions was performed by the researcher using a random digit generator on solely postal addresses to prevent any experimenter bias. The experimental conditions were sent a paper shopping list and flyer via mail developed to motivate participants to use shopping lists. This enabled the researcher to compare the results of both experimental conditions to a control condition. The design of this study consisted of a 2 (time: pre vs. post) x 3 (appeal: self-enhancement vs. self-transcendent vs. control) mixed design with repeated measures as the first factor and shopping list usage and household food waste as two separate dependent variables.

Participants

One hundred and ninety four participants agreed to participate in the study. The participants were recruited by the researcher employing a recruitment text, which was shared via social media channels using convenience and snowball sampling. A total of 169 responses were collected. Of the 169 participants who completed the pre-and post-measurement, 21 (12.4%) participants were excluded who reported not having received the intervention while having been assigned to either of the experimental conditions. This resulted in a final total of 148 participants for analyses with approximately equal distribution among conditions. No differences were found among the conditions in terms of frequency distributions for age, gender, educational level, and the number of household members (all $p > .17$). The number of participants in this study met the required 42 participants derived from a power analysis (medium effect sizes, power of .80, and alpha of .05). Participants took part voluntarily and were told that by participating, they would automatically be enrolled in a raffle where they

could win a voucher from a webshop worth €100, - as well as several cookbooks. Prior to the pre-measure, participants gave their consent.

Materials

Intervention.

The intervention of the current study consisted of an A6 size shopping list notepad and an A5 size flyer which on the front side contained self-enhancement (vs. self-transcendence) appeals, as well as several influence techniques attempting to motivate consumers to make shopping lists. The backside of the flyer featured five tips on how to improve shopping lists to reduce food waste.

The intervention materials in both experimental conditions were identical except for that in the self-transcendent condition the appeal referred to environmental benefits of reducing food waste by making use of a shopping list, while in the self-enhancement condition the appeal insisted that making a shopping list speeds up the shopping process and reduces food waste (see Appendix B for the intervention).

The influence techniques listed on the intervention (i.e., a flyer and shopping list notepad) were as follows: The header of the flyer presented two benefits of making shopping lists, being the reduction of food waste for both conditions and speeding up shopping (vs. environmental gains) for either of the conditions. This was followed by a well-known Dutch slogan (‘That is the power of shopping lists’). This familiar phrase that implicitly offers advice, also known as an aphorism, was ought to be persuasive because it is succinct and easily remembered (Seiter & Gass, 2018). Following the header, a cartoon in the shape of a mouth sitting on a bag of groceries holding a shopping list asked the participants in a speech bubble why they thought fast shopping (vs. sustainability) which important in a technique known as self-persuasion (Aronson, 1999). The bottom of the flyer contained two pieces of

information implying that most people in The Netherlands always make a shopping list and find it important to reduce food waste referring to the social norm (Ajzen, 1991; Cialdini et al., 1990; Farrow et al., 2017). On the backside of the flyer, five tips for 'smart' shopping lists were listed. This is intended to assist participants to invoke behaviors that precede making a shopping list (e.g., put your shopping list in plain sight and never forget it') (self-nudging; Reijula & Hertwig, 2020). Finally, along with the flyer, participants received a shopping list notepad serving as a subtle reminder known as a prompt representing the required tool to make shopping lists easily (Geller, Farris, & Post, 1973).

Questionnaire.

The questionnaire consisted of 46 items (see Appendix C) and covered the main dependent measures being shopping list usage and household food waste as well as several psychological constructs as explained below.

Use of Shopping Lists. The use of shopping lists was measured on a continuous scale by asking participants the number of times they had done groceries over the past week (i.e., counting back seven days) as well as the frequency by which they had made a shopping list when doing so.

Food Waste Questionnaire. To assess the household food waste, the *Household Food Waste Questionnaire* developed by van Herpen, and colleagues (2019) was employed. This validated self-report survey has been developed to accurately measure food waste levels by focusing on a short and specific time period (i.e., the past week), specific product categories, and representative measures to indicate amounts. Consisting of 24 items, participants are asked per product category the amount of food wasted on a 5-point Likert scale ranging from (1) 'Less than one serving spoon' to (5) 'More than 6 serving spoons' (see Table 5).

Other Constructs. In addition to the main dependent measures, the post-measure included questions about the extent to which participants experienced the appeal as motivating, and evaluation of the shopping list (see Table 5). This provided information on how participants explicitly evaluated the intervention which could then be compared to behavioral measures. To all these questions, participants responded on a 7-point Likert scale raging scale ranging from 'Totally disagree' (1) to 'Totally agree' (7). Additionally, participants filled out questions about their attitude towards food waste, towards making shopping lists, towards sustainability, towards fast shopping as well as their business in daily life, planning abilities, irregularity of lifestyle, and demographic background. Not all items were used for data analysis in the present research.

Table 5

Example Items for the Included Constructs

Construct	Example item
Household food waste	*'How much fresh vegetables and salads were disposed in your household during last week? One serving spoon equals 50 grams. As a reference, this equals half a leek or four champignons.'*
Motivation flyer	*'The flyer motivated me to make shopping lists'*
Evaluation shopping list	*'The shopping list helps me to waste less food'*

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Procedure

After providing informed consent, participants filled out the pre-measure questionnaire online via Qualtrics. Approximately two days after the pre-measure, the experimental groups received a flyer and shopping list notepad in their mailbox. The self-enhancement and self-transcendent flyers were put in envelopes addressed to 'Participant Food Waste Research'. No additional remarks or instructions were made in an attempt to measure the effect of solely the intervention as accurately as possible. The control condition received nothing. Two weeks after having set out the intervention, participants were sent the post-measure questionnaire via

email. Both questionnaires took approximately ten minutes to complete. After completion of the study, participants were thanked for participation and debriefed.

Data analysis

The second and third hypotheses (H2, H3) were tested using a mixed measures analysis of variance (ANOVA) including time as a between-subjects factors (pre vs. post), condition as within-subjects factor (self-enhancement vs. self-transcendence vs. control), and shopping lists usage and food waste as dependent variables. Moreover, prior to the analyses, it was investigated whether the following assumptions were met; normality, homogeneity (for both between-subject and within-subject variances using Levene's test), and interval data. Looking at the difference scores of both dependent variables, data was approximately normally distributed. Several outliers were detected for food waste, however, were retained as they represented realistic data. The fourth hypothesis was tested by using a Pearson analysis of covariance on the difference scores (i.e., post-measure minus pre-measure) of both dependent variables (i.e., shopping list usage and household food waste).

Results

Confirmatory analyses

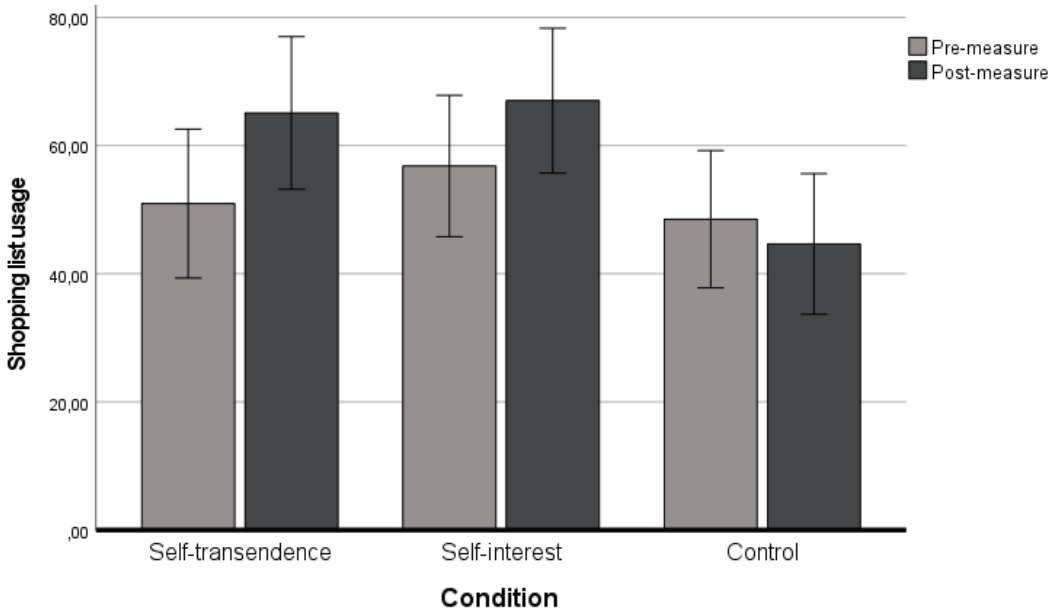
Shopping lists usage (H2).

