

HALVING HOUSEHOLD FOOD WASTE

WHICH BEHAVIOURS MATTER?







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Australian household food waste reduction behaviours - impact survey

Start of Block: Intro

Welcome and introduction

Thank you for filling out this survey. We are interested in your expert opinion on the *impact* of different household food waste behaviours.

In April 2020, OzHarvest and BehaviourWorks Australia hosted workshops with food waste experts to develop a 'long-list' of householder behaviours that reduce household food waste.

This survey aims to prioritise these behaviours by scoring their potential impact at an individual household level. The results contribute to a research project that will enable OzHarvest to target key behaviours as part of its national Fight Food Waste campaign.

The survey is anonymous and will take about 15 minutes for you to complete. By completing and submitting the survey you are consenting for the use of the data in this research and for future comparative purposes. Once you have completed the survey, you will not be able to withdraw your data. **NB:** For further information about this research project, please review the Explanatory Statement that can be found here.

End of Block: Intro

Start of Block: Demographics

Section A: Some background information about you...

Q1 Did you participate in one of the behaviour identification workshops hosted by Ozharvest and BehaviourWorks Australia in April 2020?

Q2 If you are based in Australia, which state or territory are you currently located in? (If you are not Australian based, please choose "other" and enter your country)

Q3 Which of the following describes your main area of professional expertise? (You can select more than one option)

Q4 Which sector do you work in? (You can select more than one option)

Q5 What is your current work role?____

Q6 How long have you been in your current organisation? (years)

Thank you! Let's move onto scoring different household food waste behaviours based on their impact.
Page Break



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Some context to help you complete the remainder of the survey

This survey aims to prioritise a list of householder behaviours by scoring their potential impact in reducing food waste at a household level. We are seeking your informed opinion on the potential impact of different behaviours. We acknowledge that estimating impact can be challenging. You are encouraged to draw on your own knowledge, experience and available evidence in making estimates. Ultimately a 'correct' answer is your honest, informed opinion about the potential contribution of each behaviour. To help 'anchor' your estimates, we have included a useful benchmark developed for the Australian National Food Waste Strategy. The 2019 National Food Waste Baseline calculated that 2.3 million tonnes of household food waste currently goes to landfill each year. *This equates to around 94 kg of household food waste per capita per year.* We are therefore asking you to estimate the contribution that each behaviour could make towards reducing the current Australian household food waste footprint of 94 kg per person. For this survey, food waste is defined as edible food, or parts of food, that is thrown away uneaten. It does not include items generally considered inedible (such as seeds, bones, coffee grounds, skins, or peels).

End of Block: Demographics

Start of Block: Planning meals/shopping

Section B: Planning meals or planning shopping ...

In the following section, we will ask you to estimate the household food waste reduction potential *of behaviours to do with planning meals or planning shopping*. Please imagine what the impact would be if individuals were to perform that behaviour whenever possible. All questions follow the same format: you are asked to estimate the *(i) highest* and *(ii) the lowest* plausible contribution (out of 10) of that behaviour to reducing household food waste, and to then *(iii) make your final best guess*. Why are there three questions for each behaviour? Prior research suggests that first asking experts to give highest and lowest estimates helps them to make a more carefully considered final estimate.

End of Block: Planning meals/shopping

Start of Block: Household meal plan

Q7 What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Every three to four days, a household meal plan* was made?

(* making a meal plan should involve other household members and include using up leftovers and uneaten perishables, as well as possible take-away/eating out meals)

Q7a Realistically, what do you think is the LOWEST plausible contribution?
1-10 scale
Q7b Realistically, what do you think is the HIGHEST plausible contribution?
1-10 scale
Q7c Realistically, what is your BEST GUESS?
1-10 scale

End of Block: Household meal plan

Start of Block: Shopping list



Q9

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Before going food shopping, a shopping list* was made?

(*making a shopping list should involve other household members and should be based on meal plans)

Q199 Realistically, what do you think is the LOWEST plausible contribution? Q200 Realistically, what do you think is the HIGHEST plausible contribution? Q201 Realistically, what is your BEST GUESS?

End of Block: Shopping list

Start of Block: Before making shopping list

Q245

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Before making a shopping list, it is checked what food is in the household pantry, fridge and freezer?

Q203 Realistically, what do you think is the LOWEST plausible contribution? Q204 Realistically, what do you think is the HIGHEST plausible contribution? Q205 Realistically, what is your BEST GUESS?

End of Block: Before making shopping list

Start of Block: Meal before shopping

Q11

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Before going food shopping, a meal or snack is eaten (if hungry)?

Q207 Realistically, what do you think is the LOWEST plausible contribution? Q208 Realistically, what do you think is the HIGHEST plausible contribution? Q209 Realistically, what is your BEST GUESS?

End of Block: Meal before shopping

Start of Block: Comments or additional knowledge Q12

Q12 Please enter any comments, additional knowledge or justification that you have about your estimates and/or these meal planning or shopping planning behaviours



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End of Block: Comments or additional knowledge Q12

Start of Block: Shopping

Section C: When shopping ...

In the following section, we will ask you to estimate the household food waste reduction potential *of behaviours to do with food shopping*. Please imagine what the impact would be if individuals were to perform that behaviour whenever possible.

All questions follow the same format: you are asked to estimate the *(i) highest* and *(ii) the lowest* plausible contribution (out of 10) of that behaviour to reducing household food waste, and to then *(iii) make your final best guess*.

End of Block: Shopping

Start of Block: Speciality stores

Q13

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

When shopping, food is bought from local specialty stores (green grocers, butchers) and markets in preference to large supermarkets?

Q210 Realistically, what do you think is the LOWEST plausible contribution? Q211 Realistically, what do you think is the HIGHEST plausible contribution? Q212 Realistically, what is your BEST GUESS?

End of Block: Speciality stores

Start of Block: Online delivery

Q14

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Food is bought through online ordering and delivery services?

Q213 Realistically, what do you think is the LOWEST plausible contribution? Q214 Realistically, what do you think is the HIGHEST plausible contribution? Q215 Realistically, what is your BEST GUESS?

End of Block: Online delivery

Start of Block: Meal kit

Q15

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:



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A meal-kit or recipe box service was subscribed to?

Q216 Realistically, what do you think is the LOWEST plausible contribution? Q217 Realistically, what do you think is the HIGHEST plausible contribution? Q218 Realistically, what is your BEST GUESS?

End of Block: Meal kit

Start of Block: One big shop

Q16

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

A shop for non-perishable food happened every 1-2 weeks?

Q223 Realistically, what do you think is the LOWEST plausible contribution? Q224 Realistically, what do you think is the HIGHEST plausible contribution? Q225 Realistically, what is your BEST GUESS?

End of Block: One big shop

Start of Block: Perishable food as needed

Q17

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Perishable food was shopped for when household stocks run out?

Q226 Realistically, what do you think is the LOWEST plausible contribution?

Q227 Realistically, what do you think is the HIGHEST plausible contribution? Q228 Realistically, what is your BEST GUESS?

End of Block: Perishable food as needed

Start of Block: Purchase from shopping list

Q18

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

When shopping, only food that was included in the shopping list was bought?

