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Citation: Reynolds, C., Toma, L., Thompson, B. & Tapper, K. (2025). Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation. Stirling, UK: Zero Waste Scotland.

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Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

Zero Waste Scotland
September 2025



Contents

Contents	2
Authorship and Acknowledgement.....	3
1 Executive Summary	4
1.1 Results.....	4
2 Aim	8
3 Methodology.....	9
4 Results	14
4.1 Causality analysis – Structural equation model (SEM)	14
4.2 Segmentation analysis – Latent Class Analysis (LCA).....	17
4.3 Statistical analysis of other questionnaire items.....	18
5 Conclusions	20
6 Appendices.....	22
6.1 Appendix 1 - Questionnaire	22
6.2 Appendix 2 – Alternative text summaries.....	53

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

Authorship and Acknowledgement

This report was commissioned by Zero Waste Scotland and prepared by Dr Luiza Toma and Dr Bethan Thompson of SRUC (Scotland's Rural College), and Prof Katy Tapper and Dr Christian Reynolds of City St George's, University of London, with members of the Zero Waste Scotland team, Emma Leask, Maggie Pollok, Campbell Reid, and Dr Roseanna Morrison of SRUC.

We acknowledge the support to the design of the conceptual model and questionnaire from Violeta Stancu, Ludovica Principato, Mark Boulet, Sabrina Stoeckli, Hilke Bos-Brouwers, and Erica van Herpen who formed an informal scientific advisory group to the project.

We are grateful to the participants in the survey.

*This report has been simplified in some sections with the assistance of AI to ensure the content is easily understandable and accessible to everyone.

1 Executive Summary

This project aimed to determine an analysis of food waste reduction behaviours of the Scottish population; improve the understanding of the factors influencing the classification into behavioural segments; and identify the behaviours most likely to be targeted by behavioural interventions with the highest impact at individual or societal level.

Following a Rapid Evidence Assessment (REA) exercise of existing research and engagement with international experts on food waste behaviours, the scope of this study was refined to a causality and segmentation analysis of food planning behaviours, more specifically flexible meal planning, as they are among the behaviours most likely to be targeted by interventions. The choice was reinforced by the results of the data analysis in this case study, which also showed that these behaviours were significantly associated with self-assessed food waste.

A new conceptual model was developed, tested and estimated with survey data from 1,541 valid completed survey responses and analytical methods to estimate the effects of causal factors on food planning behaviours and (perceived) impact on waste. Latent class analysis (LCA) was undertaken to define the segmentation by flexible planning behaviours.

The causality (structural equation) models (SEM) explained a relevant share of the variance in the flexible planning behaviours and the self-assessed food waste in the household, all model relationships were statistically significant and confirmed the conceptual model's hypotheses.

1.1 Results

Results of the causality (SEM) analysis suggest that individuals following daily activity routines more frequently, with stronger meal planning habits, alongside food management skills and goal setting self-regulation perceptions, with lower perceived stress are more likely to perform a wider array of flexible meal planning behaviours. Those with higher perceived stress and performing flexible planning behaviours less regularly are more likely to waste more food.

When narrowing down to a specific set of planning behaviours (frequency of meal planning), individuals with stronger habit and nutrition related goals are more likely to plan meals more often. While those who plan meals less regularly, have higher perceptions of unpredictability, and lower perceived self-efficacy are more likely to waste more food.

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

The segmentation (latent class) analysis (LCA) focussed on the same frequency of meal planning behaviours and identified four classes (segments), namely '*confident planners*' with the highest percentage of individuals who always plan meals, whether breakfast, lunch or dinner. '*Striving planners*' as those who plan each meal most of the time, '*attemptive planners*' as those who often or sometimes plan, and '*impulsive*' as those who never or rarely plan meals.

Predictors of class membership included environmental focused goals, which confirmed expectations that individuals with higher environmental goals are more likely to be '*confident planners*' or '*striving planners*' than '*impulsive*' or '*attemptive planners*'. Cultural focused goals (e.g., desires to explore different cuisines) show a mixed effect across the four classes. While confirming expectations that individuals who value having a great experience when cooking or exploring different cuisines are more likely to be '*impulsive*', the results also suggest that cultural goals are not necessarily incompatible with meal planning behaviours, with those who plan being able to apply this in different contexts.

Sociodemographic characteristics (age, socioeconomic group, income) as class membership predictors show that younger individuals are more likely to be '*attemptive planners*', and less likely to be '*striving planners*'. Individuals in higher socioeconomic groups are more likely to be '*confident planners*' and thus more likely to plan meals more often, and individuals in higher income households are more likely to be '*impulsive*' and thus less likely to plan meals more often.

Throughout the early project discussion and evidence review many potential planning behaviours were identified. Planning behaviours not included in the causality and segmentation models (as not selected following Rapid Evidence Assessment and expert opinion) were:

- estimating food demand in advance of shopping;
- including food already in the freezer in the meal plan;
- including leftovers in the meal plan;
- including food that needs using up in the meal plan;
- updating the meal plan after shopping by considering expiry dates and/or product freshness;

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

- considering household activities when meal planning;
- planning meals for the week;
- updating the meal plan based on changes to schedule;
- writing down the meal plan,

Statistical analyses were performed on these behaviours separately from the causality and segmentation models. This found that these behaviours have a statistically significant correlation with each other suggesting that individuals who perform a specific planning behaviour are more likely to perform additional related planning behaviours.

Most of these behaviours however do not significantly correlate with self-assessed food waste, with a few exceptions, namely estimating how much of different foods one will need in advance of shopping and writing down the meal plan somewhere. This supports the general view that self-assessed food waste is more biased than direct measurement, and may also indicate the need for more research on the relationship between food related behaviours and waste.

From the analysis it suggests the following characteristics are present in those who perform planning behaviours more regularly:

- individuals with higher level of education;
- younger, women rather than men;
- in higher socio-economic groups;
- with less people living in the household;
- with younger (0-5 years old) rather than older (over 18 years old) children living in the household.

Individuals more likely to use leftovers more often in the meal plan are those:

- who perceive that including leftovers more often in a meal plan may assist achieving their most important household food goals,
- have stronger food habits,
- have higher perceptions of stress and time pressures,
- stronger food management skills and self regulation.

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

Individuals whose goals are to eat a healthy balanced diet, meet nutritional needs, avoid foodborne illnesses, and minimise waste are more likely to report wasting less food. Those whose goals are to spend as little time as possible in the kitchen, have convenient food, create a social occasion and prepare or offer food to make others feel better are more likely to report wasting more food.

Households with higher levels of food waste are more likely to include more people, are younger, with employment outside of typical shop or office hours who state they spend more on food in an average week.

Self-assessed food waste types are significantly correlated with each other suggesting that individuals who waste a certain type of food are more likely to waste other foods as well.

Limitations of the study include sample size limiting the number of predictors included concurrently in the Latent Class Analysis (LCA) model; and variance explained in the causality models, which reflects an unexhaustive pool of potential influences on meal planning behaviours and suggests the need for further research to identify additional determinants of planning behaviours. The latter, however, also highlights the novelty of the conceptual model, built on the most relevant behavioural frameworks and latest findings from the literature, and the value of testing it in a representative sample of households in Scotland.

The findings suggest what may be the main drivers influencing flexible meal planning behaviours and indicate what behavioural interventions may target to potentially change behaviours and prevent food waste.

2 Aim

The project aimed to determine a typology of food waste reduction behaviours of the Scottish population; improve the understanding of the factors influencing classification into behavioural segments; and identify the behaviours most likely to be targeted by behavioural interventions with the highest impact at individual or societal level.

Following a Rapid Evidence Assessment (REA) exercise and iterative brainstorming involving international experts on food waste behaviours, the scope of this study was refined to a causality and segmentation analysis of food planning behaviours, more specifically with a focus on meal planning.

3 Methodology

The methodological steps are presented in *Figure 1* outlined for accessibility. During the project an iterative approach was taken to ensure information from key stages was used to refine and support additional stages. For example, expert opinion was gathered after the evidence review however, experts also highlighted additional evidence to include.