The results of a factorial mixed ANOVA between intervention (between-subject factor: self-enhancement, self-transcendence, control) and time (within-subjects factor with 2 levels) revealed no significant main effect of intervention on shopping list usage, $F(2, 145) = 2.70$, $p = .070$, $\eta_p^2 = .036$. Moreover, the analyses revealed a significant main effect of time, $F(1, 145) = 4.47$, $p = .036$, $\eta_p^2 = .030$, with higher shopping lists usage at time 2 ($M = 58.9$, $SE = 3.3$) than time 1 ($M = 52.1$, $SE = 3.2$) (i.e., percentage of shopping list used when shopping for groceries). Finally, there was a non-significant two-way interaction between intervention and

time, $F(2, 145) = 2.99$, $p = .053$, $\eta_p^2 = .035$. Because the interaction effect was marginal and approaching significance, we continued testing with simple effects. These analyses further revealed that there was a significant increase in shopping list usage from pre-measure to post-measure in the self-transcendence condition ($p = .017$), but not in the other conditions (all $p > .06$) (see Figure 1). In other words, the study was arguably effective in increasing shopping list usage, in particular for participants in the self-transcendence condition in comparison to the self-enhancement- and control condition.

Figure 1

Comparison of Shopping List Usage between Conditions from Pre- to Post-measurement



Note. Shopping list usage in percentages, error bars: 95% CI.

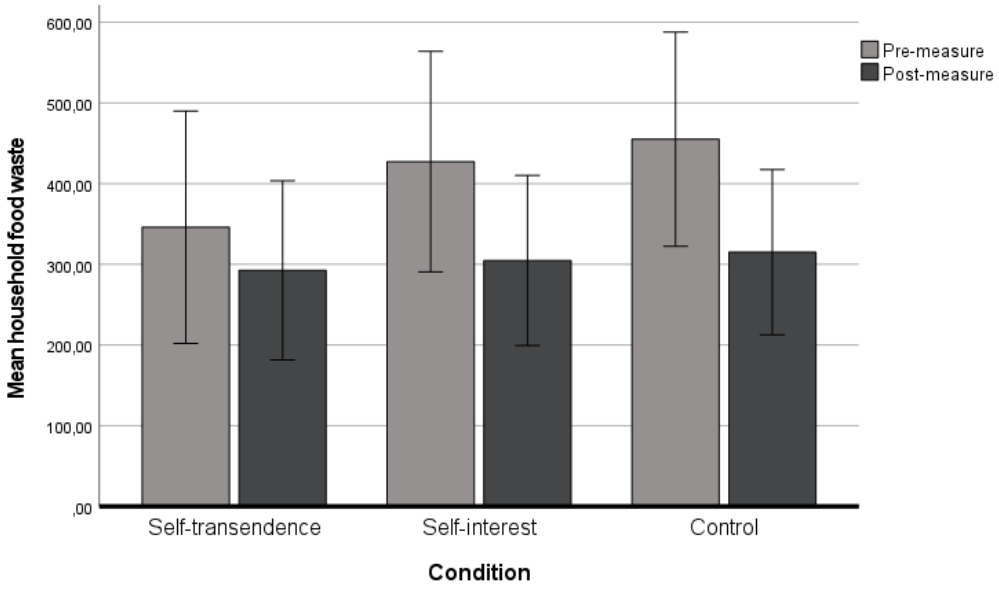
Household food waste (H3).

The results of a factorial mixed ANOVA between intervention (between-subject factor: self-enhancement, self-transcendence, control) and time (within-subjects factor with 2 levels) revealed no significant main effect of intervention on food waste, $F(2, 145) = .40$ $p = .670$, $\eta_p^2 = .006$. Moreover, the analysis revealed a significant main effect of time, $F(1, 145) = 7.49$, $p = .007$, $\eta_p^2 = .049$ (see Figure 2), with lower food waste at the post-measure ($M = 304.2$, $SE =$

40.3) than at the pre-measure (M = 409.5 , SE = 31.1) and no significant two-way interaction between intervention and time, $F(2, 145) = .46$ $p = .634$, $\eta_p^2 = .006$. On average, there was a significant decrease for household food waste between the pre and post-measurement, irrespective of condition. In other words, the study was effective at decreasing household food waste, however, this cannot be ascribed to the intervention.

Figure 2

Comparison of Household Food Waste between Conditions from Pre- to Post-measurement



Note. Household food waste list in grams, error bars: 95% CI.

Shopping list usage mediating household food waste (H4).

The results of a Pearson's coefficient correlation showed that the difference in shopping list usage from pre- to post-measure is not significantly associated with the difference in household food waste from pre- to post-measure, $r(146) = -.009$, $p = .917$. This finding suggests that the difference in household food waste over time is not significantly related to the difference in shopping list usage over time. In other words, although both dependent variables changed between pre-and post-measurement, it seems that an increase in shopping lists usage does not predict the decrease in household food waste.

Exploratory analyses

As the results of the confirmatory analyses indicate an interaction effect between group and shopping list usage that approached significance, it is interesting to investigate whether participants explicitly evaluated both flyers differently in terms of motivational power.

There was no significant difference between how motivating the self-transcendence flyer was interpreted (M = 4.5, SD = 1.8) as compared to the self-enhancement flyer (M = 4.9, SD = 1.9), $t(85) = -1.24$, $p = .217$, Cohen's $d = 1.85$. This result suggests that although distinct appeals were used to increase shopping list usage, the appeals were not judged to be either more or less motivating from one another. Consequently, this might connect to the finding that shopping list usage was marginally different at a significant level between the self-transcendence condition and the self-enhancement condition. Additionally, the ratings indicate that participants evaluated the flyer as not very motivating (i.e., below neutral).

Discussion

This research aimed at investigating the factors that contribute to the likelihood of making shopping lists and to examine whether these factors can be used to increase shopping list usage when attempting to reduce household food waste. Two studies were undertaken with distinct research methods (i.e., quantitative survey and applied experimental). The results of these studies provide a set of interesting implications, not only for researchers working around food waste but also for different actors in the field.

H1: Frequency of shopping lists and food waste. The first hypothesis was partially supported, implying that consumers who make shopping lists infrequently not only report wasting more food in their household than those who always make shopping lists but also those who never make shopping lists. Moreover, it was found that self-enhancement values

(e.g. speeding up shopping) were reported to be more important drivers to make shopping lists than self-transcendence values (e.g. reducing food waste) irrespective of how often consumers made shopping lists.

H2: **Intervention and shopping lists**. We found some support for the second hypothesis, in that self-transcendence appeals resulted in more frequent use of shopping lists than self-enhancement appeals. Specifically, we did find a significant increase in shopping list usage in the self-transcendence condition but not in the self-enhancement condition – although it is important to recall that the overall interaction was non-significant (p = .054). These findings suggest an interesting dissociation between what people report to motivate their behavior and what in reality causes change in behavior, as similarly found by Tijs and colleagues (2017). A possible mechanism at stake here is that environmental concerns operate at an unconscious level and hence do not explicitly motivate shopping list usage (Custers & Aarts, 2010). These findings imply that explicit motives are not representative of the real drivers of behavior and should therefore not be used in isolation when devising interventions. An explanation for the small effects and lack of difference between the control- and experimental conditions could be that the manipulation of the intervention was not compelling enough. The intervention (i.e., a flyer and a shopping list notepad), was sent to participants in the experimental conditions without additional remarks or instructions. Consequently, the attempt to measure the effect of solely the intervention as accurately as possible may have compromised the level of persuasiveness. In comparison, the intervention by Tijs and colleagues (2017) featured several assignments that engaged participants to actively process the appeals in contrast to merely reading them. Perhaps a more active approach could have led to a more pronounced difference between conditions.

Another explanation for the lack of difference between the two experimental conditions could be that the elements intended to activate values were not different enough. In

both conditions, these elements included an appeal in written form which insisted that making shopping lists reduces food waste for which it either benefits the environment (self-transcendence) or speeds up shopping (self-enhancement). This was the only aspect in which the flyers (i.e., intervention) differed, and perhaps this was not enough to create a difference between the conditions. Accordingly, exploratory analyses indicated that both flyers were not evaluated significantly different in terms of their motivating power.