Q229 Realistically, what do you think is the LOWEST plausible contribution?

Q230 Realistically, what do you think is the HIGHEST plausible contribution?

Q231 Realistically, what is your BEST GUESS?



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Start of Block: Close to date foods

Q20

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

When shopping, discounted, close-to-date, perishable food was only purchased if there was a plan to use it immediately?

Q233 Realistically, what do you think is the LOWEST plausible contribution? Q234 Realistically, what do you think is the HIGHEST plausible contribution? Q235 Realistically, what is your BEST GUESS?

End of Block: Close to date foods

Start of Block: Multi-packs and bulk

Q21

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

When shopping, bulk amounts or large quantity special offers were only bought for non-perishable food items?

Q237 Realistically, what do you think is the LOWEST plausible contribution? Q238 Realistically, what do you think is the HIGHEST plausible contribution? Q239 Realistically, what is your BEST GUESS?

End of Block: Multi-packs and bulk

Start of Block: Frozen veg

Q22

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

When shopping, frozen vegetables options were bought instead of fresh ones?

Q240 Realistically, what do you think is the LOWEST plausible contribution? Q241 Realistically, what do you think is the HIGHEST plausible contribution? Q243 Realistically, what is your BEST GUESS?

End of Block: Frozen veg

Start of Block: Pre-portions



Q23

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

When shopping, food was bought in pre-proportioned options?

Q244 Realistically, what do you think is the LOWEST plausible contribution? Q245 Realistically, what do you think is the HIGHEST plausible contribution? Q246 Realistically, what is your BEST GUESS?

End of Block: Pre-portions

Start of Block: Read packet info

Q24

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

When shopping, before deciding to buy food, packet information* was read?

(*this included use-by-date, portion size and storage guidance)

Q248 Realistically, what do you think is the LOWEST plausible contribution? Q249 Realistically, what do you think is the HIGHEST plausible contribution? Q250 Realistically, what is your BEST GUESS?

End of Block: Read packet info

Start of Block: Comments or add knowledge q25

Q236 Please enter any comments, additional knowledge or justification that you have about your estimates and/or these food shopping behaviours

End of Block: Comments or add knowledge q25

Start of Block: Storing and keeping

Section D: When storing and keeping food at home ...

In the following section, we will ask you to estimate the household food waste reduction potential *of behaviours to do with storing and keeping food at home.* Please imagine what the impact would be if individuals were to perform that behaviour whenever possible.

All questions follow the same format: you are asked to estimate the *(i) highest* and *(ii) the lowest* plausible contribution (out of 10) of that behaviour to reducing household food waste, and to then *(iii) make your final best guess*.



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Start of Block: Fridge temp

Q26

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

The household refrigerator was kept at temperatures between 1 - 3 degrees C and the freezer was kept below 18 degrees C?

Q251 Realistically, what do you think is the LOWEST plausible contribution? Q252 Realistically, what do you think is the HIGHEST plausible contribution? Q253 Realistically, what is your BEST GUESS?

End of Block: Fridge temp

Start of Block: When unpacking, check

Q249

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

When unpacking after shopping, the storage instructions on food packets were checked and followed?

Q256 Realistically, what do you think is the LOWEST plausible contribution? Q257 Realistically, what do you think is the HIGHEST plausible contribution? Q258 Realistically, what is your BEST GUESS?

End of Block: When unpacking, check

Start of Block: Store in containers

Q27

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

At home, food was stored in well-sealed, clear and labelled containers in the fridge, freezer and pantry?

Q259 Realistically, what do you think is the LOWEST plausible contribution? Q260 Realistically, what do you think is the HIGHEST plausible contribution? Q261 Realistically, what is your BEST GUESS?

End of Block: Store in containers

Start of Block: Bread storage

Q28

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:



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At home, bread was stored in an airtight bag or bread box?

Q263 Realistically, what do you think is the LOWEST plausible contribution? Q264 Realistically, what do you think is the HIGHEST plausible contribution? Q265 Realistically, what is your BEST GUESS?

End of Block: Bread storage

Start of Block: Check labels regularly

Q253

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

At home, the date labels of food in the household fridge, freezer and pantry were checked every 1-2 weeks?

Q266 Realistically, what do you think is the LOWEST plausible contribution? Q267 Realistically, what do you think is the HIGHEST plausible contribution? Q268 Realistically, what is your BEST GUESS?

End of Block: Check labels regularly

Start of Block: Use it up shelf

Q29

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

There was a 'use it up' shelf in household fridges and/or pantries for any food (including leftovers) that needs to be eaten?

Q269 Realistically, what do you think is the LOWEST plausible contribution? Q270 Realistically, what do you think is the HIGHEST plausible contribution? Q271 Realistically, what is your BEST GUESS?

End of Block: Use it up shelf

Start of Block: Arrange food

Q30

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Once a week, food items were rotated in household fridges and pantries so that food that needs using up is visible and at the front?



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Q272 Realistically, what do you think is the LOWEST plausible contribution? Q273 Realistically, what do you think is the HIGHEST plausible contribution? Q274 Realistically, what is your BEST GUESS?

End of Block: Arrange food

Start of Block: When date reached

Q32

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Food at home that is nearing its date label is inspected and smelt before deciding to use or dispose?

Q275 Realistically, what do you think is the LOWEST plausible contribution? Q276 Realistically, what do you think is the HIGHEST plausible contribution? Q277 Realistically, what is your BEST GUESS?

End of Block: When date reached

Start of Block: Comments or add knowledge q35

Q238 Please enter any comments, additional knowledge or justification that you have about your estimates and/or these food storing and keeping behaviours

End of Block: Comments or add knowledge q35

Start of Block: Cooking

Section E: When cooking ... (p.s. you are more than halfway through this survey!)

In the following section, we will ask you to estimate the household food waste reduction potential *of behaviours to do with cooking.* Please imagine what the impact would be if individuals were to perform that behaviour whenever possible.

All questions follow the same format: you are asked to estimate the *(i) highest* and *(ii) the lowest* plausible contribution (out of 10) of that behaviour to reducing household food waste, and to then *(iii) make your final best guess*.

End of Block: Cooking

Start of Block: Preserving food

Q34

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Perishable foods that cannot be used up in time are preserved by pickling, stewing or saucing for later use?



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Q278 Realistically, what do you think is the LOWEST plausible contribution? Q279 Realistically, what do you think is the HIGHEST plausible contribution? Q280 Realistically, what is your BEST GUESS?

End of Block: Preserving food

Start of Block: Stock

Q37

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

When cooking at home, a stock is made of any food remains (bones or peels) and frozen for later use?

Q281 Realistically, what do you think is the LOWEST plausible contribution? Q282 Realistically, what do you think is the HIGHEST plausible contribution? Q283 Realistically, what is your BEST GUESS?

End of Block: Stock

Start of Block: Cook from freezer

Q38

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Once a week, a meal was cooked from food in the household freezer?

Q284 Realistically, what do you think is the LOWEST plausible contribution? Q285 Realistically, what do you think is the HIGHEST plausible contribution? Q286 Realistically, what is your BEST GUESS?

