Outcome Delivery Incentive Research

Pilot Report

Chris Heywood
Tel +44 (0)20 8742 2211
chris.heywood@accent-mr.com
May 2022 | 3524_pilotv1

Contents

Accent

Introduction

Background and overview

- The study aims to develop a robust methodology for obtaining the customer evidence to support ODI rate setting at PR24 for common performance commitments.
- Stage 1 (completed) consisted of desk research, industry consultation and the development of options and recommendations for the measurement of customer preferences and values. The methodology was supported by two leading academics, Prof. Ken Willis and Prof. Giles Atkinson (LSE)
- Stage 2 (current) consists of the development and testing of the survey instrument, including two phases of cognitive depth interviews, and a quantitative pilot.
- This presentation is on the quantitative pilot and second phase of cognitive depths.

Objectives of the pilot

- To test the fieldwork methodology:
  - Including novel (to water sector) PAF approach for households
  - Including whether non-household survey works by telephone only.
- To test the stated preference designs
  - Feedback from participants
  - Diagnostics on choice data
  - Performance of econometric models
  - Consistency of results with expectations
  - Appropriateness of compensation levels used

Objectives of the cognitive depths

- To test changes to the questionnaire since the first round of depth interviews

Pilot methodology

Accent

Stated preference design: Compensation-based, linked to impact

Compensation exercise

Which option would you prefer?

Option A

UNEXPECTED water supply interruption (6 hours)

- Your tap water supply stops working without warning
- This is due to a burst pipe in your local area
- It stops for 6 hours, between 12:00 and 18:00 on a Wednesday afternoon

6 hours

Compensation paid*: £100

Option B

No unexpected water supply interruption

* compensation would be paid either by applying a credit to your water bill, or by a sending a cheque to your IF HH household IF NHH organisation, whichever you prefer.

- By varying amounts across the sample, we can measure the distribution of required compensation – a valid and appropriate measure of value.
- Two service issues used as 'pivots', or 'anchors', resulting in two sets of estimates.

Impact exercise

Which of these would have the most impact on your IF HH: household IF NHH: organisation?

PLANNED water supply interruption (6 hours)

- Your water company sends you a notice in the post that in 2 days' time your tap water supply will stop for 6 hours
- This is due to planned maintenance in your local area
- As planned, it then stops between 12:00 and 18:00 on a Wednesday afternoon

Planned, 6 hours

Discoloured water (24 hours)

- Your tap water starts running light brown, without warning
- This is due to traces of sediment from pipes being disturbed
- The water is safe to drink, but you shouldn't use a dishwasher or washing machine until the water runs clear again
- This happens for 24 hours from a Wednesday morning

24 hours

- By varying combinations of service issues across the sequence of question, and sample, we can measure an index of relative impact
- In the pilot there were 25 service issues, all linked, either individually or in combination, to anticipated common PCs

Outcomes from both exercises linked together to obtain values per affected household/premises of avoiding each type of issue

Survey methodology

The sample contained 1,058 households, split 50:50 between Postcode Address File (PAF) and Panel methods, and 80 non-households (NHH).

- HH PAF method:
  - Address sample purchased for each of the 17 water companies according to a matrix of water and wastewater company combinations
  - With an assumption of a 7.5% response rate 6,000 letters were sent out to achieve the target 450 interviews
  - The PAF does not include named addressees so each letter was addressed to the occupier
  - Each envelope included a letter on headed paper, explaining the purpose of the survey and including an online link and QR code
  - We offered an incentive to encourage participation
    - Half started at £5 and went to £10 on reminder
    - Half were pitched at £10 throughout
  - For those who were unable or didn't wish to respond online we offered the option of a paper version of the questionnaire
  - For both we sent a paper version of the questionnaire by post along with another pre-paid envelope for its return. There were 30 versions of the questionnaire to cover the different designs and these were randomly allocated.
  - 627 interviews achieved – a response rate of 10.5%
  - The average completion time was 16 minutes

- HH Panel method:
  - The Kantar online panel was used
  - Kantar was provided with target and maximum number of interviews for the required water / wastewater company combinations, and a list of the postcodes for each
  - The average completion time was 11 minutes

- NHH method
  - As for the HH methods the sample company was provided with the water/wastewater matrix, this time for 3,000 contacts.
  - Potential participants were phoned.
  - During the interview participants were told that they would be offered a series of choice pairs which were hosted online. They were offered a short link to these or they were read out over the phone
  - The link was in the following format: https://acsvy.com/3524/s1 with 30 variants.
  - 33 took the link and 47 did not
  - The average completion time was 18 minutes.