Moreover, an explanation for finding a marginally significant effect can be attributed to the accompanying power of the analyses. Having found small-, rather than the anticipated medium effect sizes requires a larger sample size to find effects (Cohen 1992). Therefore, possibly a larger difference between conditions exists, however, the power of this study was too small to detect them.

H3: Intervention and food waste. The third hypothesis could not be confirmed, implying that participants who received the self-enhancement or self-transcendence intervention did not show lower levels of food waste as compared to the control condition. Interestingly, the amount of household food waste did decrease over time. A possible explanation for this finding is that participants over the course of the study became familiar with the topic and the questionnaire that investigated it, and changed their behavior accordingly (i.e., Hawthorne effect; McCambridge, 2014). Moreover, the nature of the study (i.e., household food waste) was communicated in the recruitment text to participants. Therefore, agreeing to participate in this study can indicate certain levels of motivation to reduce food waste already. Theoretically, it may also have been possible that the differences in household food waste after two weeks were due to external circumstances (e.g., weather conditions) which for reasons were not explored in this research. Regardless, these results indicate that participating in the study (i.e., commitment, awareness on the topic, filling out questionnaires, etc.) can decrease household food waste in the short term.

H4: **Causal relation shopping lists and food waste**. The results do not support the fourth hypothesis either. Although shopping list usage increased and household food waste decreased over time, both behaviors were not significantly associated, and we could not state that the former caused the latter. Previous research, including Study 1, suggests that people who make shopping lists more frequently waste less food (see Derksen & Aardening, 2019; Jörissen et al., 2015). However, to date, no research indicates a causal relationship between the two. Therefore, the experimental study featured in this research was a first attempt to investigate a causal relationship and no significant effect was found. Moreover, this study employed more specific measures of food waste and shopping lists usage compared to previous research. This could have affected the outcomes of both strains of research.

Finally, one more reason why this intervention was ineffective was that behavior change in the domain of food waste reduction requires long-term change. Food waste behaviors constitute an interplay between individual and societal factors (van Geffen et al., 2016). Additionally, making shopping lists is a habitual behavior (Thomas & Garland, 2004) making it difficult to change (Webb & Sheeran, 2006). For these reasons, an approach that covers long-term change is required. However, due to limited time available, this study only invoked short-term behavior change which might be too short to change a habit (Lally et al., 2010). This raises an interesting question of whether making shopping lists in the long run would affect household food waste.

Limitations

The present research presents some limitations. First, self-reported data were used. Although self-reported data may be particularly appropriate for large-scale measurements of food waste (van Herpen et al., 2019), the socially desirable nature of the topic suggests the likelihood that respondents considerably underreport the actual amount of food waste (van Herpen et al. 2019). Nevertheless, the inclusion of a valid questionnaire is closer to reality

than survey questions about general food waste and allows to differentiate differences between households over time.

Secondly, this research used convenience samples, albeit with actual adults in households. Therefore, households who agreed to take part in this study may possibly have been more concerned about food waste than the average population. As a result, the sample might not have been representative of the general population for which the generalizability of findings remains limited.

Future research

The first proposal for future research is to improve the intervention used to increase shopping list usage. First, it is advised to make the intervention more appealing and engaging, for instance by turning it into a usable product instead of a readable flyer. This is hoped to increase active processing which consequently may result in a larger change on a habitual behavior such as making shopping lists. Secondly, it is proposed to further investigate the relation between shopping lists and food waste. The present research could not establish a causal relationship, partly due to a lack in the effectiveness of the intervention and possibly due to lacking sufficient power. On that note, it remains interesting to research the relation between shopping lists and food waste. Finally, it is recommended to execute research with bigger sample sizes and feature increasingly specific ways of measuring food waste. For example, waste compositional analysis (i.e., physically separating, weighing and categorizing waste from garbage bags)is expected to yield reliable measurements, however, is simultaneously time-consuming (Van Herpen et al., 2019). Alternatively, recording food waste utilizing a diary is a commonly used possibility which, in turn, can be seen as a motivator and visible reminder (i.e., intervention) on itself.

Conclusion

Overall, the results provide important insights for researchers and actors in the field interested in designing interventions to reduce household food waste. In answer to the call for research investigating the effectiveness of food waste interventions (Stöckili et al., 2018; Reynolds et al., 2019; Karunasena et al., 2020), this study may be used as a resource. Notwithstanding interventions that have been developed to reduce household food waste (e.g., Pelt et al., 2020; Van Dooren et al., 2020; Romani et al., 2016), quantitative work evaluating their effect remains limited. This research attempted to add to this collective knowledge, employing a decent experimental design. Doing so, we aspire to offer relevant starting points to further investigate household food waste and the role of shopping lists therein.

References

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Arnaud, A., Kollmann, A., & Berndt, A. (2015). Generation Y: the development and use of shopping lists. *Advances in Social Sciences Research Journal*, *2*(9). https://doi.org/10.14738/assrj.29.1416

Aronson, E. (1999). The power of self-persuasion. *American Psychologist, 54*(11), 875-884. https://doi.org/10.1037/h0088188

Aschemann-Witzel, J., de Hooge, I., & Normann, A. (2016). Consumer-related food waste: Role of food marketing and retailers and potential for action. *Journal of International Food and Agribusiness Marketing, 28*(3), 271-285. https://doi.org/10.1080/08974438.2015.1110549

Block, L. G., & Morwitz, V. G. (1999). Shopping lists as an external memory aid for grocery shopping: Influences on list writing and list fulfillment. *Journal of Consumer Psychology, 8*(4), 343-375. https://doi.org/10.1207/s15327663jcp0804_01

Bolderdijk, J. W., Steg, L., Geller, E. S., Lehman, P. K., & Postmes, T. (2013). Comparing the effectiveness of monetary versus moral motives in environmental campaigning. *Nature Climate Change, 3*, 412-416. https://doi.org/10.1038/nclimate1767

Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology, 58*(6), 1015-1026. https://doi.org/10.1037/0022-3514.58.6.1015

Cohen, J. (1992). Statistical Power Analysis. *Directions in Psychological Science, 1*(3), 98-101. https://doi.org/10.1111/1467-8721.ep10768783.

Custers, R., & Aarts, H. (2010). The unconscious will: How the pursuit of goals operates outside of conscious awareness. *Science, 329*(5987), 47-50. https://doi.org.10.1126/science.1188595

Davydenko, M. & Peetz, J. (2020). Shopping less with shopping lists: Planning individual expenses ahead of time affects purchasing behavior when online grocery shopping. *Journal of Consumer Behavior, 19*(3), 240-251. https://doi.org/10.1002/cb.1812

Derksen, E., & Aardeningen, P. (2019). *Voedselverspilling zelfrapportage; Inschatting van de hoeveelheid voedselverspilling per jaar door Nederlandse consumenten op basis van zelfrapportage*. Unpublished internal document, Voedingscentrum.

European Commission. (2016). *Estimates of European food waste levels.* EU-Fusions. https://www.eu-fusions.org/phocadownload/Publications/Estimates%20of%20European%20food%20waste%20levels.pdf

Farrow, K., Grolleau, G., & Ibanez, L. (2017). Social norms and pro environmental behavior; a review of the evidence. *Ecological Economics, 140,* 1-13. https://doi.org/10.1016/j.ecolecon.2017.04.017

Fernandes, D., Puntoni, S., van Osselaer, S. M. & Cowley, E. (2016). When and why we forget to buy. *Journal of Consumer Psychology, 26(*3), 363-380. https://doi.org/10.1016/j.jcps.2015.06.012

Food and Agricultural Organisation (FAO). 2011. *Global food losses and food waste – extent, causes and prevention.* FAO.

http://www.fao.org/fileadmin/user_upload/suistainability/pdf/Global_Food_Losses_and_Food_Waste.pdf

Food and Argicultural Organisation (FAO). 2019. *The state of food security and nutrition in the world*. FAO. https://www.fao.org/3/ca5162en/ca5162en.pdf

Foster, P., Ramaswamy, V., Artaxo, P., Berntsen, T., Betts, R. et al. (2007). Changes in atmospheric constituents and in radiative forcing. In: Solomon S., Qin, D., Manning, M., Chen, Z., Marquis, M. et al., editors. Climate Change 2007: The physical science basis contribution of working group I to the fourth assessment report of the intergovernmental panel on climate change. Cambridge: Cambridge University Press.