End of Block: Cook from freezer

Start of Block: Meal that uses up food

Q257

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Once a week, a meal is made that combines any food at home that needs using up?

Q287 Realistically, what do you think is the LOWEST plausible contribution? Q288 Realistically, what do you think is the HIGHEST plausible contribution? Q289 Realistically, what is your BEST GUESS?

End of Block: Meal that uses up food

Start of Block: Make several portions



Q261 What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

When cooking at meal at home, several portions were made to keep (in fridge or freezer) for later?

Q290 Realistically, what do you think is the LOWEST plausible contribution? Q291 Realistically, what do you think is the HIGHEST plausible contribution? Q292 Realistically, what is your BEST GUESS?

End of Block: Make several portions

Start of Block: Involve kids

Q40

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Children are involved in meal preparation and cooking at home?

Q293 Realistically, what do you think is the LOWEST plausible contribution? Q294 Realistically, what do you think is the HIGHEST plausible contribution? Q295 Realistically, what is your BEST GUESS?

End of Block: Involve kids

Start of Block: Before cooking check others

Q39

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Before a meal is cooked at home, it is checked how many household members will be eating?

Q296 Realistically, what do you think is the LOWEST plausible contribution? Q297 Realistically, what do you think is the HIGHEST plausible contribution? Q298 Realistically, what is your BEST GUESS?

End of Block: Before cooking check others

Start of Block: Comments or add knowledge q

Q239 Please enter any comments, additional knowledge or justification that you have about your estimates and/or these cooking behaviours



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End of Block: Comments or add knowledge q

Start of Block: Eating

Section F: When eating ...

In the following section, we will ask you to estimate the household food waste reduction potential *of behaviours to do with eating*. Please imagine what the impact would be if individuals were to perform that behaviour whenever possible.

All questions follow the same format: you are asked to estimate the *(i) highest* and *(ii) the lowest* plausible contribution (out of 10) of that behaviour to reducing household food waste, and to then *(iii) make your final best guess*.

End of Block: Eating

Start of Block: Serve themselves

Q41

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Household members are allowed to serve themselves at mealtimes?

Q299 Realistically, what do you think is the LOWEST plausible contribution? Q300 Realistically, what do you think is the HIGHEST plausible contribution? Q301 Realistically, what is your BEST GUESS?

End of Block: Serve themselves

Start of Block: More time for kids

Q45

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Children were allowed more time to eat during mealtimes at home?

Q302 Realistically, what do you think is the LOWEST plausible contribution? Q303 Realistically, what do you think is the HIGHEST plausible contribution? Q304 Realistically, what is your BEST GUESS?

End of Block: More time for kids

Start of Block: Small plates/bowls



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Q44 What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Small plates and bowls were used in homes at mealtimes?

Q308 Realistically, what do you think is the LOWEST plausible contribution? Q309 Realistically, what do you think is the HIGHEST plausible contribution? Q310 Realistically, what is your BEST GUESS?

End of Block: Small plates/bowls

Start of Block: Comments or add knowledge q

Q240 Please enter any comments, additional knowledge or justification that you have about your estimates and/or these eating behaviours

End of Block: Comments or add knowledge q

Start of Block: After eating

Section G: After eating ...

In the following section, we will ask you to estimate the household food waste reduction potential of behaviours to do with after eating. Please imagine what the impact would be if individuals were to perform that behaviour whenever possible.

All questions follow the same format: you are asked to estimate the (i) highest and (ii) the lowest plausible contribution (out of 10) of that behaviour to reducing household food waste, and to then (iii) make your final best guess.

End of Block: After eating

Start of Block: Leftovers stored

Q47

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

After a home meal, leftovers were stored in sealed, clear and labelled containers in the fridge or freezer? Q312 Realistically, what do you think is the HIGHEST plausible contribution? Q313 Realistically, what is your BEST GUESS?

End of Block: Leftovers stored



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Q48

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

If excess household food that cannot be frozen or preserved was shared with extended family and friends?

Q314 Realistically, what do you think is the LOWEST plausible contribution? Q315 Realistically, what do you think is the HIGHEST plausible contribution? Q316 Realistically, what is your BEST GUESS?

End of Block: Share excess

Start of Block: Comments or add knowledge q

Q241 Please enter any comments, additional knowledge or justification that you have about your estimates and/or these after eating behaviours

End of Block: Comments or add knowledge q

Start of Block: Audit waste

Section H: Auditing food waste ...

In the following section, we will ask you to estimate the household food waste reduction potential of behaviours to do with auditing good waste. Please imagine what the impact would be if individuals were to perform that behaviour whenever possible.

All questions follow the same format: you are asked to estimate the (i) highest and (ii) the lowest plausible contribution (out of 10) of that behaviour to reducing household food waste, and to then (iii) make your final best guess.

Q50

What contribution (out of 10) would it make to reducing a household's 94 kg per capita food waste footprint if:

Households measured their food waste and set goals to reduce current amounts?

Q317 Realistically, what do you think is the LOWEST plausible contribution? Q318 Realistically, what do you think is the HIGHEST plausible contribution? Q319 Realistically, what is your BEST GUESS?

End of Block: Audit waste



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Householder likelihood survey

Welcome to the Household Food Purchasing and Use survey

Before continuing, please read the information below carefully.

This survey is being conducted through ORU by BehaviourWorks Australia at Monash University on behalf of OzHarvest. The aim of the survey is to better understand current patterns, and the effort involved, of different food buying and use behaviours in households. OzHarvest's commissioning of this research is supported by the Australian Government's 2019 Environment Restoration Fund.

If you agree to participate, we will only need about 15 minutes of your time to complete this survey. Participating in this survey will not require you to reveal any information (beyond your postcode) that could be used to identify you. While the results from this survey will mainly be reported in collated summary format, individual responses may also be shared with OzHarvest to better understand current behaviours to do with food buying and use.

Your participation is completely voluntary. You can choose not to complete the survey. However once you complete the survey, it is not possible to withdraw at all. Only the researcher and OzHarvest will have access to the raw electronic data that you submit as a member of this ORU panel. The electronic data will be secured on the Monash network drive (protected by restricted access), will be retained for at least five years, and may be used by the research team for comparative purposes in the future.

Please remember that there are no right or wrong answers. We are interested in your honest responses as they will help better understand current patterns of behaviour and the likelihood of uptake of new behaviours. If you have any concerns or complaints about the project, you can contact the Executive Officer of the Monash University Human Research Ethics Committee.

Project number: 25027

Room 111, Building 3e Research Office Monash University VIC 3800 Tel: +61 3 9905 2052 Email: muhrec@monash.edu

If you are ready and willing to participate in this survey, you can click "next" to continue



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Before you begin, we have a few questions about you to make sure we are surveying a representative group of the Australian population.

Age What is your age?

- \bigcirc Under 18 years old (4)
- \bigcirc 18-24 years old (5)
- \bigcirc 25-34 years old (6)
- \bigcirc 35-44 years old (7)
- \bigcirc 45-54 years old (8)
- \bigcirc 55-64 years old (9)
- 65-74 years old (10)
- \bigcirc 75 years or older (12)

Q2_Gender What is your gender?