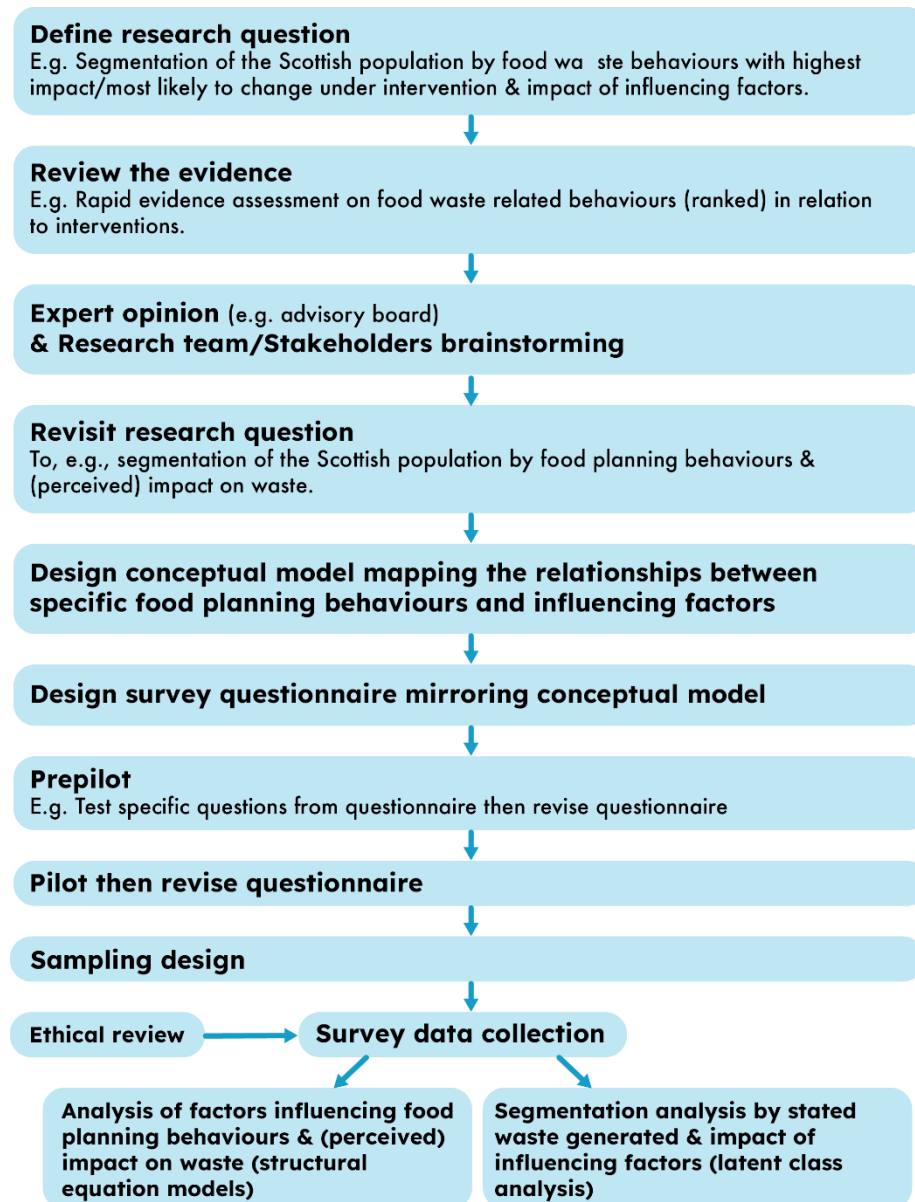


Figure 1. Methodological workflow. [A text alternative for figure 1 is in the Appendix.](#)

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

Each step has its own methodology, where the Rapid Evidence assessment (REA) has been run according to best practice and focused on food waste related behaviours in the household covering interventions, policy and influencing factors, specific to developed countries.

A number of conceptual iterations followed, based primarily on two main behavioural theories, firstly the [COM-B model](#) which stipulates that at any given moment, a specific behaviour occurs only when capability and opportunity to engage in the behaviour exist, and motivation to enact that behaviour is stronger than for any other behaviours; then the [Theoretical Domains Framework \(TDF\)](#), which is an integrative framework developed from a synthesis of psychological theories to help apply approaches to interventions aimed at behaviour change. The key steps in evidence synthesis are presented in Figure 2.

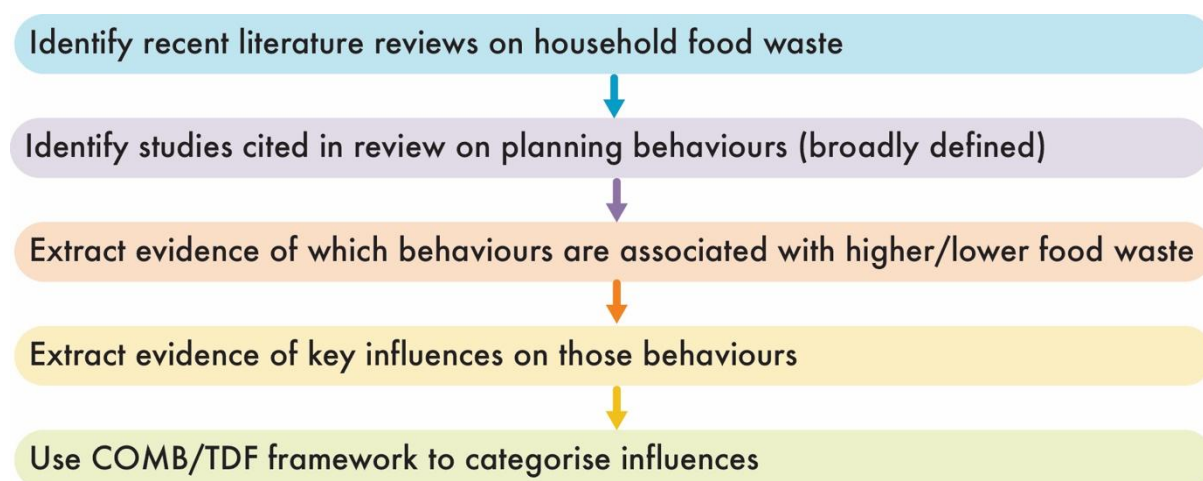


Figure 2. Flow of evidence synthesis. [A text alternative for figure 2 is in the Appendix.](#)

The Rapid Evidence Assessment blended with iterative stages of brainstorming involving experts from outside the research team, resulted in a refining of the original research question to a more specific and thus more manageable focus, i.e. on food planning behaviours. These are among the behaviours most likely to be targeted by behavioural interventions. They are ranked as per the strength of impact on food waste as in Figure 3.

Additional brainstorming iterations further narrowed down these behaviours to those included in the conceptual model presented in Figure 4.