Geller, E. S., Farris, J. C., & Post, D. S. (1973). Prompting a consumer behavior for pollution control. *Journal of Applied Behavioral Analyses, 6*(3), 367-376. https://10.1901/jaba.1973.6-367

Gliem, J. A., & Gliem, R. R. (2003). Interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. Paper presented at the *Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education Calculating.* https://scholarworks.iupui.edu/bitstream/handle/1805/344/Gliem+&+Gliem.pdf?sequence=1

Green, L. & Myerson, J. (2004). A discounting framework for choice with delayed and probabilistic rewards. *Psychological bulletin, 130* (5), 769-792. https://doi.org/10.1037/0033-2909.130.5.769

Huang, Y., & Yang, Z. (2018). Type or write? How a paper versus a digital shopping list influences the way consumers plan and shop. *Journal of the Association for Consumer Research, 3*(3), 396-409. https://doi.org/10.1086/698877

Inman, J. J., Winer, R. S., & Ferrato, R. (2009). The interplay among category characteristics, consumer characteristics, and customer activities on in-store decision making. *Journal of Marketing, 73(*5), 19-29. https://doi.org/10.1509/jmkg.75.5.19

Janssen, E., van der Sluis, M., Jonkers, R., & de Haan, C. (2010). Determinantenonderzoek. Unpublished internal document, Voedingscentrum.

Jörissen, J., Priefer, C., & Bräutigam, K. (2015). Food waste generation at household level: Results of a survey among employees of two European research centers in Italy and Germany. *Sustainability, 7*(3), 2695-2715. https://doi.org/10.3390/su7032695

Karunasena, G. G., Pearson, D., & Nabi, N. (2020). *Global best practice for designing interventions to reduce household food waste*. https://fightfoodwastecrc.com.au/wp-content/uploads/2020/10/Best-Practice-Intervention-Report_Final.pdf

Luiting-Drijfhout, M. (2020). *Consumer food waste. Understanding why consumers do not eat the food they acquire*. University of Groningen, SOM research school. https://doi.org/10.33612/diss.136231073

Lally, P., Van Jaarsveld, C. H., Potts, H. W., & Wardle, J. (2010). How are habits formed: Modeling habit formation in the real world. *European Journal of Social Psychology, 40,* 998-1009. https://doi.org.10.1002/ejsp.674

Maio, G. R., Pakizeh, A., Cheung, W. Y., & Rees, K. J. (2009). Changing, priming, and activating on values: Effects via motivational relations in a circular model. *Journal of Personality and Social Psychology*, *97*(4), 699-715. https://doi.org/10.1037/a0016420

McCambridge, J., Witton, J., & Elbourne, D. R. (2014). Systematic review of the Hawthorne effect: new concepts are needed to study research participation effects. *Journal of Clinical Epidemiology, 67*(3), 267-277. https://doi.org.10.1016/j.jclinepi.2013.08.015

Pelt, A., Saint-Bauzel, R., Barbier, L., & Fointiat, V. (2020). Food waste: Disapproving, but still doing. An evidence-based intervention to reduce waste at household. *Resources, Conservation & Recycling, 162*(3), 105059. https://doi.org/10.1016/j.resconrec.2020.105059.

Reijula, S., & Hertwig, R. (2020). Self-nudging and the citizen choice architect. *Behavioural Public Policy, 1-31.* https://10.1017/bpp.2020

Reynolds, C., Goucher, L., Bromley, S., Gillick, S., Wells, V. K., Evans, D., Koh, L., Kanyama, A. C., Katzeff, C., Svenfelt, A., & Jackson, P. (2019). Review: Consumption-stage food waste reduction interventions – What works and how to design better interventions. *Food Policy, 83,* 7-27. https://doi.org./10.1016/j.foodpol.2019.01.009

Romani, S., Grappi, S., Bagozzi, R., & Barone, A. M. (2017). A study of food management behaviors and the role of food preparation planning in reducing waste. *Appetite, 121,* 215-227. https://doi.org/10.1015/j.appet.2017.11.093

Rothschild, M. (1999). Carrots, sticks and promises: a conceptual framework for the management of public health and social issue behaviors. *Journal of Marketing, 63(*4), 24-37. https://doi.org/10.2307/1251972

Schanes, K., Dobernig, K., & Gözet, B. (2018). Food waste matters – A systematic review of household food waste practices and their policy implications. *Journal of Cleaner Production, 182,* 978-991. https://doi.org/10.1016/j.jclepro.2018.02.030

Schwartz, D., Bruine de Bruin, W., Fischoff, B., & Lave, L. (2015). Advertising energy saving programs: the potential environmental cost of emphasizing monetary savings. *Journal of Experimental Psychology; Applied, 21*(2), 158-166. https://doi.org/10.1037/xap0000042

Schwartz, S. H. (1992). Universals in the content and structure of values. Theoretical advances and empirical test in 20 countries. *Advances in Experimental Social Psychology, 25,* 1-65. https://doi.org/10.1016/s0065-2601(08)60281-6

Schwom, R.M & Lorenzen, J. A. (2012). Changing household consumption to address climate change: social scientific insights and challenges. *WIREs Climate Change, 3(*5), 379-395. https://doi.org/10.1002/wcc.182

Secondi, L., Principato, L., & Laureti, T. (2015). Household food waste behaviour in EU-27 countries: A multilevel analysis. *Food Policy, 56,* 25-40. http://dx.doi.org/10.1016/j.foodpol.2015.07.007

Seiter, J. S., & Gass, R. H. (2004*). Perspectives on persuasion, social influence, and compliance gaining*. Boston: Allyn and Bacon.

Soethoudt, H. & Vollebregt, M. (2017). *Monitor voedselverspilling update 2009 – 2017*. https://www.wur.nl/nl/show/Monitor-Voedselverspilling-Update-2009-2017.htm

Stancu, V., Haugaard, P., & Lätheenmäki, L. (2016). Determinants of consumer food waste behaviour: Two routes to food waste. *Appetite, 96,* 7-17. https://dx.doi.org/10.1016/j.appet.2015.08.025

Stefan, V., van Herpen, E., Tudoran, A. A., & Lähteenmäki, L. (2013). Avoiding food waste by Romanian consumers: The importance of planning and shopping routines. *Food Quality and Preference, 28*(1), 375-381. https://dx.doi.org/10.1016/j.foodqual.2012.11.001

Stöckili, S., Niklaus, E., & Dorn, M. (2018). Call for testing interventions to prevent consumer food waste. *Resources, Conservation and Recycling, 136,* 445-462. https://doi.org/10.1016/j.resconrec.2018.03.029

Suher, J., Huang, S. C., & Lee, L. (2019). Planning for multiple shopping goals in the marketplace. *Journal of Consumer Psychology*, *29*(4), 642-651. https://doi.org/10.1002/jcpy.1130

Temminghoff, M. B. M. & van Helden, G. (2015). *Voedselverspilling meting 2015, GfK. Dongen*. Unpublished internal document, Voedingscentrum.

Temminghoff, M. B. M. & van Helden, G. (2017). *Voedselverspilling meting 2017, GfK. Dongen*. Unpublished internal document, Voedingscentrum.

Thomas, A., & Garland, R. (2004). Grocery shopping: list and non-list usage. *Marketing, Intelligence & Planning, 22(*6), 623-635. https://doi.org/10.1108/02634500410559015

Tijs, M. S., Karremans, J. C., Veling, H., de Lange, M. A., van Meegeren, P. & Lion, R. (2017). Saving water to save the environment: contrasting the effectiveness of environmental and monetary appeals in a residential water saving intervention. *Social Influence, 12*(2-3), 69-79. https://doi.org/10.1080/15534510.2017.1333967

Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review, 117*(2), 440-463. https://doi.org/10.1036/a0018963

Trope, Y., Liberman, N., & Wakslak, C. (2007). Construal levels and psychological distance: Effects on representation, prediction, evaluation, and behavior. *Journal of Consumer Psychology, 17*(2), 83-95. https://doi.org/10.1016/s1057-7408(07)70013-X

United Nations Environment Program (2021). *Food Waste Index Report 2021.* UNEP. https://wedocs.unep.org/bitstream/handle/20.500.11822/35280/FoodWaste.pdf

USEP (2009). U.S. Emissions inventory 2009: Inventory of U.S. Greenhouse Gas Emissions and Sinks:1990 – 2007. EPA. https://www.epa.gov/sites/production/files/2015-12/documents/ghg2007entire_report-508.pdf