Female (1)
Male (2)
Non-binary / gender diverse (3)
My gender identity isn't listed. I identify as: (4)
Prefer not to say (5)



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Q3_PostC What is the postcode where you usually live?

In this survey, we aim to better understand people's current patterns, and effort involved, of different food buying and use behaviours.

We will ask you about a number of behaviours split across six different sections - from planning meals, to shopping, storing, cooking, eating and after eating. You will be asked to indicate how often you perform a behaviour in a typical month and then give it a score based on how easy or difficult it is.

In answering, please think about you home or personal life (rather than at work or elsewhere).

There are no right or wrong answers, we are interested in your genuine experiences and opinions.

Please note: For each behaviour, we will ask how often you do them in a typical month - **before the Covid-19 pandemic had disrupted our lives**. We understand the day to day activities we ask about in this survey may have changed quite a bit in the last few months. Try to think back over the last 12 months, and consider a 'normal' month BEFORE the pandemic in your answers.

End of Block: Pre-Behaviour

Start of Block: INTRO SECTION 1: Planning meals or shopping

INTR CONS SECTION 1: Planning meals or planning shopping

In the first section, we are interested in understanding what you do when planning meals or planning shopping.

End of Block: INTRO SECTION 1: Planning meals or shopping

Start of Block: Household meal plan

Q4_FREQ_Mealplan

In a typical month, how often do you:

Make a household meal plan* every 3 to 4 days?



(* making a meal plan should involve other household members and include using up leftovers and uneaten perishables, as well as possible take-away/eating out meals)

O Never (1)

Rarely (3)

O Sometimes (4)

Often (5)

 \bigcirc (Almost) always (7)

EXPL_EFF Next, we ask you to score this behaviour in terms of the effort needed for you to do it based on three things:

Mental effort: What is the amount of thinking and planning involved?Financialcost: How much do you think it costs to undertake the behaviour?Effort of 'fit' withyour household: What is the effort involved in carrying out this behaviour when considering thedifferent schedules and food preferences of those you live with?

If you 'never' do a particular behaviour, tell us how much effort you think it would be if you were to do it.

Q5_effort_mealplan **How much <u>EFFORT</u> do you think is needed to:**

Make a household meal plan* every 3 to 4 days?



(* making a meal plan should involve other household members and include using up leftovers and uneaten perishables, as well as possible take-away/eating out meals)

	Very low (1)	Low (2)	Medium (3)	High (4)	Very high (5)
Mental effort (1)	0	\bigcirc	\bigcirc	0	0
Financial cost (2)	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc
Effort of 'fit' with household (6)	0	0	\bigcirc	\bigcirc	\bigcirc

Thank you! All the questions that follow will be like this (we'll remind you from time to time what different effort types mean).

Q6-freq-Shoplist In a typical month, how often do you:

Make a shopping list* before going food shopping?

(*making a shopping list should involve other household members and should be based on meal plans)

O Never (1)
Rarely (3)
O Sometimes (4)
Often (5)
◯ (Almost) always (7)

Q7-effort shoplist How much EFFORT do you think is needed to:

Make a shopping list* before going food shopping?



meal plans)											
	Very low (1)	Low (2)	Medium (3)	High (4)	Very high (5)						
Mental effort (1)	0	\bigcirc	\bigcirc	0	0						
Financial cost (2)	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc						

(*making a shopping list should involve other household members and should be based on

Q8 freq checkstocks In a typical month, how often do you:

Effort of 'fit' with household (3)

Check what food is in your pantry, fridge and freezer before making a shopping list?

Q9-effort checkstock How much EFFORT do you think is needed to:

Check what food is in your pantry, fridge and freezer before making a shopping list?

Q10 freq eatshop In a typical month, how often do you:

Eaten a meal or snack (if hungry), before going food shopping?

_ _ _ _ _ _ _ _ _ _ _ _ _

Q11-effort_eatshop How much EFFORT do you think is needed to:

Eat a meal or snack (if hungry), before going food shopping?

SECTION 2: Food shopping

In the first section, we are interested in understanding what you do when food shopping.



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Remember: we will ask you how often you have do the different behaviours in a typical month and to then indicate the effort needed to carry out the behaviours based on:

Mental effort: What is the amount of thinking and planning involved? Financial cost: How much do you think it costs to undertake the behaviour? Effort of 'fit' with your household: What is the effort involved in carrying out this behaviour when considering the different schedules and food preferences of those you live with? If you 'never' do a particular behaviour, tell us how much effort you think it would be if you were to do it.

Q12-freq_speciliaty In a typical month, how often do you:

Buy food from local speciality stores (green grocers, butchers) and markets in preference to large supermarkets?

Q13-effort_specialit How much EFFORT do you think is needed to:

Buy food from local speciality stores (green grocers, butchers) and markets in preference to large supermarkets?

Q14-freq_online In a typical month, how often do you:

Buy food* through online ordering and delivery services?

(*household groceries not takeaway meals)

Q15_effort_online How much EFFORT do you think is needed to:

Buy food* through online ordering and delivery services?

(*household groceries not takeaway meals)

Q16-freq_mealkit In a typical month, how often do you:



Use a meal-kit or recipe box service?

Q17-effort_mealkit How much EFFORT do you think is needed to:

Use a meal-kit or recipe box service?

Q18-freq_bigshop In a typical month, how often do you:

Limit shopping for non-perishable food to every 1-2 weeks?

Q19_effort_bigshop How much EFFORT do you think is needed to:

Limit shopping for non-perishable food to every 1-2 weeks?

Q20-freq_asneedshop In a typical month, how often do you:

Only shop for perishable food when household stocks run out?

Q21-effort_asneedsho How much EFFORT do you think is needed to:

Only shop for perishable food when household stocks run out?

Q22-freq_fromlist In a typical month, how often do you:

Only buy food included on the shopping list when shopping?

Q23-effort_from list **How much <u>EFFORT</u> do you think is needed to:**



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Only buy food included on the shopping list when shopping?

Q24_freq-discounted In a typical month, how often do you:

Only buy discounted, close-to-date food if you had a plan to use it immediately?

Q25_effort_discounte How much EFFORT do you think is needed to:

Only buy discounted, close-to-date food if you have a plan to use it immediately?

Q26-freq_bulk In a typical month, how often do you:

Only buy bulk amounts, or large quantity special offers, for non-perishable food items?

Q27_effort_bulk How much EFFORT do you think is needed to:

Only buy bulk amounts, or large quantity special offers, for non-perishable food items?

Q28-freq_frozenveg In a typical month, how often do you:

Buy frozen vegetable options instead of fresh ones?

Q29-effort_frozenveg How much EFFORT do you think is needed to:

Buy frozen vegetable options instead of fresh ones?

Q30-freq-preport In a typical month, how often do you:



Buy food in pre-portioned options?

Q31_effort_preposrt How much EFFORT do you think is needed to:

Buy food in pre-portioned options?

Q32_freq_packetinfo In a typical month, how often do you:

Read the packet information* before deciding to buy food when shopping?