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

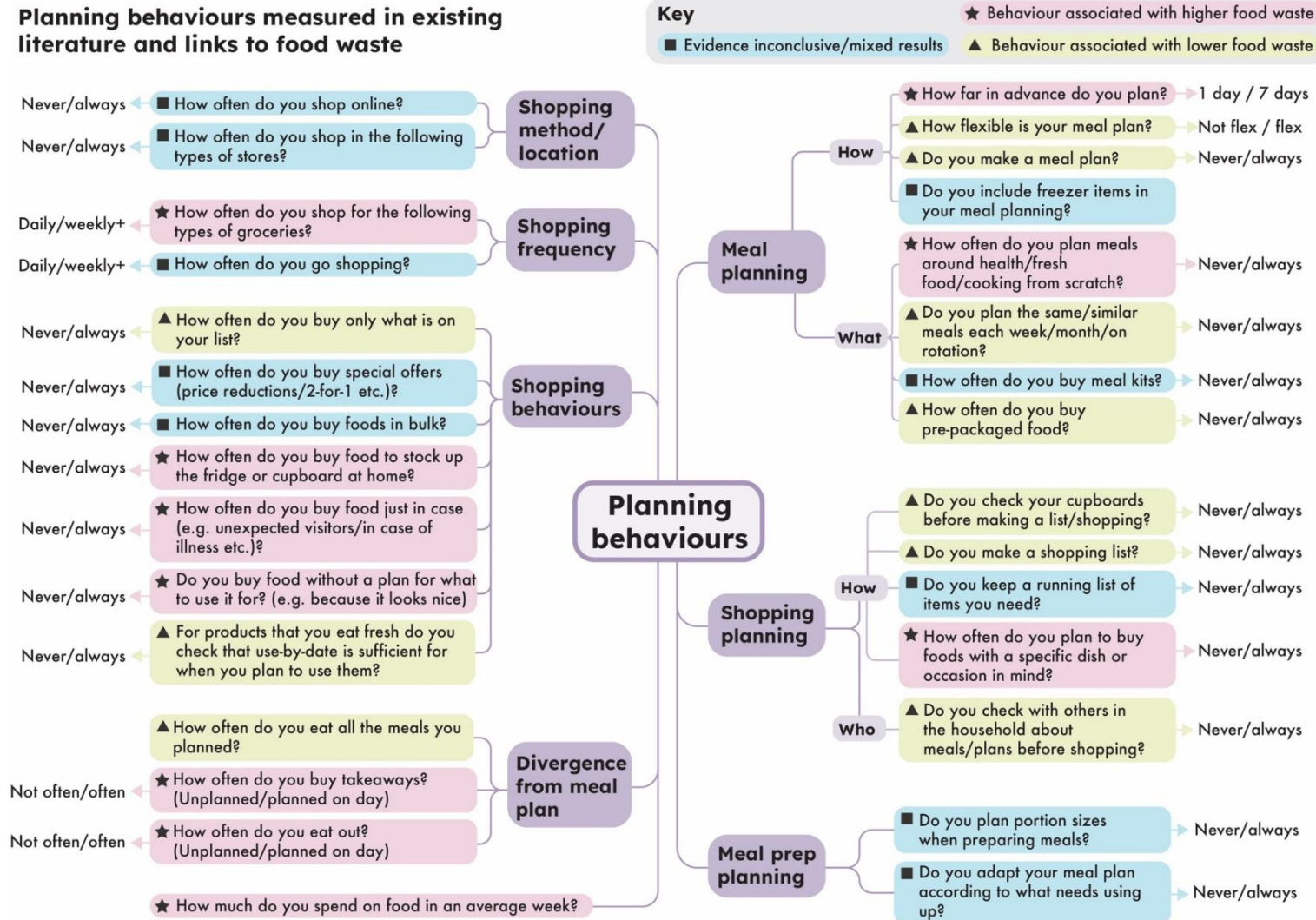
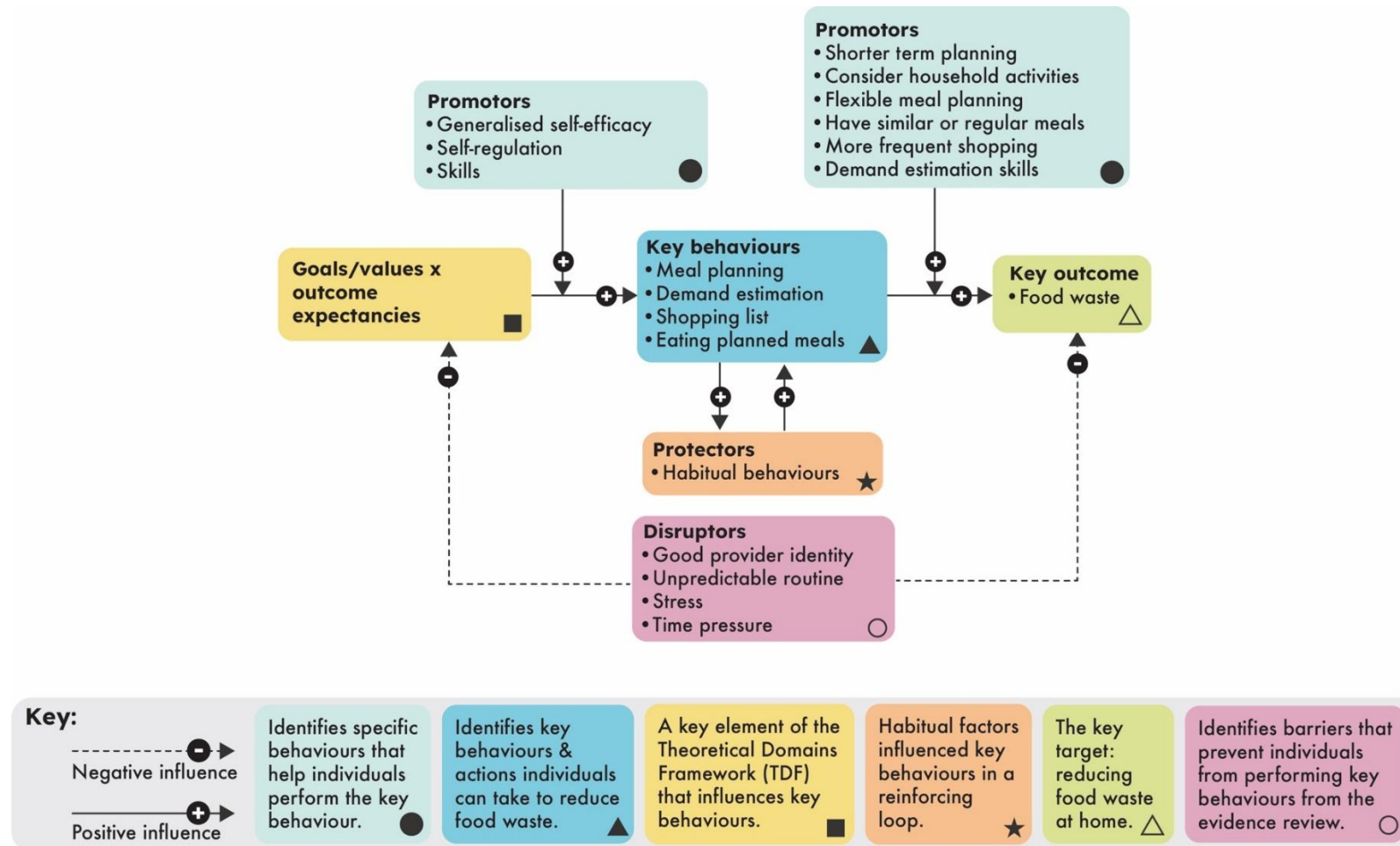


Figure 3. Food planning behaviours and association to food waste. [A text alternative for figure 3 is in the Appendix.](#)

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

Figure 4. Conceptual model. [A text alternative for figure 4 is in the Appendix.](#)

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

Next steps involved translation of the conceptual model into the survey questionnaire (Appendix 1 - Questionnaire). This was achieved through mapping all the elements of the conceptual model into latent variables (multi-dimensional and unobservable and built on/measured by observable variables) and their constituent indicators, where indicators are the questions included in the questionnaire. Additional sociodemographic questions formed the screening pool that defined quotas for the representative survey sample design.

Some questions related to the planning behaviours were further refined in a pre-pilot run informally with consumers (friends/family).

Following ethics approval from SRUC Social Science Ethics Committee, the questionnaire was formatted for online distribution by the marketing company Dynata. Internal ethics checks linked to obtaining participants' informed consent in compliance with GDPR were actioned, additional pilot testing was undertaken followed by the survey being run with Dynatas panel of Scottish respondents. Sample design quotas (representative of the Scottish population) were age, gender, region and socioeconomic group. The survey achieved 1,541 valid completed responses.

Data analysis consisted of:

- structural equation models (SEM) to estimate the effects of causal factors on food planning behaviours and (perceived) impact on food waste;
- latent class analysis (LCA) for segmentation by flexible planning behaviours;

The conceptual model was tested and estimated with a SEM built with the statistical software package LISREL 8.80 (Jöreskog, K.G. & Sörbom, D., Copyright 1970- 2023). SEM is a multivariate technique used to test hypotheses concerning relationships between factors influencing decision-making processes. The use of SEM in this study aims to test the relationships between the latent variables specified in the conceptual model, where the latent constructs are multi-dimensional and unobservable and built on/measured by observable variables. Moreover, it caters to measurement error, increasing estimation accuracy; and most importantly, it allows concurrent estimation of direct and indirect effects, thus explaining a larger proportion of the variance in the target latent variables than other techniques used in causal analysis, e.g., multivariate regression.

Once the effects on planning behaviours and stated waste were assessed, the sample was analysed to identify behavioural typologies – segmentation - using latent class analysis.

Typically, the observed data take the form of a series of categorical responses referred to as manifest variables or items e.g. in this study these are questions about planning behaviours and waste generated.

LCA classifies individuals into classes, which are latent when the classification criterion is based on a latent variable (i.e., a construct that is not directly measurable used to estimate the distribution for each subgroup of the population across the items of interest). The latent class (LC) classification model assigns each observation into a latent class with an estimated probability – the latent class membership - which in turn produces expectations about how that observation will respond on each item. Furthermore, the LC classification model was extended using an LC regression model which allows the inclusion of class-specific explanatory variables/covariates such as goals or sociodemographic characteristics to predict latent class membership. The models were estimated using MPLUS 8.10 (Muthén, L. K., & Muthén, B., Copyright 1998-2023).

4 Results

4.1 Causality analysis – Structural equation model (SEM)

Two models were estimated, namely the 'overall' conceptual model (Figure 4) and a 'specific' causal model focusing on the determinants of specific flexible meal planning behaviours. The overall conceptual model 'nests' a larger set of behaviours and their specific determinants. Here one type of planning behaviour was selected and estimated the corresponding causal and segmentation models. The planning behavioural latent variables included in the models were chosen based on the number of valid responses (e.g., variables based on questions that applied to the whole sample), strength of statistical correlation with the other latent variables included in the models, and statistical reliability of the factors forming the latent variables (how well each behavioural latent variable was defined by its constituent items/observable variables i.e., built on questionnaire items).

Planning behaviours and other variables not included in the causality and segmentation models were analysed using statistical correlation tests, or multivariate statistics such as ordinal regression, and these results are reported in section 4.3 Statistical analysis of other questionnaire items.

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

The overall model explains 56% percent of the variance in the planned eating behaviour (how often individuals eat all the meals from their meal plan when they intended to eat them), 38% of the variance in the shopping list making behaviours and 47% of the variance in the meal planning behaviours (how often individuals plan meals). The model also tests the causal relationship between meal planning behaviours (as well as other influencing factors) and the self-assessed food waste in the household (percentage of purchased food - bread, chicken, potatoes, milk, green vegetables or salad e.g. broccoli or lettuce, fruit - uneaten and thrown away). This shows that 32% of the variance in self-assessed food waste is explained by the direct effect of planning behaviours and the indirect effects of other variables included in the model.