Van Dooren, C. & Knüppe, J. (2020). *Voedselverspilling door consumenten; Factsheet*. Voedingscentrum. https://www.voedingscentrum.nl/Assets/Uploads/voedingscentrum/Documents/Professionals/Pers/Factsheets/Factsheet%20voedselverspilling.pdf

Van Dooren, C., Janmaat, O., Snoek, J., & Schrijnen, M. (2019). Measuring food waste in Dutch households: A synthesis of three studies. *Waste Management, 1(*93), 153-164. https://doi.org/10.1016/jwasman.2019.05.025

Van Dooren, C., Mensink, F., Eversteijn, K., & Schrijnen, M. (2019). Development and evaluation of the Eetmaatje measuring cup for rice and pasta as intervention to reduce food waste. *Frontiers in Nutrition, 6,* 197. https://doi.org/10.3389/fnut.2019.00197

Van Geffen, L., Van Herpen, E., Van Trijp, H. (2020). Houshold food waste – How to avoid it? An integrative review. In: Närvänen E., Mesiranta N., Mattila, M., Heikkinen, A. (eds). *Food Waste Management.* Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-205614-2

Van Geffen, L. E. J., van Herpen, E., van Trijp, J. C. M. (2016). *Causes & Determinants of consumer food waste.* EU-Refresh. https://eu-refresh.org/causes-determinants-consumers-food-waste.

Van Herpen, E., Van der Lans, I. A., Holshuysen, N., Nijenhuis-de Vries, M., & Quested, T. E. (2019). Comparing wasted apples and oranges: An assessment of methods to measure household food waste. *Waste Management, 88,* 71-84. https://doi.org.10.1016/j.wasman.2019.03.013

Van Herpen, E., van Geffen, L., Nijenhuis-de Vries, M., Holthuysen, N. van der Lans, I., & Quested, T. (2019). A validated survey to measure household food waste. *MethodsX, 6,* 2767-2775. https://doi.org/10.1016/j.mex.2019.10.029

Webb, T. L., & Sheeran, P. (2006). Does changing behavioural intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin, 132,* 249-268. https://doi.org.10.1037/0033-2909.132.2.248

Appendices

Appendix A. Questionnaire Study 1

1 **Wat is uw leeftijd?** *Single-responsevraag*

- ○ Jonger dan 18 jaar [>> Vraag 6.]
- ○ 18 - 24 jaar
- ○ 25 - 34 jaar
- ○ 35 - 44 jaar
- ○ 45 - 54 jaar
- ○ 55 - 65 jaar
- ○ Ouder dan 65 jaar [>> Vraag 6.]

2 **Wat is uw geslacht?** *Single-responsevraag*

- ○ Man
- ○ Vrouw
- ○ Anders
- ○ Zeg ik liever niet

3 **Wat is uw hoogst voltooide opleiding?** *Single-responsevraag*

- ○ Geen of lagere school
- ○ LBO / MAVO / VMBO
- ○ MBO
- ○ HAVO / VWO
- ○ HBO
- ○ Universiteit
- ○ Wil ik niet zeggen

4 **Doet u wel eens boodschappen voor uw huishouden?** *Single-responsevraag*
Hieronder vallen zowel boodschappen doen in een winkel als online.

- ○ Ja
- ○ Nee, nooit [>> Vraag 6.]

5 **Hoe doet u uw boodschappen?** *Single-responsevraag*

- ○ In een winkel of op een markt (bijvoorbeeld supermarkt, groenteboer) [>> Vraag 7.]
- ○ Online (bijvoorbeeld door te bestellen via de website van een supermarkt) [>> Vraag 6.]
- ○ Soms in een winkel, soms online [>> Vraag 7.]

Manier en regelmaat van boodschappen doen en gebruik van boodschappenlijstjes. *Tussenpagina*
De volgende vragen gaan over hoe u boodschappen doet, hoe vaak en hoe vaak u een boodschappenlijstje gebruikt.

Met een boodschappenlijstje bedoelen we een vooraf gemaakte lijst of opsomming van boodschappen die u van plan bent te gaan kopen. Als u bijvoorbeeld op een papiertje schrijft wat u nodig heeft voor een recept, wordt dat gezien als een boodschappenlijstje. Het noteren van boodschappen op uw mobiel valt ook onder een boodschappenlijstje. Boodschappen die u in uw hoofd onthoudt en dus niet ergens noteert, worden niet gezien als boodschappenlijstjes.

6 **Hoe vaak deed u de afgelopen week boodschappen?** *Single-responsevraag*
Als u niet precies weet hoe vaak, geef dan een schatting.

- ○ Iedere dag
- ○ Meerdere keren (4 tot 6 keer)
- ○ Enkele keren (2 tot 3 keer)
- ○ 1 keer
- ○ Ik heb de afgelopen week geen boodschappen gedaan [>> Vraag 10.]

7 **Hoe vaak gebruikte u daarbij afgelopen week een boodschappenlijstje?** *Single-responsevraag*

- ○ Iedere dag
- ○ Meerdere keren (4 tot 6 keer)
- ○ Enkele keren (2 tot 3 keer)
- ○ 1 keer
- ○ Niet
- ○ Ik gebruik alleen een boodschappenlijstje bij nieuwe recepten of speciale gelegenheden

8 **Hoe vaak gebruikt u bij het doen van boodschappen een boodschappenlijstje?** *Single-responsevraag*

- ○ Heel vaak
- ○ Vaak
- ○ Soms
- ○ Zelden
- ○ Nooit
- ○ Ik gebruik alleen een boodschappenlijstje bij nieuwe recepten of speciale gelegenheden

9 **Hoe vaak zijn de volgende stellingen op u van toepassing bij het boodschappen doen?** *Tabelvraag (single response)*

	Heel vaak	Vaak	Soms	Zelden	Nooit	Geen mening	
Ik vergeet producten te kopen die ik wel wilde kopen	○	○	○	○	○	○	
Ik koop meer producten dan dat ik nodig heb	○	○	○	○	○	○	

Manier van gebruik boodschappenlijstjes *Tussenpagina*
De volgende vragen gaan over waarom u (niet) een boodschappenlijstje gebruikt. Doet u dit om minder te vergeten? Of kunt u alles onthouden wat u nodig heeft?

10

In hoeverre zijn de volgende stellingen op u van toepassing?Ik geloof dat een boodschappenlijstje kan helpen om… *Tabelvraag (single response)*

	Helemaal mee oneens	Mee oneens	Niet mee oneens, niet mee eens	Mee eens	Helemaal mee eens	Geen mening	
Minder te vergeten in de winkel	○	○	○	○	○	○	
Sneller boodschappen te doen	○	○	○	○	○	○	
Niet te veel geld uit te geven	○	○	○	○	○	○	
Gezonde keuzes te maken	○	○	○	○	○	○	
Minder voedsel te verspillen	○	○	○	○	○	○	

11

In hoeverre zijn de volgende stellingen op u van toepassing? *Tabelvraag (single response)*

	Helemaal mee oneens	Mee oneens	Niet mee oneens, niet mee eens	Mee eens	Helemaal mee eens	Geen mening	
Ik kan onthouden wat ik nodig heb als ik zonder lijstje naar de winkel ga	○	○	○	○	○	○	
Ik vind het fijn om in de winkel pas te kiezen wat ik nodig heb	○	○	○	○	○	○	
Het kost veel moeite om een boodschappenlijstje op te stellen	○	○	○	○	○	○	

12 **Wat is uw voornaamste reden om een boodschappenlijstje te maken?** *Single-responsevraag*

- ○ Ik vergeet minder vaak iets te kopen in de winkel
- ○ Ik kan sneller mijn boodschappen doen
- ○ Ik maak gezondere keuzes
- ○ Ik geef niet te veel geld uit
- ○ Ik verspil minder voedsel
- ○ Anders namelijk: … Vp

13 **Wat is uw voornaamste reden om geen boodschappenlijstje te maken?** *Single-responsevraag*

- ○ Ik doe alleen boodschappen zonder lijstje, als ik maar weinig producten hoef te halen
- ○ Ik vind het fijn om in de winkel pas te kiezen wat ik nodig heb
- ○ Het kost te veel moeite om een boodschappenlijstje te maken
- ○ Ik kan onthouden wat ik nodig heb
- ○ Anders namelijk: … Vp

Soorten boodschappenlijstjes *Tussenpagina*

De volgende vragen gaan over hoe uw boodschappenlijstjes eruit zien. Gebruikt u een papiertje of uw telefoon? En welke producten zet u meestal op het boodschappenlijstje?