(*this includes use-by-date, portion size and storage guidance)

Q33_effort_packetinf How much EFFORT do you think is needed to:

Read the packet information* before deciding to buy food when shopping?

(*this includes use-by-date, portion size and storage guidance)

SECTION 3: Storing and keeping food at home

In the first section, we are interested in understanding what you do when storing and keeping food at home.

Remember: we will ask you how often you have do the different behaviours in a typical month and to then indicate the effort needed to carry out the behaviours based on:

Mental effort: What is the amount of thinking and planning involved? Financial cost: How much do you think it costs to undertake the behaviour? Effort of 'fit' with your household: What is the effort involved in carrying out this behaviour when considering the different schedules and food preferences of those you live with? If you 'never' do a particular behaviour, tell us how much effort you think it would be if you were to do it.

Q34-freq_checktemp In a typical month, how often do you:



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Check that your fridge is kept at 1 to 3 degrees C and your freezer is kept below -18 degrees C?

Q35_effort_checktemp How much EFFORT do you think is needed to:

Check that your fridge is kept at 1 to 3 degrees C and your freezer is kept below -18 degrees C?

Q36_freq_storeinstru In a typical month, how often do you:

Check and follow the storage instructions on food packets when unpacking after shopping?

Q37_freq_storeinstru How much EFFORT do you think is needed to:

Check and follow the storage instructions on food packets when unpacking after shopping?

Q38-freq_containers In a typical month, how often do you:

Store food in well-sealed, clear and labelled containers in your fridge, freezer and pantry?

Q39_effort_container How much EFFORT do you think is needed to:

Store food in well-sealed, clear and labelled containers in your fridge, freezer and pantry?

Q40-freq_bread In a typical month, how often do you:

Store bread in an air-tight bag in a bread box or freezer?

Q41-effort_bread How much EFFORT do you think is needed to:

Store bread in an air-tight bag in a bread box or freezer?



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Q42_freq_checklabels In a typical month, how often do you:

Check (on a weekly basis) the date labels of food in your fridge, freezer and pantry?

Q43-effort_checklabe How much EFFORT do you think is needed to:

Check (on a weekly basis) the date labels of food in your fridge, freezer and pantry?

Q44-freq_shelf Do you:

Have a 'use-it up' shelf in your fridge and/or pantry for any food (including leftovers) that needs to be eaten?

○ Yes (1)

🔾 No (3)

O Sometimes (4)

Q45-effort shelf How much EFFORT do you think is needed to:

Have a 'use-it up' shelf in your fridge and/or pantry for any food (including leftovers) that needs to be eaten?

Q46_freq_rotate In a typical month, how often do you:

Rotate (on a weekly basis) the food in your fridge and pantry so that food that needs using up is visible and at the front?

Q47-effort_rotate How much EFFORT do you think is needed to:

Rotate (on a weekly basis) the food in your fridge and pantry so that food that needs using up is



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visible and at the front?

Q48_freq_freezefood In a typical month, how often do you:

Freeze food (made or purchased) that won't be eaten within the next three or four days?

Q49-effort_freezefoo How much <u>EFFORT</u> do you think is needed to:

Freeze food (made or purchased) that won't be eaten within the next three or four days?

Q50-freq_inspect In a typical month, how often do you:

Inspect and smell food that is nearing its date label before deciding to use it or throw it away?

Q51-effort_inspect How much <u>EFFORT</u> do you think is needed to:

Inspect and smell food that is nearing its date label before deciding to use it or throw it away?

SECTION 4: Storing and keeping food at home

In the first section, we are interested in understanding what you do when cooking at home.

Remember: we will ask you how often you have do the different behaviours in a typical month and to then indicate the effort needed to carry out the behaviours based on:

Mental effort: What is the amount of thinking and planning involved? Financial cost: How much do you think it costs to undertake the behaviour? Effort of 'fit' with your household: What is the effort involved in carrying out this behaviour when considering the different schedules and food preferences of those you live with? If you 'never' do a particular behaviour, tell us how much effort you think it would be if you were to do it.

Q52_freq_preserve In a typical month, how often do you:

Preserve perishable foods at home by picking, stewing or saucing for later use?



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Q53_effort_preserve How much <u>EFFORT</u> do you think is needed to:

Preserve perishable foods at home by picking, stewing or saucing for later use?

Q54_freq_stock In a typical month, how often do you:

Make a stock of any food remains (bones or peels) at home and frozen it for later use?

Q55_effort How much EFFORT do you think is needed to:

Make a stock of any food remains (bones or peels) at home and freeze it for later use?

Q56-freq_freezermeal In a typical month, how often do you:

Cook a weekly meal from food that you had in your freezer?

Q57_effort_frezrmeal How much EFFORT do you think is needed to:

Cook a weekly meal from food that you had in your freezer?

Q58_freq_useupfood In a typical month, how often do you:

Make a weekly meal that combines any food that needs using up?

Q59_effort_useupfood How much <u>EFFORT</u> do you think is needed to:



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Make a weekly meal that combines any food that needs using up?

Q60_freq_batch In a typical month, how often do you:

Make several portions* when cooking a meal to keep (in fridge or freezer) for later?

(*for example batch cooking)

Q61_effort_batch How much <u>EFFORT</u> do you think is needed to:

Make several portions* when cooking a meal to keep (in fridge or freezer) for later?

(*for example batch cooking)

Q62_freq-invkids In a typical month, how often do you:

Involve the children in your household in meal preparation and cooking?

Q63_effort_invkids How much EFFORT do you think is needed to:

Involve the children in your household in meal preparation and cooking?

Q64_freq_checkothers In a typical month, how often do you:

Check how many others in your household will be eating before cooking a meal?

Q65_effort_checkothe How much <u>EFFORT</u> do you think is needed to:

Check how many others in your household will be eating before cooking a meal?



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SECTION 5: When eating at home

In the first section, we are interested in understanding what you do when eating at home.

Remember: we will ask you how often you do the different behaviours in a typical month and to then indicate the effort needed to carry out the behaviours based on:

Mental effort: What is the amount of thinking and planning involved? Financial cost: How much do you think it costs to undertake the behaviour? Effort of 'fit' with your household: What is the effort involved in carrying out this behaviour when considering the different schedules and food preferences of those you live with? If you 'never' do a particular behaviour, tell us how much effort you think it would be if you were to do it.

Q66_freq_servethem In a typical month, how often do you:

Allow others in your household to serve themselves at mealtimes?

Q67_effort_servethem How much <u>EFFORT</u> do you think is needed to:

Allow others in your household to serve themselves at mealtimes?

Q68_freq_moretime In a typical month, how often do you:

Allow children in your household more time to eat during mealtimes?

Q69_effort_moretime How much EFFORT do you think is needed to:

Allow children in your household more time to eat during mealtimes?

Q70_freq_bowlesplate In a typical month, how often do you:

Use small plates and bowls during mealtimes at home?



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Q71_effort_bowlplate How much EFFORT do you think is needed to:

Use small plates and bowls during mealtimes at home?

SECTION 6: A few others ...