The level of variance explained by the overall model is good, particularly for a model where the target variables, meal planning behaviours, have been the focus of only a small fraction of the existing food waste behavioural literature. This was confirmed by the Rapid Evidence Assessment and the international group of expert advisors i.e., the factors identified to potentially influence these behaviours do not form an exhaustive list as yet, and further research is needed to identify other potential influences.

The study found that all the relationships in the model were meaningful and statistically significant. It showed that three main factors strongly influence how often people plan their meals:

- Routine – People who regularly do things like eating meals at the same time every day tend to plan meals more often.
- Habit – If meal planning feels automatic or natural (like something they do without thinking), they are more likely to plan meals regularly.
- Self-regulation – People who set goals, track their progress, and try to meet personal standards are also more likely to plan their meals.

Habit and food management skills such as:

- ability to plan meals ahead and prepare meals in advance;
- follow recipes when cooking;
- shop with a grocery list/with specific meals in mind;
- plan how much food to buy;
- cook more or double recipes which can be used for another meal;

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

- prepare or cook a meal with only few ingredients on hand/with limited time;
- use leftovers to create another meal;
- ability to make meals from basic store cupboard items;

and perceived stress (feeling upset because of unexpected events/things outside one's control) are the strongest influences on shopping list making behaviours.

Routine, habit, skill and self-regulation have the strongest effects on planned eating behaviour (how often individuals eat all the meals from their meal plan when they intended to eat them).

People who feel more stressed tend to report wasting more food. This has the strongest effect. Another important factor is how well people stick to their meal plans—those who follow their plans more closely waste less food. Additionally, having regular routines and habits around flexible meal planning also helps reduce food waste, though their impact is smaller.

The 'specific' causal model explains 51% percent of the variance in flexible meal planning behaviours (how often individuals plan meals), and 38% of the variance in perceived unpredictability (how often household members have an unpredictable work schedule, unplanned takeaways, unplanned meals out, engage in impromptu social activities). Again, the relationship between flexible meal planning behaviours (and other variables in the model) and self-assessed waste was tested in the model, with 37% of the variance explained. The rationale for the level of variance explained in the 'specific' model is the same as for the 'overall' model in that there was a relatively small literature to build on which looked at these behaviours specifically.

All effects are statistically significant, with time constraints being the only predictor of perceived unpredictability (how often household members have an unpredictable work schedule, unplanned takeaways, unplanned meals out, engage in impromptu social activities).

Habit and nutrition related goals (importance of eating a healthy balanced diet, meeting nutritional needs, accommodating dietary preferences, or avoiding foodborne illnesses as household food goals) are the strongest predictors of frequency of meal planning in the 'specific' model.

Perceived unpredictability, lack of flexible meal planning behaviours, and perceived self-efficacy are the main influences on self-assessed food waste in the 'specific' model.

4.2 Segmentation analysis – Latent Class Analysis (LCA)

The 4-class segmentation model focussed on a set of the specific meal planning behaviours central to this study (how often individuals plan meals - evening meal, lunch, and breakfast).

We label the class with the highest percentage of individuals who always plan meals, whether breakfast, lunch or dinner as 'confident planners', those who plan each meal most of the time as 'striving planners', those who often or sometimes plan as 'attemptive planners' and the individuals who never or rarely plan as 'impulsive planners'.

Proportions for the latent classes based on the estimated model show 20.6% of the individuals with a significant probability of class 1 'striving planners' membership, 23% in class 2 'confident planners', 11% in class 3 'Impulsive' and 45% in class 4 'attemptive planners'.

Then we regressed the latent classes on several explanatory variables and run the models separately and for combinations of variables representing environmental and cultural goals, and socio-demographics (age, socioeconomic group, income).

The impact of environmental focused goals (perceived importance of protecting the environment as a household food goal) confirms expectations that individuals who think that protecting the environment is very to extremely important make a larger part of class 2 'Confident planners' and class 1 'Striving planners' than those with opposite values. The reverse applies to values in relation to membership in class 3 'Impulsive' and class 4 'attemptive'.

As regards the impact of cultural focused goals (importance of having a great experience when cooking and preparing food, and exploring different cuisines as household food goals), individuals who think that having a great experience when cooking and preparing food and respectively, exploring different cuisines, is extremely important make a larger part of class 3 'impulsive'. However, the effect of these cultural goals as predictors for the other classes is less straightforward.

While the goal of having a great experience when cooking and preparing food is not important at all to moderately important to the majority of 'striving planners', this class is more equally distributed across the scale (not important at all to extremely important) in relation to exploring different cuisines as a household goal. While the goal of exploring different cuisines is not important at all to moderately important to the majority of 'attemptive planners', this

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

class is more likely to consider the goal of having a great experience when cooking and preparing food to be moderately to extremely important.

Lastly, the goal of having a great experience when cooking and preparing food has no significant effect on class 2 'confident planners', however these are more likely to consider the goal of exploring different cuisines as moderately to extremely important. These results may suggest that cultural goals are not necessarily incompatible with meal planning behaviours, with those who 'learn' how to plan being able to apply this in different contexts. The impact of sociodemographic covariates (age, socioeconomic group, income) shows that younger individuals are more likely to be part of class 4 'Attemptive planners', and the reverse applies to membership in class 1 'Striving planners'; that individuals in higher socioeconomic groups are more likely to be part of class 2 'Confident planners' and thus more likely to plan meals more often; and that individuals in higher income households are more likely to be part of class 3 'Impulsive' and thus less likely to plan meals more often.

4.3 Statistical analysis of other questionnaire items

Planning behaviours not included in the causality and segmentation models include:

- frequency of estimating how much of different foods one will need in advance of shopping;
- frequency of including food already in the freezer in the meal plan;
- frequency of including cooked leftovers or anticipated leftovers in the meal plan;
- frequency of including food that needs using up in the meal plan;
- frequency of updating the meal plan after shopping by considering expiry dates and / or product freshness;
- frequency of considering household activities when meal planning (e.g. social or work activities);
- frequency of planning on which day of the week each meal will be eaten; frequency of updating the meal plan based on changes to schedule;
- frequency of writing down the meal plan somewhere (e.g. on paper, electronic device, kitchen board).

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

These planning behaviours are significantly correlated with each other suggesting that individuals who perform a specific planning behaviour are more likely to perform additional related planning behaviours.

They are also significantly correlated with key sociodemographic variables, suggesting that individuals with higher level of education, younger, women rather than men, in higher socio-economic groups, with less people living in the household, with younger (0-5 years old) rather than older (over 18 years old) children living in the household are more likely to perform planning behaviours with a higher frequency.

Most of these behaviours *do not* significantly correlate with self-assessed food waste, with a few exceptions (still very low values) namely estimating how much of different foods one will need in advance of shopping and writing down the meal plan somewhere (e.g. on paper, electronic device, kitchen board).

The use of leftovers is significantly correlated with the perceived impact that including cooked leftovers or ingredients that need using up more often in a meal plan would have on achieving one's most important household food goals. People who regularly use leftovers or ingredients that need to be used up tend to believe that doing so helps them reach their most important food-related goals—whether those goals are about eating healthy, saving time, reducing waste, managing stress, or sticking to cultural or social food habits. This behavior is also linked to how automatic the habit is (like doing it without thinking), how stressed or rushed they feel, and how confident they are in managing food and controlling their actions. However, use of leftovers is not correlated with items of disgust sensitivity.

Self-assessed food waste in the household (percentage of purchased food - bread, chicken, potatoes, milk, green vegetables or salad e.g. broccoli or lettuce, fruit - uneaten and thrown away) is significantly correlated with nutrition related goals, time related goals, waste minimising goals, and social goals. This may suggest that individuals whose goals are to eat a healthy balanced diet, meet nutritional needs, avoid foodborne illnesses, and minimise waste are more likely to waste less food, while those whose goals are to spend as little time as possible in the kitchen, have convenient food, create a social occasion and prepare or offer food to make others feel better are more likely to waste more food.

Self-assessed food waste in the household is also significantly correlated with frequency of buying too much food for a planned period.

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

Regarding sociodemographic variables, results may suggest that households with higher levels of self reported food waste are more likely to include more people, be younger, with employment outside of typical shop or office hours who spend more on food in an average week.

Self-assessed food waste types are significantly correlated with each other suggesting that individuals who waste a certain type of food are more likely to waste other foods as well.

Frequencies and statistical descriptives of relevant variables along with other model outputs are available in separate appendices to this document.

Further information and data from the analyses undertaken in this project is available on request.

5 Conclusions

The project aimed to determine a typology of food waste prevention/reduction behaviours of the Scottish population; improve the understanding of the factors influencing the classification into behavioural segments; and identify the behaviours most likely to be targeted by behavioural interventions with the highest impact at individual and/or societal level.

Following a Rapid Evidence Assessment (REA) exercise and iterative brainstorming involving international experts on food waste behaviours, the scope of this study was refined to a causality and segmentation analysis of food planning behaviours, more specifically flexible meal planning.