14 **Op welke manier maakt u op dit moment een boodschappenlijstje?** *Single-responsevraag*

- ○ Op een notitieblok of papiertje
- ○ Op een krijtbordje of iets dergelijks wat in huis hangt
- ○ Op mijn mobiel, via een notitie
- ○ Op mijn mobiel, via een boodschappenlijst app
- ○ Anders namelijk: …

15 **Op wat voor materiaal maakt u meestal boodschappenlijstjes?** *Single-responsevraag*

- ○ Op losse papiertjes die ik in huis heb, zoals een oude envelop of krant
- ○ Op een notitieblok of schrift dat ik altijd gebruik voor boodschappenlijstjes
- ○ Op een notitieblok of schrift met een weekplanning die ik altijd gebruik voor boodschappenlijstjes
- ○ Anders namelijk: …

16 **Welke van de volgende stellingen sluit het beste aan bij wat u op uw boodschappenlijstjes zet?** *Single-responsevraag*

- ○ Alle boodschappen die ik nodig heb met daarbij de hoeveelheid (bijvoorbeeld aardappelen 500 gram)
- ○ Alle boodschappen die ik nodig heb, maar zonder de hoeveelheid (bijvoorbeeld aardappelen, vlees, groenten)
- ○ Alleen de boodschappen die ik waarschijnlijk vergeet (bijvoorbeeld wc papier)
- ○ Alleen de boodschappen die ik altijd in huis wil hebben (bijvoorbeeld brood, melk, kaas)

17 **In hoeverre zijn de volgende stellingen op u van toepassing?** *Tabelvraag (single response)*

	Helemaal mee oneens	Mee oneens	Niet mee oneens, niet mee eens	Mee eens	Helemaal mee eens	
Ik wil in de winkel beslissen wat ik naast wat er op mijn boodschappenlijstje staat nog meer nodig heb	○	○	○	○	○	
Het kost te veel tijd om een boodschappenlijstje te maken waar alles op staat wat ik nodig heb	○	○	○	○	○	
Ik vind het belangrijk om alle producten die ik nodig heb op mijn boodschappenlijstje te zetten	○	○	○	○	○	

18 **In hoeverre zijn de volgende stellingen op u van toepassing?** *Tabelvraag (single response)*

	Helemaal mee oneens	Mee oneens	Niet mee oneens, niet mee eens	Mee eens	Helemaal mee eens	
Ik kan zelf onthouden hoeveel ik van een product nodig heb	○	○	○	○	○	
Het kost te veel tijd om op te schrijven hoeveel ik per product nodig heb	○	○	○	○	○	
Ik kan in de winkel zelf goed inschatten hoeveel ik per product nodig heb	○	○	○	○	○	

Manieren van boodschappenlijstjes maken *Tussenpagina*

De volgende vragen gaan over hoe u een boodschappenlijstjes maakt. Controleert u altijd de voorraadkast? Plant u uw boodschappen van tevoren? En neemt u aanbiedingen uit folders hierin mee?

19

Welke van de volgende stellingen zijn op u van toepassing als u een boodschappenlijstje maakt?Voordat ik een boodschappenlijstje maak, dan … *Tabelvraag (single response)*

	Heel vaak	Vaak	Soms	Zelden	Nooit	Niet van toepassing	Geen mening	
Controleer ik eerst mijn voorraadkast	○	○	○	○	○	○	○	
Controleer ik eerst mijn koelkast	○	○	○	○	○	○	○	
Controleer ik eerst mijn vriezer	○	○	○	○	○	○	○	
Kijk ik eerst goed naar de planning van de komende dagen	○	○	○	○	○	○	○	
Pak ik eerst folders erbij om aanbiedingen mee te nemen	○	○	○	○	○	○	○	

20

In hoeverre zijn de volgende stellingen op u van toepassing? *Tabelvraag (single response)*

	Helemaal mee oneens	Mee oneens	Niet mee oneens, niet mee eens	Mee eens	Helemaal mee eens	Geen mening
Ik maak mijn boodschappenlijstje meestal alleen	○	○	○	○	○	○
Ik maak mijn boodschappenlijstje meestal met een huisgenoot (bijvoorbeeld partner)	○	○	○	○	○	○
Andere mensen in mijn huishouden moeten ook producten kunnen toevoegen aan het boodschappenlijstje	○	○	○	○	○	○

Boodschappenlijstjes maken in de toekomst *Tussenpagina*

De volgende vragen gaan over hoe u boodschappenlijstjes wilt maken in de toekomst. Wilt u vaker boodschappenlijstjes maken? Wilt u anders boodschappenlijstjes maken? En waarom niet?

21

In hoeverre zijn de volgende stellingen op u van toepassing? *Tabelvraag (single response)*

	Helemaal mee oneens	Mee oneens	Niet mee oneens, niet mee eens	Mee eens	Helemaal mee eens	Geen mening	
Ik wil vaker een boodschappenlijstje maken	○	○	○	○	○	○	
Ik heb de tijd om vaker een boodschappenlijstje te maken	○	○	○	○	○	○	
Ik vind het belangrijk om vaker een boodschappenlijstje te maken	○	○	○	○	○	○	

22

In hoeverre zijn de volgende stellingen op u van toepassing? *Tabelvraag (single response)*

	Helemaal mee oneens	Mee oneens	Niet mee oneens, niet mee eens	Mee eens	Helemaal mee eens	Geen mening	
Ik maak altijd op dezelfde manier boodschappenlijstjes	○	○	○	○	○	○	
Ik ben gehecht aan mijn manier van boodschappenlijstjes maken	○	○	○	○	○	○	
Ik zou niet graag mijn boodschappenlijstje op een andere manier willen maken	○	○	○	○	○	○	

23 **In hoeverre zijn de volgende stellingen op u van toepassing?Ik zou vaker een boodschappenlijstje maken als …** *Tabelvraag (single response)*

	Helemaal mee oneens	Mee oneens	Niet mee oneens, niet mee eens	Mee eens	Helemaal mee eens	Geen mening	
Ik een notitieblok heb die daar speciaal voor bedoeld is	○	○	○	○	○	○	
Ik eraan word herinnert om het te doen	○	○	○	○	○	○	
Ik weet dat het nuttig is	○	○	○	○	○	○	
Ik weet wat de beste manier is om het te doen	○	○	○	○	○	○	

Gezinssamenstelling *Tussenpagina*
De volgende vragen gaan over uw gezinssamenstelling.

24 **Wat is uw woonsituatie?** *Single-responsevraag*

- ○ ik woon bij mijn ouder(s) / verzorger(s)
- ○ ik woon alleen
- ○ ik woon samen met partner zonder kinderen
- ○ ik woon samen met partner en kind(eren)
- ○ ik woon zonder partner, met kind(eren)
- ○ ik woon met andere mensen (bijv. in een studentenhuis, met broer/zus, etc.)

25 **In welke leeftijd(en) zijn er kinderen aanwezig in uw huishouden?** *Multi-responsevraag*
Meerdere antwoorden mogelijk

- ☐ Jonger dan 4 jaar
- ☐ Van 4 tot 12 jaar (basisschool)
- ☐ Van 13 tot 18 jaar (middelbare school)
- ☐ Ouder dan 18 jaar

26 **Uit hoeveel personen bestaat uw huishouden (inclusief uzelf)?** *Single-responsevraag*
Bijvoorbeeld: als u samen met uw partner en 2 kinderen woont, dan bestaat uw huishouden uit 4 personen.

- ○ 1 persoon
- ○ 2 personen
- ○ 3 personen
- ○ 4 personen
- ○ 5 personen
- ○ 6 personen of meer

Gebruik van voedsel binnen het huishouden *Tussenpagina*
De volgende vragen gaan over het gebruik van voedsel in uw huishouden.