In this last section, we are interested in understanding about two other behaviours.

Remember: we will ask you how often you have do the different behaviours in a typical month and to then indicate the effort needed to carry out the behaviours based on:

Mental effort: What is the amount of thinking and planning involved? Financial cost: How much do you think it costs to undertake the behaviour? Effort of 'fit' with your household: What is the effort involved in carrying out this behaviour when considering the different schedules and food preferences of those you live with? If you 'never' do a particular behaviour, tell us how much effort you think it would be if you were to do it.

Q72_freq_storel/over In a typical month, how often do you:

Store leftovers in sealed, clear and labelled containers in the fridge or freezer after a meal at home?

Q73_effort_storel/ov How much EFFORT do you think is needed to:

Store leftovers in sealed, clear and labelled containers in the fridge or freezer after a meal at home?

Q74_freq_share In a typical month, how often do you:

Share excess household food that cannot be frozen or preserved with extended family and friends?



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Q75_effort_share How much EFFORT do you think is needed to:

Share excess household food that cannot be frozen or preserved with extended family and friends?

Q76_freq_audit **Have you ever:**

Measured your household food waste and set goals to reduce current amounts of wasted food?

○ Yes (1)

O No (3)

Q77_effort_audit How much EFFORT do you think is needed to:

Measure your household food waste and set goals to reduce current amounts of wasted food?

End of Block: Audit waste

Start of Block: Demographics part 2

You're almost at the end of the survey. This last section is to help us learn a little more about you and your household.



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Q78_householdnumber How many people (including you) currently live in your household?

Only me (1)
O 2 (2)
O 3 (3)
O 4 (4)
\bigcirc 5 or more people (5)

Q79_#children How many children under the age of 18 live in your household?

1 (1)
2 (2)
3 (3)
4 (4)
5 or more children (5)

Q80_income What is your approximate HOUSEHOLD income?

This refers to the total income from all household occupants, and includes income from wages and salaries, government benefits, pensions, allowances and any other income you usually



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receive, before deductions for tax, superannuation contributions, health insurance, amounts salary sacrificed, or any other automatic deductions.



Display This Question:

If In which country were you born? = Other (please specify)

Q82_country In what year did you arrive in Australia?



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Q83_education What is the highest level of education qualification you have completed?

- \bigcirc Year 10 or below (1)
- O Year 11 (2)
- O Year 12 (3)
- Certificate I/II (4)
- Certificate III/IV (5)
- O Diploma/Advanced Diploma (6)
- \bigcirc Bachelor's degree (7)
- Graduate diploma/Graduate certificate (8)
- O Postgraduate degree (9)

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Q84_educ What is your current employment status? (If employed but currently on leave, this would still be classified as employed)

Employed full time (30 or more hours) (1)

- Employed part time (less than 30 hours) (2)
- Employed casually (3)
- O Self-employed (4)
- O Student only (5)
- \bigcirc Student and working full time (30 or more hours) (6)
- \bigcirc Student and working part time (less than 30 hours per week) (7)
- \bigcirc Engaged in home duties or volunteer work (8)
- O Retired (9)
- O Unemployed (10)

Thank you for your time and for the responses you provided today!

Just a reminder: Should you have any concerns about the ethical aspects of this study you can contact the Executive Officer of the Monash University Human Research Ethics Committee (MUHREC):Email: muhrec@monash.edu / Tel: +61 3 9905 2052

End of Block: End of survey



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Behavioural diagnosis – technical methods and results

Prepared by Nicholas Faulkner, Senior Research Fellow, BehaviourWorks Australia

Materials and methods

As we were interested in a phenomena (family communication styles) that occurs at the family rather than individual-level of analysis, we used a dyadic approach¹. In contrast to the individual approach (which looks at individuals' behaviours independently), the dyadic approach uses pairs of people (dyads) as the unit of analysis, and examines the relationship between ratings made by the people in each dyad. Here we investigate two types of dyads that are common in households: parent-child dyads and adult-couple dyads.

Participants

We recruited a total of 516 dyads using a commercial market research panel. Of these, 259 were parent-child dyads and 257 were adult-couple dyads. Parent-child dyads included the parent in the household that was most responsible or equally-responsible for planning and preparing meals

Adult-couple dyads included adults that lived together in households without children. These included couples that had never had children and were living by themselves (n=62), couples whose children had left the family home (n=182), and couples with no children who lived in a group household (n=13).

Selection of target food waste behaviours

To select target behaviours in theis study, we conducted a pilot exercise that used an impact-likelihood matrix (ref Sarah's paper) to prioritise behaviours. This process involved generating a large number of behaviours and estimating for each behaviour: (1) the likelihood of changing each behaviour; (2) the impact that the behaviour has on household food waste; and (3) current levels of uptake.

Measures

Frequency of behaviours that may reduce food waste. We asked the person who was most responsible for planning and preparing food to indicate how often they performed two behaviours: (1) 'make a weekly meal that combines any food at home that needs using up'; and, (2) 'check how many others in your household will be eating before making a meal'. We only asked the primary person in each dyad for this information, as we did not expect that asking children or partners who took less or no responsibility for preparing food would be able to accurately answer these questions. These two behaviours were chosen because previous research had indicated that performing these behaviours may reduce household food waste. Responses for both behaviours ranged from 1 ('Never') to 5 ('Almost always').

Frequency of throwing away uneaten food. The person in each dyad who was most responsible for planning and preparing food was asked to indicate how often, in a typical week, 'uneaten food is thrown out in [their] household'. Response categories ranged from 1 ('Never') to 5 ('Very regularly [every day]').

Family communication styles. We measured two aspects of family communication style - control and encouragement². Four items were used to measure the extent to which the communication style was controlling (e.g. 'I tell my partner they are not allowed to choose certain foods', 'I complain when I do not like the food my partner chooses for themselves'). To measure how encouraging a family's communication style was, we used five items (e.g. 'I ask my partner for advice about choosing food', 'I ask my partner to help me choose food for the household'). Both partners in each dyad were asked these questions, and responses could range from 1 ('Strongly disagree') to 7 ('Strongly agree'). Chronbach's alpha coefficients indicated that both the controlling ($\alpha_{Adult-couples} = .847$ to .858, $\alpha_{Parent-Child} = .838$ to .858) and encouraging scales ($\alpha_{Adult-couples} = .810$ to .834, $\alpha_{Parent-Child} = .722$ to .785) were sufficiently internally reliable. Moreover, partners' ratings of both control ($r_{Adult-couples} = .597$, $r_{Parent-Child} = .695$) and encouragement ($r_{Adult-couples} = .572$, $r_{Parent-Child} = .738$) were significantly correlated at the p < .001 level, which supports the assumption that dyad members are similar to each other. As such, consistent with dyadic analysis

¹ Kenny, D. A., et al. (2006). <u>Dyadic data analysis</u>. New York, New York : Guilford Press.

² Based on work from Aleti, T., et al. (2015). "Family communication for the modern era: a typology." <u>Young Consumers</u> **16**(4): 367 - 384.



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practices (ref), we averaged the partners' scores in each dyad to compute separate measures of controlling and encouraging family communication styles for each dyad.