Results from the statistical analysis undertaken suggest that individuals following routine more frequently, with stronger habit, food management skills and self-regulation perceptions, and lower perceived stress are more likely to perform a wider array of flexible meal planning behaviours. Those with higher perceived stress and performing flexible planning behaviours less regularly are more likely to waste more food.

When narrowing down to a specific set of planning behaviours (frequency of meal planning), individuals with stronger habit and nutrition related goals are more likely to plan meals more often, while those who plan meals less regularly, have higher perceptions of unpredictability, and lower perceived self-efficacy are more likely to waste more food.

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

The segmentation analysis focussed on the same planning behaviours (frequency of meal planning) identified four classes, namely 'confident planners' with the highest percentage of individuals who always plan meals, whether breakfast, lunch or dinner, 'striving planners' as those who plan each meal most of the time, 'attemptive planners' as those who often or sometimes plan, and 'impulsive' as those who never or rarely plan meals.

Predictors of class membership included environmental focused goals, which confirmed expectations that individuals with stronger environmental goals are more likely to be 'confident planners' or 'striving planners' than 'impulsive' or 'attemptive planners'.

Cultural focused goals show a mixed effect across the four classes. While confirming expectations that individuals who value having a great experience when cooking or exploring different cuisines are more likely to be 'impulsive', the results also suggest that cultural goals are not necessarily incompatible with meal planning behaviours, with those who plan being able to apply this in different contexts.

Sociodemographic characteristics (age, socioeconomic group, income) as class membership predictors show that younger individuals are more likely to be 'attemptive planners', and less likely to be 'striving planners'; that individuals in higher socioeconomic groups are more likely to be 'confident planners' and thus more likely to plan meals more often; and that individuals in higher income households are more likely to be 'impulsive' and thus less likely to plan meals more often.

Limitations of the study include sample size limiting the number of predictors included concurrently in the LCA model; and variance explained in the causality models, which reflects an unexhaustive pool of potential influences on meal planning behaviours.

The latter, however, also highlights the novelty of the conceptual model, built on the most relevant behavioural frameworks and latest findings from the literature, and the value of testing it in a representative sample of the Scottish population.

The findings suggest what may be the main drivers influencing flexible meal planning behaviours and indicate what the behavioural interventions may target to potentially change behaviours and prevent household food waste.

6 Appendices

6.1 Appendix 1 - Questionnaire

Information for participants

Thank you for considering participating in this study. The information outlines the purpose of the study and describes your involvement and rights as a participant if you agree to take part.

1. What is the research about?

This questionnaire is part of a research study funded by Zero Waste Scotland and conducted by researchers at Scotland's Rural College and City, University of London. The aim of this study is to understand how Scottish consumers' plan and manage food.

2. Do I have to take part?

It is up to you to decide whether to take part. You do not have to take part if you do not want to. If you choose to participate, you will be asked to agree to an online consent form on the following screen.

3. What will my involvement be?

You will be asked to participate in an online survey about your perceptions and attitudes towards food waste. It should take approximately 20 minutes to complete this survey fully. There are no right or wrong answers; we would like to hear your opinion.

4. How do I withdraw from the study?

You can withdraw from the online survey at any point, without having to give a reason. If any questions in the survey make you feel uncomfortable, you do not have to answer them. Withdrawing from the study will have no effect on you. If you withdraw from the study the information you have given thus far will not be retained.

5. What will my information be used for?

The collected information will be used for a research project to produce a report and an academic paper regarding how Scottish consumers plan and manage food.

6. Will my taking part and my data be kept confidential? Will it be anonymised?

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

The data will be stored in a database if you fill in and submit the survey. This database will be stripped of all potential identifiers and then sent to researchers involved in this study from Scotland's Rural College, City, University of London, and Zero Waste Scotland. The researchers will analyse the anonymous database while respecting your privacy, guaranteeing continued anonymity, and treating all answers confidentially. The researchers only receive and process the information you entered in the online survey. **We will not ask you to reveal any personal data that can identify you.**

For anonymity, please DO NOT include your name, phone number, home/work address, or email address anywhere on this questionnaire.

7. What if I have a question or complaint?

If you have any questions regarding this study, please contact Luiza Toma luiza.toma@sruc.ac.uk

If you are happy to participate in this study, please agree to the consent form on the following screen.

[NEW PAGE]

CONSENT FORM

[SCRIPTER: RESPONDENTS MUST SELECT YES TO ALL ROWS IN ORDER TO CONTINUE, OTHERWISE SCREENOUT]

PARTICIPATION IN THIS RESEARCH STUDY IS VOLUNTARY

Please notice that you will be able to continue in the survey only if you select "Yes" to all the following options:

SA per ROW

	1. YES	2. No
1. I have read and understood the information for participants.	☐	☐
2. I consent voluntarily to participate in this study and understand that I can refuse to answer questions and withdraw from the study at any point, without having to	☐	☐

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

give a reason.		
3. I understand that the information I provide will be used for research publication, and the data will be anonymised.	☐	☐
4. I give permission for the (anonymised) information I provide to be deposited in a data archive to be used for future research.	☐	☐

For information, please contact Luiza Toma luiza.toma@sruc.ac.uk

[NEW PAGE]

Qualification Questions Quotas and Routing

[QUALIFICATION QUESTIONS]

Are you responsible for food shopping and / or cooking in your household?

[Single answer]

1. Fully responsible
2. Partly responsible
3. Not at all [EXCLUDE]

[NEW PAGE]

In the last three months has your household purchased any of the following products?

1. Bread
2. Chicken
3. Potatoes
4. Milk
5. Green vegetables or salad (e.g. broccoli or lettuce)
6. Fruit
99. None of these

[MUST SELECT AT LEAST ONE 1-6]

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[NEW PAGE]

[QUOTA QUESTIONS]

Please tell us your age

[NUMERIC. Min 18 Max 99. Must be over 18 years, terminate if below 18 years old]

Dage:

18-24

25-34

35-44

45-54

55-64

65-99

[NEW PAGE]

How do you describe your gender?

[Single answer]

1. Woman
2. Man
3. Other
4. Prefer not to say

[NEW PAGE]

Region (TBC)

In which region do you live?

[Single answer]

[terminate for code 99]

1. North East Scotland

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2. Highlands & Western Isles
3. South Scotland
4. West Scotland
5. Central Scotland
6. Mid-Scotland & Fife
7. Lothians
8. Glasgow
99. None of these

[NEW PAGE]

Socio Economic Grade (TBC)

Please indicate to which occupational group the Chief Income Earner in your household belongs, or which group fits best.

This could be you: the Chief Income Earner is the person in your household with the largest income.

If the Chief Income Earner is retired and has an occupational pension please answer for their most recent occupation.

If the Chief Income Earner is not in paid employment but has been out of work for less than 6 months, please answer for their most recent occupation.

(SINGLE CODE)

Semi or unskilled manual work (e.g. Manual workers, all apprentices to be skilled trades, Caretaker, Park keeper, non-HGV driver, shop assistant)	1
Skilled manual worker	2

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(e.g. Skilled Bricklayer, Carpenter, Plumber, Painter, Bus/ Ambulance Driver, HGV driver, AA patrolman, pub/bar worker, etc)	
Supervisory or clerical/ junior managerial/ professional/ administrative (e.g. Office worker, Student Doctor, Foreman with 25+ employees, salesperson, etc)	3
Intermediate managerial/ professional/ administrative (e.g. Newly qualified (under 3 years) doctor, Solicitor, Board director small organisation, middle manager in large organisation, principle officer in civil service/local government)	4
Higher managerial/ professional/ administrative (e.g. Established doctor, Solicitor, Board Director in a large organisation (200+ employees, top level civil servant/public service employee))	5
Student	6
Casual worker – not in permanent employment	7
Housewife/ Homemaker	8
Retired and living on state pension	9

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Unemployed or not working due to long-term sickness	10
Full-time carer of other household member	11
Other	12

Dseg

Recode into

1. AB (Q1.6=4,5)
2. C1 (Q1.6=3,6)
3. C2 (Q1.6=2)
4. DE (Q1.6=1, 7-12)

[NEW PAGE]

[ROUTING QUESTIONS]

Which of the following best describes your living situation?

[Multiple answer, code 1 exclusive]

1. I live on my own
2. My partner and I live together without any children
3. I live with my children
4. My partner and I live with our children
5. I live in a shared house / with friends
6. I live with my parent(s)
7. Something else [FREE TEXT]

[If NOT code 1 in Q1.7 [I live on my own] then ask 0]

How many people, including yourself, live in your household?

[Numeric min 1 max 99]

[IF 0 is 3 or 4 (children) indicated in then ask 0]

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What age groups do your children who are still living at home fall into?

Please write in how many children of each age group you have or leave blank if you have no children of that age at home.

1. 0-5
2. 6-12
3. 13-17
4. 18+

[Numeric min 1 max 99 or drop downs listing 1-10 for each category]

[NEW PAGE]

Behaviours

How often do you plan meals in your household?