27 **Ik schat dat ik wel eens iets van eten weggooi:** *Single-responsevraag*

- ○ Dagelijks
- ○ Enkele keren per week
- ○ Ongeveer 1 keer per week
- ○ Minder dan 1 keer per week
- ○ Zelden tot nooit

28 **In hoeverre zijn de volgende stellingen op u van toepassing?Ik gooi wel eens eten of drinken weg omdat …** *Tabelvraag (single response)*

	Heel vaak	Vaak	Soms	Zelden	Nooit	Geen mening	
Na het boodschappen doen blijkt dat ik het al in huis had	○	○	○	○	○	○	
De houdbaarheidsdatum is verstreken	○	○	○	○	○	○	
Er restjes overblijven na het koken en eten	○	○	○	○	○	○	

29 **In hoeverre zijn de volgende stellingen op u van toepassing?Ik let goed op dat ik …** *Tabelvraag (single response)*

	Helemaal oneens	Mee oneens	Niet mee eens, niet mee oneens	Mee eens	Helemaal eens	Geen mening	
Niet te veel eten koop, zodat ik niets hoef weg te gooien.	○	○	○	○	○	○	
Niet te veel eten kook, zodat ik niets hoef weg te gooien.	○	○	○	○	○	○	
Eten goed bewaar, zodat ik niets hoef weg te gooien	○	○	○	○	○	○	

30 **Geef voor onderstaande uitspraken aan in welke mate u het met de uitspraak eens dan wel oneens bent.** *Tabelvraag (single response)*

	Helemaal mee oneens	Mee oneens	Niet mee oneens, niet mee eens	Mee eens	Helemaal mee eens	Weet ik niet	
Ik kan zelf een bijdrage leveren aan het verminderen van voedselverspilling	○	○	○	○	○	○	
Ik vind het belangrijk om zo min mogelijk voedsel te verspillen	○	○	○	○	○	○	
Ik ben gemotiveerd om minder voedsel te verspillen	○	○	○	○	○	○	

Appendix B. Intervention Study 2

Appendix C. Questionnaire Study 2

Informatiebrief en toestemmingsformulier

Beste deelnemer,

Dit onderzoek wordt uitgevoerd in het kader van mijn masteronderzoek van de opleiding Behaviour Change aan de Radboud Universiteit. Ik loop stage bij het Voedingscentrum waar ik onderzoek doe naar voedselverspilling.

Om een beter beeld te krijgen van voedselverspilling in Nederland, wil ik je uitnodigen deze enquête in te vullen.

Het invullen van de enquête duurt ongeveer 10 minuten.

Je antwoorden zijn vertrouwelijk en worden anoniem verwerkt.
Mijn begeleider en ik zijn de enigen die toegang hebben tot je antwoorden en kunnen deze niet herleiden tot jou als individu. Je gegevens zullen aan het eind van het onderzoek verwijderd worden (uiterlijk eind augustus 2022).

Je bent vrij om deel te nemen aan deze enquête en ook vrij om te stoppen als je niet langer aan het onderzoek mee wilt doen.

Eventuele vragen die je hebt naar aanleiding van deze informatie kun je stellen door mij te mailen:
paul.peeters@student.ru.nl

Bij voorbaat dank voor je bijdrage aan dit onderzoek.

Hartelijke groet,
Paul Peeters

Geef hieronder toestemming voor bovengenoemd onderzoek.
Mocht je geen toestemming willen geven om mee te doen aan dit onderzoek, dan kun je deze pagina sluiten.
Door op onderstaande knop te drukken, bevestig je dat je begrijpt waar het onderzoek over gaat en dat deelname vrijwillig is. Bovendien geef je toestemming dat de gegevens die je invult in deze vragenlijst gebruikt mogen worden voor het onderzoek zoals hierboven beschreven staat.

○ Ja ik geef toestemming en wil doorgaan met het onderzoek.

Radboud University

Deel 1: Voedselverspilling in uw huishouden afgelopen week
Lees dit eerst voordat u doorgaat naar de eerste vraag

Het eerste deel van dit onderzoek gaat over eten en drinken dat afgelopen week in uw huishouden is weggegooid. Deze vragen gaan over:

- Alle eet- en drinkwaren die u op of in een (online) supermarkt heeft gekocht of zelf heeft gekweekt, die zijn weggegooid.
- Hieronder vallen ook producten die bedorven zijn of waarvan de houdbaarheidsdatum verstreken is.
- Het maakt niet uit of u de etenswaren in de gewone vuilnisbak, etensafvalcontainer of composthoop deed of aan een dier heeft gegeven (huisdier, vogels, enzovoort). Het is allemaal inbegrepen.

Het gaat niet om:
- Botten, schillen, zaden of stronken.
- Eet- en drinkwaren die worden weggegooid bij het eten in een restaurant of kantine.

→

Klik hieronder aan welke producten er in uw huishouden de afgelopen week (7 dagen) zijn weggegooid. In het geval van maaltijden, klik dan op verschillende hoofdingrediënten.

Bijvoorbeeld: Als u de vragenlijst op een maandag invult, kies dan de producten die zijn weggegooid in uw huishouden vanaf de maandag hiervoor.

- [ ] Verse groenten, salade en niet-verse groenten (pot / blik / diepvries)
- [ ] Vers fruit en niet-vers fruit (pot / blik / diepvries)
- [ ] Aardappelen of aardappelproducten (frietjes, chips, voorgekookte aardappelen, krieltjes, et cetera.
- [ ] Pasta
- [ ] Rijst en resterende graanproducten (inclusief wraps, couscous. et cetera)
- [ ] Bonen, linzen, kikkererwten et cetera.
- [ ] Vlees en/of vleesvervangers
- [ ] Vis
- [ ] Broodbeleg (vleeswaren, plakjes kaas, zoet beleg, et cetera)
- [ ] Brood
- [ ] Ontbijtgranen (muesli, crusli, brinta, et cetera)
- [ ] Yoghurt, vla, et cetera.
- [ ] Kaas (blokjes kaas, Franse kaasjes, geraspte kaas. Hier valt NIET onder: broodbeleg)
- [ ] Eieren
- [ ] Soepen en curries
- [ ] Sauzen (ketchup, mayonaise, cocktailsaus, et cetera)
- [ ] Tussendoortjes (snoep, koekjes, chocolade repen, chips, nootjes)
- [ ] Niet alcoholische dranken (melk, sappen, frisdrank. Hier valt NIET onder: water / koffie/ thee / limonade.)
- [ ] Alcoholische dranken
- [ ] Ik heb geen producten weggegooid

Verse groenten en niet-verse groenten

Hoeveel vers en niet-verse groenten zijn in de afgelopen week weggegooid in uw huishouden?

Een opscheplepel is 50 gram. Dit staat gelijk aan bijvoorbeeld een halve prei of vier champignons.

- ◯ Minder dan een opscheplepel
- ◯ 1 tot 2 opscheplepels
- ◯ 2 tot 4 opscheplepels
- ◯ 4 tot 6 opscheplepels
- ◯ Meer dan 6 opscheplepels

Deel 2: Voedselbeheer in het huishouden

Het tweede deel van deze enquête gaat over het voedselbeheer in uw huishouden: het kopen, bereiden en bewaren van voedsel.

Bent u meestal verantwoordelijk voor de boodschappen/ het kopen van voedsel binnen uw huishouden?

- ◯ Ja
- ◯ Nee

Hoe doet u uw boodschappen?

- ◯ In een winkel of op een markt (bijvoorbeeld supermarkt, groenteboer)
- ◯ Online (bijvoorbeeld door te bestellen via de website van een supermarkt)
- ◯ Soms in een winkel, soms online

Hoever woont u van de (super)markt waar u meestal boodschappen doet?

- ◯ Minder dan 5 minuten lopen
- ◯ Ongeveer 5 tot 15 minuten lopen
- ◯ Ongeveer 15 tot 30 minuten lopen
- ◯ Langer dan 30 minuten lopen

Hoe vaak deed u de afgelopen week (7 dagen) boodschappen om etenswaar te kopen?
Bijvoorbeeld: Als u de vragenlijst op een maandag invult, tel dan het aantal keren dat u boodschappen heeft gedaan vanaf de maandag hiervoor.
Vul als antwoord het aantal keren als cijfer in.

Hoe vaak gebruikte u daarbij een boodschappenlijstje?
Vul als antwoord het aantal keren als cijfer in.

Duid aan in welke mate u het met onderstaande uitspraken eens bent of niet.

	Niet van toepassing	Helemaal niet mee eens	Niet mee eens	Enigszins mee oneens	Niet mee oneens of eens	Enigszins mee eens	Mee eens	Helemaal mee eens
Ik vind het belangrijk om te weten wat ik aan eet- en drinkwaren in huis heb	○	○	○	○	○	○	○	○
Ik vind het belangrijk om boodschappenlijstjes te maken	○	○	○	○	○	○	○	○
ik wil nooit iets vergeten als ik in de supermarkt ben	○	○	○	○	○	○	○	○
Ik ga het liefst zo snel mogelijk de supermarkt door	○	○	○	○	○	○	○	○

Duid aan in welke mate u het met onderstaande uitspraken eens bent of niet.