It is worth noting that some research on family communication styles recommends allocating dyads into one of four categories of family communications styles by using median splits on the controlling and encouraging measures. We elected not to use this approach because using median splits reduces statistical power (thereby increasing the risk of false-negative errors) and may reduce the generalisability of findings (given that the cut points may or may not generalise to other samples). Median splits are generally not recommended in current statistical practices for these and other reasons.

Attitudes. To measure attitudes towards both of the behaviours noted above (see 'Frequency of behaviours that may reduce food waste'), we asked both members of each dyad to indicate the extent to which they thought each behaviour would be 'enjoyable' and 'worthwhile'. Responses to both items were recorded on a scale that range from 1 ('Extremely unenjoyable'/ 'Extremely pointless') to 7 ('Extremely pointless'/ 'Extremely worthwhile'). Responses to these items were positively correlated (for making a weekly meal: $r_{Adult-couples} = .359$ to .364, $r_{Parent-Child} = .479$ to .633, for checking with others: $r_{Adult-couples} = .562$ to .565, $r_{Parent-Child} = .485$ to .583). Moreover, partner's attitudes towards making a weekly meal ($r_{Adult-couples} = .361$, $r_{Parent-Child} = .377$) and checking with others ($r_{Adult-couples} = .441$, $r_{Parent-Child} = .338$) were significantly correlated with each other at the p < .001 level. We therefore averaged the partners' scores in each dyad to compute measures of attitudes towards both of the behaviours.

Perceived behavioural control. For both of the behaviours noted above, we asked the person in the dyad who was most responsible for planning and preparing food two items to assess the extent to which they perceived themselves to be able to perform each behaviour. Items were 'How confident are you that you can [perform the behaviour]' and 'It is completely up to me whether or not to [perform the behaviour]'. Responses were recorded on a scale that ranged from 1 ('Extremely unconfident'/ 'Strongly disagree') to 7 ('Extremely confident'/ 'Strongly agree') Responses to these items were positively correlated (for making a weekly meal: $r_{Adult-couples} = .321$, $r_{Parent-Child} = .368$, for checking with others: $r_{Adult-couples} = .294$, $r_{Parent-Child} = .433$), and were averaged to form composite scales.

Analysis approach

We used linear multiple regression to examine associations between family communication styles and food waste behaviours, controlling for other factors. For both of the behavioural outcomes examined (i.e. making a weekly meal and checking with others), we computed three regression models, each using different combinations of predictor variables. Model 1 included only the family communication style variables (controlling and encouraging) as predictors. Model 2 added attitude, perceived behavioural control, and demographic controls (i.e. dyad type, age, and gender of person most responsible for preparing food). Model 3 added two-way interaction terms between attitude and the family communication style variables. For the frequency of food waste outcome, no measures of general attitudes or general perceived behavioural control to avoid throwing out food were available. As such, we report Model 1 and a modified Model 2 that added demographic controls (but not attitude or perceived behavioural control measures).

Results

Descriptive statistics

Means and standard deviations for the three outcome variables and demographics are shown in Table 1. Mean frequencies of both 'making a weekly meal' and 'checking with others' were 3.50 and 3.45, respectively, which indicates that the average dyad performed these behaviours between 'sometimes' and 'often'. In terms of percentages, 51.6% and 57.2% of dyads 'often' or 'always' made a weekly meal and checked with others, respectively. For throwing away food, the mean frequency was 2.00, indicating that the average dyad threw away food 'infrequently (every 5-6 days)'. The vast majority of dyads (79.8%) reported throwing away food either 'infrequently' or 'never'.

Table 1: Descriptive statistics for outcome variables and demographic characteristics

Parent-child dyads (n=259)	Adult couple dyads (n=257)	Overall (N=516)



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Making a weekly meal that combines food needing to be used			
Mean (SD)	3.52 (0.904)	3.49 (0.834)	3.50 (0.869)
Median [Min, Max]	4.00 [1.00, 5.00]	4.00 [1.00, 5.00]	4.00 [1.00, 5.00]
Checking how many others will be eating before preparing a meal			
Mean (SD)	3.67 (1.36)	3.23 (1.63)	3.45 (1.52)
Median [Min, Max]	4.00 [1.00, 5.00]	4.00 [1.00, 5.00]	4.00 [1.00, 5.00]
Throwing away unused food			
Mean (SD)	2.24 (0.958)	1.76 (0.697)	2.00 (0.870)
Median [Min, Max]	2.00 [1.00, 5.00]	2.00 [1.00, 5.00]	2.00 [1.00, 5.00]
Gender of person most responsible for food			
Female	160 (61.8%)	172 (66.9%)	332 (64.3%)
Male	98 (37.8%)	83 (32.3%)	181 (35.1%)
Missing	1 (0.4%)	2 (0.8%)	3 (0.6%)
Age of person most responsible for food			
Under 18	0 (0%)	0 (0%)	0 (0%)
18 - 24	0 (0%)	7 (2.7%)	7 (1.4%)
25-34	27 (10.4%)	4 (1.6%)	31 (6.0%)
35-44	90 (34.7%)	2 (0.8%)	92 (17.8%)
45-54	115 (44.4%)	14 (5.4%)	129 (25.0%)
55-64	18 (6.9%)	35 (13.6%)	53 (10.3%)
65-74	9 (3.5%)	144 (56.0%)	153 (29.7%)
75 or older	0 (0%)	51 (19.8%)	51 (9.9%)

Note. SD refers to the Standard Deviation.

Regression analyses

Making a weekly meal that combines food needing to be used (Table 2).

- Without controlling for other factors, both controlling and encouraging family communication styles were positively associated with making a weekly meal that combines food needing to be used.
- When controlling for attitude, perceived behavioural control, and demographics, only controlling family communication styles, attitude, and perceived behavioural control were significantly associated with making a weekly meal.



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- There were no significant interactions between family communication styles and attitudes in predicting frequency of making a weekly meal.
- In the final model (Model 3) only attitude and perceived behavioural control were significant predictors of making a weekly meal that combines food needing to be used.