[SA per Row]

Planning meals means to decide which foods will be eaten in advance of preparing a meal. It covers a spectrum from loose ideas to detailed plans and includes meals out and takeaways.

[Columns]

1. Dinner
2. Lunch
3. Breakfast

[Rows]

1. Never
2. Rarely
3. Sometimes
4. Often
5. A lot of the time
6. Most of the time

[NEW PAGE]

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[If (Never for all meals) {Q2.1_1=1 and Q2.1_2=1 and Q2.1_3=1} skip to question 0 – as Q2.6 to Q2.9 , Skip Section 3(Habits)]

Only show for the meals that are ticked codes 2-6 in Q2.1

How far in advance do you plan meals in your household?

[SA per Row]

Give the answer that is most typical of your household if it varies over time.

[Columns]

1. Dinner
2. Lunch
3. Breakfast

[Rows]

1. More than a week
2. 1 week
3. 5-6 days
4. 3-4 days
5. 1-2 days
6. On the day
7. I don't plan this meal

[NEW PAGE]

How detailed is your meal plan for the following meals?

[SA per Row]

[Columns]

1. Breakfast
2. Lunch
3. Dinner

[Rows]

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1. All parts of this meal are planned.
2. Main items for this meal are planned.
3. Loose ideas for meals.
4. I don't plan for this meal.

[NEW PAGE]

How often do you do the following activities in your household?

[SA per Row]

[Rows - Randomise]

1. Estimate how much of different foods you will need in advance of shopping.
2. Include freezer items in your meal plan.
3. Include cooked leftovers or anticipated leftovers in your meal plan.
4. Include ingredients that needs using up in your meal plan.
5. Update your meal plan after shopping by considering expiry dates and / or product freshness.
6. Consider household activities (yours and / or others) when meal planning (e.g. social or work activities)
7. Plan on which day of the week each meal will be eaten
8. Update meal plan based on changes to schedule.

[Columns]

1. Never
2. Rarely
3. Sometimes
4. Often
5. A lot of the time
6. Most of the time

[NEW PAGE]

How often do you eat all the meals from your meal plan when you intended to eat them?

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[Single Answer]

1. Never
2. Rarely
3. Sometimes
4. Often
5. A lot of the time
6. Most of the time

[NEW PAGE]

[RESPONDENTS WHO DON'T MEAL PLAN REJOIN HERE] / ASK ALL

How often do you do the following activities in your household before shopping?

[SA per Row]

[Rows – Randomise]

1. Check the fridge, freezer and cupboards
2. Keep a running list of items you need
3. Make a shopping list

[Columns]

1. Never
2. Rarely
3. Sometimes
4. Often
5. Most of the time
6. Always

[NEW PAGE]

How often do you do any of the following activities in your household?

[SA per Row]

[Rows – Randomise]

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1. Cook with basic ingredients (fresh, dry, or frozen fruits or vegetables, grains, legumes, meat, fish and milk, salt, spices, and oils)
2. Try new foods or meals
3. Have similar or regular types of meals
4. Use meal kits. (A meal kit is a packaged and pre-portioned set of ingredients with accompanying recipe that you cook at home. Examples of meal kit services include Gousto and Hello Fresh).
5. Shop for food online (either home delivery or click and collect)

Responses

1. Never
2. Rarely
3. Sometimes
4. Often
5. A lot of the time
6. Most of the time

[NEW PAGE]

How often do you shop for food in your household?

Please include any time a member of your household shops for food in your answer (big and top up shops, online and in store).

[Single Answer]

1. Less than once a week
2. Once a week
3. Every 5-6 days
4. Every 3-4 days
5. Every other day
6. Every day

[NEW PAGE]

How often do you find you have bought too much food for the planned period?

[Single Answer]

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1. Never
2. Rarely
3. Sometimes
4. Often
5. A lot of the time
6. Most of the time

[NEW PAGE]

Habits

[IF RESPONDENT ANSWERS NEVER FOR BREAKFAST, LUNCH AND DINNER in 0 THEN
SKIP SECTION 3]

[RANDOMISE ORDER IN WHICH QUESTIONS APPEAR]

Including cooked leftovers or ingredients that need using up in a meal plan is something ...

[Rows – Randomise]

[SA per Row]

1. I do automatically.
2. I do without having to consciously remember.
3. that makes me feel weird if I do not do it.
4. I do without thinking.
5. would require effort not to do it.
6. that belongs to my (daily, weekly, monthly) routine.
7. I start doing before I realize I'm doing it.
8. I would find hard not to do.
9. I have no need to think about doing.
10. that's typically 'me'.
11. I have been doing for a long time.

Responses

1. Strongly Agree
2. Agree

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3. Neither Agree nor Disagree / Neutral
4. Disagree
5. Strongly Disagree

[NEW PAGE]

Planning meals frequently (at least every 3-4 days) is something ...

[Rows – Randomise]

[SA per Row]

1. I do automatically.
2. I do without having to consciously remember.
3. that makes me feel weird if I do not do it.
4. I do without thinking.
5. would require effort not to do it.
6. that belongs to my (daily, weekly, monthly) routine.
7. I start doing before I realize I'm doing it.
8. I would find hard not to do.
9. I have no need to think about doing.
- 10.that's typically 'me'.
- 11.I have been doing for a long time.

Responses

1. Strongly Agree
2. Agree
3. Neither Agree nor Disagree / Neutral
4. Disagree
5. Strongly Disagree

[NEW PAGE]

Making a meal plan is something ...

[SA per Row]

[Rows – Randomise]

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1. I do automatically.
2. I do without having to consciously remember.
3. that makes me feel weird if I do not do it.
4. I do without thinking.
5. would require effort not to do it.
6. that belongs to my (daily, weekly, monthly) routine.
7. I start doing before I realize I'm doing it.
8. I would find hard not to do.
9. I have no need to think about doing.
- 10.that's typically 'me'.
- 11.I have been doing for a long time.

Responses

1. Strongly Agree
2. Agree
3. Neither Agree nor Disagree / Neutral
4. Disagree
5. Strongly Disagree

[NEW PAGE]

BLOCK A

[RANDOMISE WHETHER BLOCK A OR BLOCK B ARE SHOWN FIRST]

[RANDOMISE ORDER IN WHICH QUESTIONS APPEAR IN BLOCK A]

How would you rate your skills at the following food management tasks?

[SA per Row]

[Rows – Randomise]

1. Plan meals ahead
2. Prepare meals in advance
3. Follow recipes when cooking

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4. Shop with a grocery list
5. Shop with specific meals in mind
6. Plan how much food to buy
7. Cook more or double recipes which can be used for another meal
8. Prepare or cook a meal with only few ingredients on hand
9. Prepare or cook a meal with limited time
10. Use leftovers to create another meal
11. Able to make meals from basic store cupboard items?

Responses

1. Not skilled at all
2. Slightly skilled
3. Moderately skilled
4. Very skilled
5. Extremely skilled

[NEW PAGE]

In the last month how often have you...

[SA per Row]

[Rows – Randomise]

1. Been upset because of something that happened unexpectedly?
2. Felt that you were unable to control the important things in your life?
3. Felt nervous and "stressed"?
4. Felt confident about your ability to handle your personal problems?
5. Felt that things were going your way?
6. Found that you could not cope with all the things that you had to do?
7. Been able to control irritations in your life?
8. Felt that you were on top of things?

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9. Been angered because of things that were outside your control?
10. Felt difficulties were piling up so high that you could not overcome them?

Responses

1. Never
2. Almost Never
3. Sometimes
4. Fairly Often
5. Very Often

[NEW PAGE]

To what extent to you agree or disagree with the following statements?

[SA per Row]

[Rows – Randomise]

1. I usually keep track of my progress toward my goals.
2. I can accomplish goals I set for myself.
3. I have personal standards and try to live up to them.
4. As soon as I see a problem or challenge, I start looking for all possible solutions.
5. I have a hard time setting goals for myself.
6. When I'm trying to change something, I pay a lot of attention to how I'm doing.
7. I have trouble making plans to help me reach my goals.
8. I set goals for myself and keep track of my progress.
9. If I make a resolution to change something, I pay a lot of attention to how I'm doing.
10. I know how I want to be.

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Responses

1. Strongly Disagree.
2. Disagree
3. Neither Agree nor Disagree / Neutral
4. Agree
5. Strongly Agree.

[NEW PAGE]

To what extent to you disagree or agree with the following statements?

[SA per Row]

[Rows – Randomise]

1. I can always manage to solve difficult problems if I try hard enough.
2. If someone opposes me, I can find the means and ways to get what I want.
3. It is easy for me to stick to my aims and accomplish my goals.
4. I am confident that I could deal efficiently with unexpected events.
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.
6. I can solve most problems if I invest the necessary effort.
7. I can remain calm when facing difficulties because I can rely on my coping abilities.
8. When I am confronted with a problem, I can usually find several solutions.
9. If I am in trouble, I can usually think of a solution.
10. I can usually handle whatever comes my way.