	Helemaal niet mee eens	Niet mee eens	Enigszins mee oneens	Niet mee oneens of eens	Enigszins mee eens	Mee eens	Helemaal mee eens
Ik weet vaak aan het begin van de week wat ik de rest van de week ga eten	○	○	○	○	○	○	○
Als ik op vakantie ga, dan plan ik het liefst alle activiteiten voor vertrek	○	○	○	○	○	○	○
Ik plan graag ruim van tevoren in wanneer ik met een vriend of vriendin ga afspreken	○	○	○	○	○	○	○

Duid aan in welke mate u het met onderstaande uitspraken eens bent of niet.

	Niet van toepassing	Helemaal niet mee eens	Niet mee eens	Enigszins niet mee eens	Niet mee oneens of eens	Enigzins mee eens	Mee eens	Helemaal mee eens
Ik koop meestal dezelfde boodschappen	○	○	○	○	○	○	○	○
Ik heb een vast aantal recepten die ik kook	○	○	○	○	○	○	○	○
Ik maak mijn boodschappenlijstje altijd op dezelfde manier	○	○	○	○	○	○	○	○
Thuis eet er vaak onverwachts iemand niet mee	○	○	○	○	○	○	○	○

Hoe vaak controleerde u de afgelopen week (7 dagen), vóór het boodschappen doen, eerst uw vriezer, koelkast en voorraadkast?
Vul het aantal keren als numerieke waarde in

Hoe vaak dacht u afgelopen week, vóór het boodschappen doen, terug aan de boodschappen van de week ervoor om te bepalen hoeveel u nodig had?
Vul het aantal keren als numerieke waarde in

Hoe vaak zette u afgelopen week uw producten op uw boodschappenlijstje op looproute van de winkel?
Vul het aantal keren als numerieke waarde in

Geef aan hoe vaak de volgende stellingen op u van toepassing zijn geweest de afgelopen week.

In de afgelopen week...

	Niet van toepassing	Nooit	Zelden	Soms	Regelmatig	Vaak	Zeer vaak	Altijd
heb ik iets gekocht in de supermarkt waarvan achteraf bleek dat ik het al in huis had	○	○	○	○	○	○	○	○
heb ik iets gekocht in de supermarkt dat ik niet van plan was te kopen.	○	○	○	○	○	○	○	○
heb ik van te voren nagedacht over wat ik nodig had voordat ik boodschappen ging doen	○	○	○	○	○	○	○	○
heb ik mijn boodschappenlijstje in het zicht gelegd zodat ik deze niet zou vergeten	○	○	○	○	○	○	○	○

Duid aan in welke mate u het met onderstaande uitspraken eens bent of niet.

	Helemaal niet mee eens	Niet mee eens	Enigszins niet mee eens	Niet mee oneens of eens	Enigszins mee eens	Mee eens	Helemaal mee eens
Ik probeer in mijn dagelijks leven zo min mogelijk voedsel te verspillen	○	○	○	○	○	○	○
Ik vind het makkelijk om geen voedsel te verspillen	○	○	○	○	○	○	○
Ik probeer in mijn dagelijks leven zo duurzaam mogelijk te zijn	○	○	○	○	○	○	○
Ik voel me bezwaard als ik geen duurzame keuzes maak	○	○	○	○	○	○	○

Duid aan in welke mate u het met onderstaande uitspraken eens bent of niet.

	Helemaal niet mee eens	Niet mee eens	Enigszins mee oneens	Niet mee oneens of eens	Enigszins mee eens	Mee eens	Helemaal mee eens
Ik heb vaak haast	○	○	○	○	○	○	○
Ik heb het gevoel dat ik veel vrije tijd heb	○	○	○	○	○	○	○
Ik handel zo efficiënt mogelijk waar het kan om tijd te besparen	○	○	○	○	○	○	○

Duid aan in welke mate u het met onderstaande uitspraken eens bent of niet.

	Helemaal niet mee eens	Niet mee eens	Enigszins niet mee eens	Niet mee oneens of eens	Enigszins mee eens	Mee eens	Helemaal mee eens
Ik douche zo kort mogelijk	○	○	○	○	○	○	○
Ik reis zo min mogelijk met het vliegtuig	○	○	○	○	○	○	○
Ik houd rekening met het milieu waar het kan	○	○	○	○	○	○	○

Deel 3: Demografische gegevens
Het laatste deel van deze enquête gaat over uw demografische gegevens zoals leeftijd en woonsituatie.

Wat is uw leeftijd?

- ◯ Jonger dan 18 jaar
- ◯ 18 - 24 jaar
- ◯ 25 - 34 jaar
- ◯ 35 - 44 jaar
- ◯ 45 - 54 jaar
- ◯ 55 - 65 jaar
- ◯ Ouder dan 65 jaar

Wat is uw hoogst voltooide opleiding?

- ◯ Geen of lagere school
- ◯ LBO / MAVO / VMBO
- ◯ MBO
- ◯ HAVO / VWO
- ◯ HBO
- ◯ Universiteit
- ◯ Zeg ik liever niet

Wat is uw geslacht?

- ◯ Man
- ◯ Vrouw
- ◯ Non-binair
- ◯ Zeg ik liever niet

Wat is uw woonsituatie?

- ◯ Ik woon bij mijn ouder(s) / verzorger(s)
- ◯ Ik woon alleen
- ◯ Ik woon samen met partner zonder kinderen
- ◯ Ik woon samen met partner en kind(eren)
- ◯ Ik woon zonder partner, met kind(eren)
- ◯ Ik woon met andere mensen (bijv. in een studentenhuis, met broer/zus et cetera.)

Uit hoeveel personen bestaat uw huishouden (Inclusief uzelf)?
Bijvoorbeeld: als u samen met uw partner en 2 kinderen woont, dan bestaat uw huishouden uit 4 personen.

- ◯ 1 persoon
- ◯ 2 personen
- ◯ 3 personen
- ◯ 4 personen
- ◯ 5 personen
- ◯ 6 personen of meer

Deel 3: Post als onderdeel van het onderzoek.
Het laatste deel van dit onderzoek gaat over de brief die u eventueel thuisgestuurd heeft gekregen, en indien zo; wat u met de inhoud daarvan heeft gedaan.

Een aantal participanten heeft twee weken geleden een brief toegestuurd gekregen als onderdeel van het onderzoek.

Heeft u iets ontvangen, en zo ja: wat heeft u ontvangen?

- ◯ Een flyer en een boodschappenlijstje
- ◯ Ik heb niks ontvangen
- ◯ Anders, namelijk: _____

Heeft u de flyer gelezen?

- ○ Ja
- ○ Nee
- ○ Anders, namelijk:

Duid aan in welke mate u het eens bent of niet met onderstaande uitspraken

De flyer en het boodschappenlijstje...

	Niet van toepassing	Helemaal niet mee eens	Niet mee eens	Enigszins niet mee eens	Niet mee oneens of eens	Enigszins mee eens	Mee eens	Helemaal mee eens
Motiveerden mij om vaker boodschappenlijstjes te maken	○	○	○	○	○	○	○	○
Hielpen mij herinneren vaker boodschappenlijstjes te maken	○	○	○	○	○	○	○	○
Motiveerden mij om vaker boodschappenlijstjes te maken omdat het sneller is	○	○	○	○	○	○	○	○
Motiveerden mij om vaker boodschappenlijstjes te maken omdat het goed is voor het milieu	○	○	○	○	○	○	○	○

Heeft u het boodschappenlijstje dat u heeft ontvangen, gebruikt?

- (●) Ja
- ( ) Nee
- ( ) Anders, namelijk: _____

Geef voor onderstaande uitspraken over het boodschappenlijstje en tips

	Niet van toepassing	Helemaal niet mee eens	Niet mee eens	Enigszins niet mee eens	Niet mee oneens of eens	Enigszins mee eens	Mee eens	Helemaal mee eens
Door het boodschappenlijstje zijn mijn inkopen meer op maat.	○	○	○	○	○	○	○	○
Het boodschappenlijstje helpt mij om minder te voedsel te verspillen.	○	○	○	○	○	○	○	○
Het boodschappenlijstje ziet er leuk uit	○	○	○	○	○	○	○	○
Ik ben van plan om het boodschappenlijstje te blijven gebruiken.	○	○	○	○	○	○	○	○