		Model 1			Model 2			Model 3	
Predictors	b	95% CI	Þ	b	95% CI	Þ	b	95% CI	Þ
Controlling	0.09	0.03 – 0.14	0.001	0.09	0.04 – 0.15	0.001	0.18	-0.12 – 0.49	0.238
Encouraging	0.1	0.03 – 0.18	0.008	0.07	-0.00 – 0.14	0.064	0.18	-0.20 – 0.55	0.351
Attitude				0.27	0.19 – 0.35	<0.001	0.4	0.09 – 0.70	0.012
Perceived behavioural control				0.18	0.11 – 0.26	<0.001	0.19	0.11 – 0.26	<0.001
Dyad type (adult-couple)				-0.2	-0.40 – 0.01	0.06	0.19	-0.40 – 0.01	0.066
Age of main person				0.02	-0.04 – 0.09	0.487	0.02	-0.05 – 0.09	0.549
Gender of main person (male)				- 0.07	-0.21 - 0.08	0.372	- 0.06	-0.20 - 0.09	0.422
Controlling * Encouraging							0	-0.05 – 0.04	0.822
Controlling * Attitude							0.01	-0.06 – 0.03	0.583
Encouraging * Attitude							-0.02	-0.08 – 0.04	0.567
Observations		516			513			513	
R ² / R ² adjusted	(0.037 / 0.03	33		0.234 / 0.22	23		0.235 / 0.22	20

Table 2: Regressions predicting frequency of making a weekly meal that combines food needing to be used

Checking how many others will be eating before preparing a meal (Table 3)

- Without adjusting for other factors, both controlling and encouraging family communication styles were positively associated checking with others.
- When controlling for attitude, perceived behavioural control, and demographics, only controlling family communication styles were significantly associated with checking with others.
- When interactions were added, encouraging family communication styles was found to significantly predict checking with others.
- In the final model, encouraging family communication style, attitude, perceived behavioural control, and male gender significantly explained checking with others before making a meal. In this model, the coefficient for



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encouraging family communication style (b = .54) indicates that the difference between dyads at the minimum and maximum ends of the encouraging scale was 3.24 points the outcome. This roughly corresponds to a shift from 'rarely' to 'almost always'.

• In the final model there was a significant interaction between attitude and encouraging communication styles. Figure 1 plots the interaction by showing the strength of the association between attitude and checking with others at high (90th percentile) and low (10th percentile) levels of encouraging communication style. As shown in Figure 1, attitude had a weaker effect on checking with others in dyads that had highly (vs low) encouraging communication styles.

Table 3

Regressions predicting frequency of checking how many others will be eating before preparing a meal

Table 1: Analysis results on relationship between target behaviours and different variables of interest. A p score of less than 0.05 indicates a statistically significant

		Model 1	-		Model 2			Model 3	
Predictors	b	95% CI	Þ	b	95% CI	Þ	Ь	95% CI	Þ
Controlling	0.15	0.06 – 0.24	0.002	0.12	0.03 – 0.21	0.008	0.36	-0.05 – 0.78	0.085
Encouraging	0.35	0.22 – 0.48	<0.001	0.05	-0.07 – 0.16	0.415	0.54	0.03 – 1.05	0.039
Attitude				0.69	0.58 - 0.80	<0.001	1.26	0.77 – 1.75	<0.001
Perceived behavioural control				0.25	0.14 – 0.36	<0.001	0.26	0.15 – 0.37	<0.001
Dyad type (adult-couple)				0.24	-0.56 – 0.08	0.142	0.21	-0.53 – 0.11	0.205
Age of main person				- 0.04	-0.14 – 0.07	0.483	- 0.04	-0.15 – 0.06	0.409
Gender of main person (male)				0.31	0.08 – 0.54	0.008	0.34	0.11 – 0.57	0.004
Controlling * Encouraging							0.01	-0.09 – 0.06	0.751
Controlling * Attitude							- 0.04	-0.11 – 0.04	0.327
Encouraging * Attitude							0.09	-0.19 0.00	0.047
Observations		516			513			513	
R ² / R ² adjusted		0.078 / 0.0	74		0.370 / 0.30	61		0.378 / 0.36	56

Figure 1

Estimated relationship between frequency of checking with others and attitude, conditioning on high (5.8) vs low (3.3) values of encouraging family communication styles. Shaded areas represent 95% confidence intervals. Analyses control for all variables included in Model 3.



Frequency of throwing away food. Results indicate that after controlling for demographic measures, neither controlling nor encouraging family communication styles were significantly associated with the frequency of throwing away food (see Table 4).

Table 4.Regressions predicting frequency of throwing away food.

		Model 1		Model 2			
Predictors	b	95% CI	Þ	b	95% CI	Þ	
Controlling	0.13	0.08 - 0.18	<0.001	0.06	-0.00 - 0.12	0.054	
Encouraging	0.06	-0.02 - 0.13	0.119	0.05	-0.02 - 0.12	0.189	
Dyad type (adult-couple)				-0.25	-0.460.03	0.026	
Age of main person				-0.07	-0.140.00	0.045	
Gender of main person (male)				0.18	0.03 – 0.33	0.022	
Observations	516			513			
R^2 / R^2 adjusted	0.050 / 0.046			0.108 / 0.099			

Summary of key findings

- The pattern of findings suggests that family communication styles tend to be weakly correlated with food waste behaviours. However, these associations are often, but not uniformly, reduced to non-significance after controlling for other factors. The extent to which family communication styles significantly explained food waste behaviours differed somewhat across the behaviours examined. For example, encouraging family communication styles appeared to play a significant role in explaining the frequency of checking how many others will be eating before preparing a meal, but did not play a significant role in explaining the frequency of making a weekly meal that combines food needing to be used.
- These findings confirm the importance of attitudes and perceived behavioural control in explaining household food waste behaviours. Attitude and perceived behavioural control were consistent predictors in every model in which they were included.



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• Moreover, with one exception, attitudes had a similar association with food waste behaviours irrespective of household communication styles. The one exception was an interaction between attitude and encouraging family communication styles in explaining the behaviour of checking with others before making a meal. For this behaviour, attitudes appeared to be more influential in families that had a non-encouraging communication style.



SUSTAINABLE

DEVELOPMENT

Focus group questions

Target behaviours:

- Make a weekly meal that combines any food at home that needs using up*? (*This includes food that has been in the fridge for a while, or is close to its expiry date, or is left-over from previous meals)
- Before cooking a meal at home, check how many household members will be eating

Questions:

Describe [behaviour a]. Who already does this at home *(show of hands, note them verbally)*? How often? What does that look like?

- When you think about [behaviour a] ... what do you think are the advantages or benefits to you or your household from this behaviour? ... ask others to add to what is listed or confirm/disagree... if possible note (or ask) verbally if the person who mentioned something does or does not do the behaviour.
- When you think about [*behaviour a*] ... what do you think are the disadvantages or draw-backs to you or your household from this behaviour? (Attitudes) ... ask others to add to what is listed or confirm/disagree...
- When you think about [*behaviour a*] who do you think might approve of you performing this behaviour (in your household or beyond)? (Social norms)
- When you think about [*behaviour a*] who do you think might disapprove of you performing this behaviour (in your household or beyond)? (Social norms)
- When you think about [*behaviour a*] what do you think would enable or help you to perform the behaviour more often? (Perceived behaviour control)
- When you think about [*behaviour a*] what do you think would hinder or stop you from performing the behaviour more often? (Perceived behaviour control)

Describe [behaviour b]. Are you already doing this at home? How often?

- When you think about [*behaviour b*] what do you think are the advantages or benefits to you or your household from this behaviour?
- When you think about [*behaviour b*] what do you think are the disadvantages or draw-backs to you or your household from this behaviour?
- When you think about [*behaviour b*] who do you think might approve of you performing this behaviour (in your household or beyond)?
- When you think about [*behaviour b*] who do you think might disapprove of you performing this behaviour (in your household or beyond)?
- When you think about [*behaviour b*] what do you think would enable or help you to perform the behaviour more often?
- When you think about [*behaviour b*] what do you think would hinder or stop you from performing the behaviour more often?



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