Responses

1. Strongly Agree
2. Agree
3. Neither Agree nor Disagree / Neutral
4. Disagree
5. Strongly Disagree

To what extent do you agree or disagree with the following statements?

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[SA per Row]

[Rows – Randomise]

1. It would be embarrassing to me if my guests ate all the food I had prepared for them. They would probably have liked to eat more.
2. I like to provide a large variety of foods at shared mealtimes so that everyone can have something he or she likes.
3. I always have products available to be prepared for unexpected guests or events (e.g., illness).
4. When I am expecting guests, I like to buy more food than is necessary.

Responses

1. Strongly Agree
2. Agree
3. Neither Agree nor Disagree / Neutral
4. Disagree
5. Strongly Disagree

[NEW PAGE]

How disgusting do you think the following would be?

Please answer intuitively, there are no right or wrong answers.

[SA per Row]

[Rows – Randomise]

1. Putting animal cartilage into my mouth
2. Eating with dirty cutlery in a restaurant
3. Eating food given to me by a neighbour whom I barely know
4. Eating hard cheese with mould cut off
5. Eating apple slices that turned brown when exposed to the air
6. The texture of some kinds of fish in the mouth
7. Eating brown-coloured avocado pulp
8. Eating a salad after I found a little snail in it

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9. Eating a bruised banana

Responses

1. Not disgusting at all
2. Slightly disgusting
3. Moderately disgusting
4. Very disgusting
5. Extremely disgusting

[NEW PAGE]

How often do you and / or members of your household:

[SA per Row]

[Rows – Randomise]

1. Have an unpredictable work schedule
2. Have unplanned takeaways
3. Have unplanned meals out
4. Engage in impromptu social activities

Responses

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

[NEW PAGE]

[ONLY ASK 4.8 IF Question 1.7 indicates CHILDREN IN HOUSEHOLD]

To what extent do you agree with the following statements about your child or children's current eating habits?

If you have more than one child, consider their behaviour on average in your response.

[SA per Row]

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[Rows – Randomise]

1. My child enjoys tasting new foods
2. My child enjoys a wide variety of foods
3. My child is interested in tasting food s/he hasn't tasted before
4. My child refuses new foods at first
5. My child decides that s/he doesn't like food, even without tasting it
6. My child is difficult to please with meals
7. My children do not like the same foods or meals
8. I provide my children with different meals or parts of a meal at times
9. My children have differing meal requirements and preferences
10. I do not always know what my child/children may eat on a particular day of the week

Responses

1. Strongly Disagree
2. Disagree
3. Neither Agree nor Disagree / Neutral
4. Agree
5. Strongly Agree

[NEW PAGE]

To what extent do you feel financially constrained with regards to your food budget?

[Single Answer]

Responses

1. Not at all
2. A little
3. Somewhat
4. Quite
5. Very much

[NEW PAGE]

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How busy are you during an average day?

[Single Answer]

Responses

1. Not busy at all
2. Rarely busy
3. Somewhat busy
4. Very busy
5. Extremely busy.

[Randomise 4.10a, 4.10b, 4.10c, 4.10d, 4.10e, 4.10e]

4.10a. How often do you have too many things to do each day to get them all done?

[Single Answer]

4.10b. How often do you find yourself rushing from place to place trying to get to appointments or to get things done?

[Single Answer]

4.10c. How often are you so busy that you miss scheduled breaks or rest periods?

[Single Answer]

4.10d. How often are you so busy that you miss your regular mealtimes?

[Single Answer]

4.10e. How often do you rush out of the house in the mornings to get to where you need to be?

[Single Answer]

4.10f. How often do you have so many things to do that you go to bed later than your regular bedtime?

[Single Answer]

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1. Never
2. Rarely
3. Sometimes
4. Often
5. Very often.

[Randomise 4.10g, 4.10h, 4.10i, 4.10j]

4.10g. How often do your days follow a basic routine?

[Single Answer]

4.10h. How often do you get up and go to bed at about the same time?

[Single Answer]

4.10i. How often do you eat all your meals at the same time each day and night?

[Single Answer]

4.10j. How often do you engage in activities at home at a specific time (i.e., read the paper after work, watch a particular television show, children, hobbies, etc.)?

[Single Answer]

1. Never
2. Rarely
3. Sometimes
4. Often
5. Very often.

BLOCK B

[THE QUESTIONS IN THIS BLOCK NEED TO BE ASKED IN THIS ORDER AND NOT RANDOMISED]

How important are the following household food goals to you?

[SA per ROW]

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[Rows – Randomise]

Nutritional/Health Goals

1. Eating a healthy balanced diet
2. Meeting nutritional needs
3. Accommodating dietary preferences
4. Avoiding foodborne illnesses

Time Efficiency

5. Spending as little time as possible in the kitchen
6. Having food that is quick and easy to prepare.
7. Having convenient food.
8. Simplifying cooking and mealtimes

Food Security / Budget

9. Having enough food
10. Ensuring cost of food fits household budget
11. Being frugal and thrifty in food choices

Outward Looking

12. Protecting the environment
13. Supporting social causes e.g. fair trade
14. Minimising food waste

Social / Cultural

15. Sharing food with friends and family
16. Creating a social occasion
17. Preparing or offering food to make others feel better

Culinary enjoyment

18. Having a great experience when cooking and preparing food.
19. Enjoying eating food

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20. Exploring different cuisines

Responses

1. Not important at all
2. Slightly Important
3. Moderately important
4. Very important
5. Extremely important

[NEW PAGE]

In the previous question these were your top-ranking goals. Please indicate which is the most important to you and which is the least important to you.

[SCRIPTER – SHOW TOP RANKING GOALS FROM PREVIOUS QUESTION. CAN BE EITHER AS STATEMENTS TO REARRANGE OR RADIO BUTTONS FOR MOST IMPORTANT AND LEAST IMPORTANT]

[Highest scoring goals will be ranked]

[NEW PAGE]

[NEW PAGE]

What impact do you think including cooked leftovers or ingredients that need using up more often in a meal plan would have on achieving your most important household food goal?

If you already always include cooked leftovers or ingredients that need using up in your meal plan, consider whether doing this helps or hinders you in achieving your most important household food goal. If you do not currently plan meals, consider how creating a meal plan with these elements is likely to help or you in achieving your most important household food goal.

[SA per ROW]

Rows

- [Prepopulated goal – insert answers from 5.2?]

Columns - Responses

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1. Large positive impact.
2. Small positive impact.
3. Neutral - no impact
4. Small negative impact.
5. Large negative impact

[NEW PAGE]

What impact do you think that planning meals more frequently would have on achieving your most important household food goal?

If you already plan very frequently (at least every 3-4 days), consider whether doing this helps you to achieve your household food goals. If you do not currently plan meals, consider how creating a frequent meal plan is likely to help or you in achieving your most important household food goal.

[SA per ROW]

Rows

- [Prepopulated goal]

Columns - Responses

1. Large positive impact.
2. Small positive impact.
3. Neutral - no impact
4. Small negative impact.
5. Large negative impact

[NEW PAGE]

What impact do you think that making a meal plan more often would have on achieving your most important household food goal?

If you always make a meal plan, consider whether doing this helps you to achieve your household food goal.

[SA per ROW]

Rows

Citizen Food Waste Behaviours: Technical Report on Meal Planning Segmentation

- [Prepopulated goal]

Columns - Responses

1. Large positive impact.
2. Small positive impact.
3. Neutral - no impact
4. Small negative impact.
5. Large negative impact

[NEW PAGE]

Food Waste – Self Report

Thinking about the last time you bought the following foods, approximately what percentage of the amount you purchased ended up being uneaten and thrown away (whether to a compost bin, ordinary bin, council food waste collection, or down the sink)?

Slider type question

1. Bread
2. Chicken
3. Potatoes
4. Milk
5. Green vegetables or salad (e.g. broccoli or lettuce)
6. Fruit

Response

Slider ranging from 0 to 100% for each of those four food categories where 0 represents 'None of the food was wasted (was all used up and eaten)' and 100 represents 'The whole amount was wasted (uneaten and thrown away)'. Offer do not purchase option to account for dietary preferences.

[NEW PAGE]

FOOD WASTE FOLLOW UP

Which of the following words best describe how you feel about wasting food in your home?

[SA]

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1. Frustrated
2. Anxious
3. Guilty
4. Content
5. Relaxed

[NEW PAGE]

Additional Socio Demographics

What is the highest level of education you have achieved?

[SA]

1. Incomplete Secondary Education (Below GCSE / O Level)
2. Secondary Education (0 Grade, Standard Grade, Access 3 Cluster, Intermediate 1 or 2, GCSE, CSE, Senior Certification, O Level)
3. Higher Secondary Education (e.g., SCE Higher Grade, Higher, Advanced Higher, CSYS, A Level, AS Level, Advanced Senior Certificate)
4. Vocational or Technical Qualifications (e.g., GSVQ Advanced, SVQ level 3, ONC, OND, SCOTVEC National Diploma, City and Guilds Advanced Craft)
5. Post-school Vocational or Technical Qualifications (e.g., HND, NVQ, HNC, HND, SVQ level 4)
6. University Degree or equivalent (e.g., BA, BSc, SVQ level 5)
7. Postgraduate Degree or equivalent (e.g., MA, MSc)
8. Doctorate or equivalent (PhD)
9. Prefer not to answer

[NEW PAGE]

What is your current employment status?

[SA]

1. Employed full time.
2. Employed part time
3. Self Employed
4. Retired

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5. Stay-at-home parent or carer
6. Student
7. Unemployed
8. Other

[NEW PAGE]

Which of the categories below best describes your household's annual income?

Please select the option that best describes your annual HOUSEHOLD income before taxes/deductions.

[SA]

1. Up to £5,199
2. £5,200 - £10,399
3. £10,400 - £15,599
4. £15,600 - £20,799
5. £20,800 - £25,999
6. £26,000 - £31,199
7. £31,200 - £41,599
8. £41,600 - £51,999
9. £52,000 - £74,999
10. £75,000 - £99,999
11. £100,000 - £124,999
12. £125,000 or more
13. Prefer not to say

[NEW PAGE]

How many people in your household do paid shift work i.e. have employment outside of typical shop or office hours

[Numeric, range 0-10]

[NEW PAGE]

Please estimate how much you spend on food shopping in an average week

[Numeric, range 0-99]

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[NEW PAGE]

Local Authority

[DROPDOWN]

Can you tell us your council area / local authority. This is where you pay your council tax to?

1. Aberdeen City
2. Aberdeenshire
3. Angus
4. Argyll and Bute
5. City of Edinburgh
6. Clackmannanshire
7. Dumfries and Galloway
8. Dundee City
9. East Ayrshire
10. East Dunbartonshire
11. East Lothian
12. East Renfrewshire
13. Falkirk
14. Fife
15. Glasgow City
16. Highland
17. Inverclyde
18. Midlothian
19. Moray
20. Na h-Eileanan Siar (Western Isles)
21. North Ayrshire
22. North Lanarkshire
23. Orkney Islands
24. Perth and Kinross
25. Renfrewshire
26. Scottish Borders
27. Shetland Islands
28. South Ayrshire

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- 29. South Lanarkshire
- 30. Stirling
- 31. West Dunbartonshire
- 32. West Lothian
- 33. Do not live in Scotland

[NEW PAGE]

Which of the following best describes where you live?

[SA]

- 1. Urban (population over 10,000)
- 2. Town and fringe
- 3. Village
- 4. Hamlet or Isolated location

[NEW PAGE]

What type of accommodation do you live in?

[SA]

- 1. Detached house
- 2. Semi-detached house
- 3. Terraced house
- 4. Tenement
- 5. Flat – purpose-built block
- 6. Flat – in a converted house or above a shop
- 7. Bungalow
- 8. Other

[END]

6.2 Appendix 2 – Alternative text summaries

Text alternative for figure 1: Methodological workflow on page 7

1. Define research question E.g. Segmentation of the Scottish population by food waste behaviours with highest impact/most likely to change under intervention & impact of influencing factors.
2. Review the evidence E.g. Rapid evidence assessment on food waste related behaviours (ranked) in relation to interventions.
3. Expert opinion (e.g. advisory board) & Research team/Stakeholders brainstorming
4. Revisit research question to, e.g., segmentation of the Scottish population by food planning behaviours & (perceived) impact on waste.
5. Design conceptual model mapping the relationships between specific food planning behaviours and influencing factors
6. Design survey questionnaire mirroring conceptual model
7. Prepilot E.g. Test specific questions from questionnaire then revise questionnaire
8. Pilot then revise questionnaire
9. Sampling design
10. Ethical review
11. Survey data collection
12. Analysis of factors influencing food planning behaviours & (perceived) impact on waste (structural equation models)
13. Segmentation analysis by stated waste generated & impact of influencing factors (latent class analysis)

Text alternative for figure 2: Flow of evidence synthesis on page 8

1. Identify recent literature reviews on household food waste
2. Identify studies cited in review on planning behaviours (broadly defined)
3. Extract evidence of which behaviours are associated with higher/lower food waste
4. Extract evidence of key influences on those behaviours
5. Use COMB/TDF framework to categorise influences

Text alternative for figure 3: Food planning behaviours and association to food waste on page 9

Planning behaviours measured in existing literature and links to food waste

Meal planning

How

- How far in advance do you plan? 1 day / 7 days [Behaviour associated with higher food waste]
- How flexible is your meal plan? Not flex / flex [Behaviour associated with lower food waste]

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- Do you make a meal plan? Never/always [Behaviour associated with lower food waste]
- Do you include freezer items in your meal planning? [Evidence inconclusive/mixed results]

What

- How often do you plan meals around health/fresh food/cooking from scratch? Never/always [Behaviour associated with higher food waste]
- Do you plan the same/similar meals each week/month/on rotation? Never/always [Behaviour associated with lower food waste]
- How often do you buy meal kits? Never/always [Evidence inconclusive/mixed results]
- How often do you buy pre-packaged food? Never/always [Behaviour associated with lower food waste]

Shopping planning

How

- Do you check your cupboards before making a list/shopping? Never/always [Behaviour associated with lower food waste]
- Do you make a shopping list? Never/always [Behaviour associated with lower food waste]
- Do you keep a running list of items you need? Never/always [Evidence inconclusive/mixed results]
- How often do you plan to buy foods with a specific dish or occasion in mind? Never/always [Behaviour associated with higher food waste]

Who

- Do you check with others in the household about meals/plans before shopping? Never/always [Behaviour associated with lower food waste]

Meal prep planning

- Do you plan portion sizes when preparing meals? Never/always [Evidence inconclusive/mixed results]
- Do you adapt your meal plan according to what needs using up? Never/always [Evidence inconclusive/mixed results]

Shopping method/ location

- How often do you shop online? Never/always [Evidence inconclusive/mixed results]
- How often do you shop in the following types of stores? Never/always [Evidence inconclusive/mixed results]

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Shopping frequency

How often do you shop for the following types of groceries? Daily/weekly+ [Behaviour associated with higher food waste]

How often do you go shopping? Daily/weekly+ [Evidence inconclusive/mixed results]

Shopping behaviours

- How often do you buy only what is on your list? Never/always [Behaviour associated with lower food waste]
- How often do you buy special offers (price reductions/2-for-1 etc.)? Never/always [Evidence inconclusive/mixed results]
- How often do you buy foods in bulk? Never/always [Evidence inconclusive/mixed results]
- How often do you buy food to stock up the fridge or cupboard at home? Never/always [Behaviour associated with higher food waste]
- How often do you buy food just in case (e.g. unexpected visitors/in case of illness etc.)? Never/always [Behaviour associated with higher food waste]
- Do you buy food without a plan for what to use it for? (e.g. because it looks nice) Never/always [Behaviour associated with higher food waste]
- For products that you eat fresh do you check that use-by-date is sufficient for when you plan to use them? Never/always [Behaviour associated with lower food waste]

Divergence from meal plan

- How often do you eat all the meals you planned? Not often/often [Behaviour associated with lower food waste]
- How often do you buy takeaways? (Unplanned/planned on day) Not often/often [Behaviour associated with higher food waste]
- How often do you eat out? (Unplanned/planned on day) Not often/often [Behaviour associated with higher food waste]
- How much do you spend on food in an average week? [Behaviour associated with higher food waste]

Text alternative for figure 4: Conceptual model on page 10

Title: A Flowchart of Factors Influencing Food Waste Reduction at Home

Main Components in the flowchart are:

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Promoters these are positive influences on key behaviour and this box has a black circle symbol:

- Top Left: Generalised self-efficacy, self-regulation, skills
- Top Right: Shorter-term planning, considering household activities, flexible meal planning, having similar or regular meals, more frequent shopping, demand estimation skills

Goals/Values x Outcome Expectancies in a Yellow box with a black square.

These influence key behaviors related to food waste.

Key Behaviours listed in a Blue box with a black triangle:

- Meal planning
- Demand estimation
- Using a shopping list
- Eating planned meals

These can influence Protectors

Protectors in an Orange box with a black star:

- Habitual behaviours that support food waste reduction and Key Outcome in a Green box with triangle with black outline:
- food waste

Disruptors in a Pink box with circle with black outline.

- Good provider identity
- Unpredictable routine
- Stress
- Time pressure
- These can negatively impact the Key outcome and goals/values and outcome expectations.

Legend showing symbols used in the flowchart:

- Dashed arrow with circle: Negative influence
- Solid arrow with circle: Positive influence
- Black circle: Specific behaviours that support key behaviours
- Black square: Key behaviours/actions to reduce food waste

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- Black triangle: Theoretical Domains Framework (TDF) element influencing behaviour
- Black star: Habitual factors reinforcing key behaviours
- Triangle with black outline: Main goal—reducing food waste
- Circle with black outline: Barriers to key behaviour