Survey methodology findings

Accent

HH Water-Wastewater

- Overall both methods were reasonably effective in achieving targets
- Notable shortfalls for:
  - Affinity Water:Thames Water
  - Hafren Dyfrdwy:Welsh Water
  - South East Water:Thames Water for PAF
  - South West Water: South West Water for panel

Clean water	Wastewater	Quota Target	Achieved	
			Panel	PAF
Affinity Water	Anglian Water	3	2	2
	Southern Water	1	2	2
	Thames Water	23	15	16
Anglian Water	Anglian Water	25	21	34
	Welsh Water/Dwr Cymru		1	
	Northumbrian Water	1	0	0
	Severn Trent Water	1	0	2
Bristol Water	Wessex Water	27	27	25
Welsh Water/Dwr Cymru	Welsh Water/Dwr Cymru	27	33	30
	Hafren Dyfrdwy		1	1
Hafren Dyfrdwy	Welsh Water/Dwr Cymru	20	4	6
	Hafren Dyfrdwy	7	9	10
	Wessex Water			1
Northumbrian Water	Anglian Water	8	1	7
	Northumbrian Water	16	16	20
	Thames Water	3	3	3
Portsmouth Water	Southern Water	27	27	38
Sutton & East Surrey (SES) Water	Southern Water	2	4	5
	Thames Water	25	24	26
Severn Trent Water	Welsh Water/Dwr Cymru		1	
	Severn Trent Water	26	34	41
	Wessex Water		1	
	Yorkshire Water	1	2	1
South East Water	South West Water			2
	Southern Water	16	12	24
	Thames Water	11	8	5
South Staffs Water	Anglian Water	5	1	3
	Severn Trent Water	22	34	20
	South West Water			1
South West Water	South West Water	21	6	34
	Southern Water	1	1	2
	Wessex Water	5	3	3
Southern Water	Southern Water	26	29	39
	Thames Water	1	2	1
Thames Water	Thames Water	27	38	32
United Utilities	United Utilities	27	28	33
Wessex Water	Wessex Water	27	26	30
Yorkshire Water	Severn Trent Water	1	1	1
	Yorkshire Water	26	30	44
Other	Other	0	3	3
Total		**450**	**450**	**547**

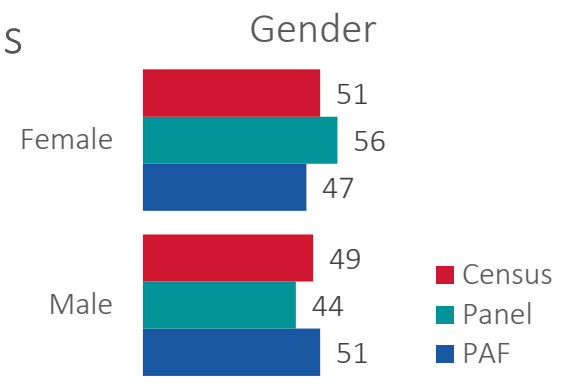
Key:

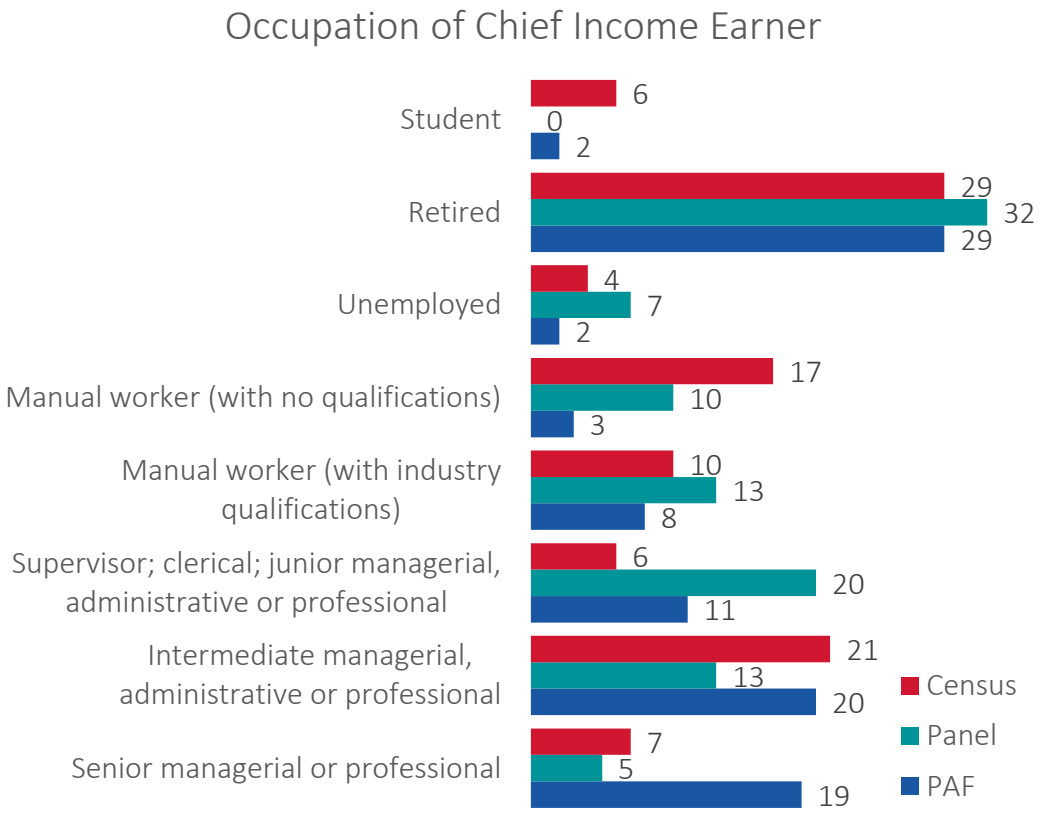
Below target

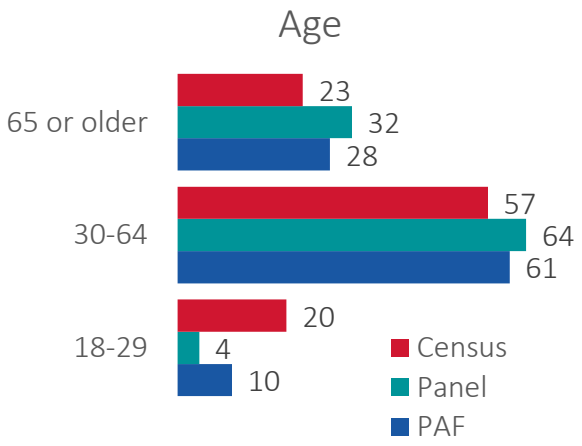
Substantially below target

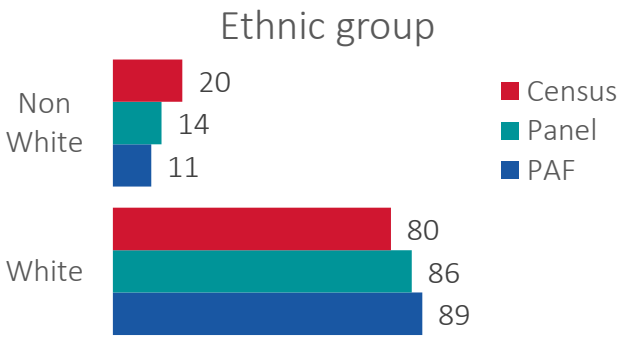
Demographics

- Older age profile than Census
- PAF closer to Census on gender
- Both samples more White than Census
- PAF much higher high grades





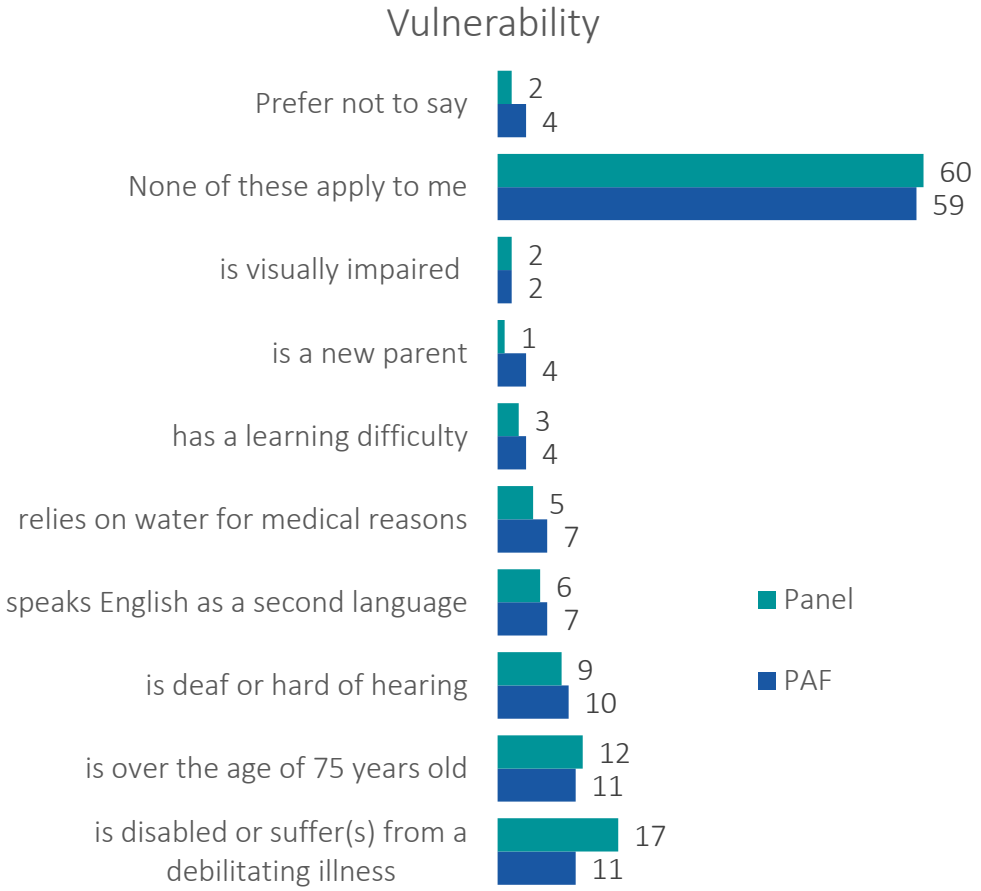




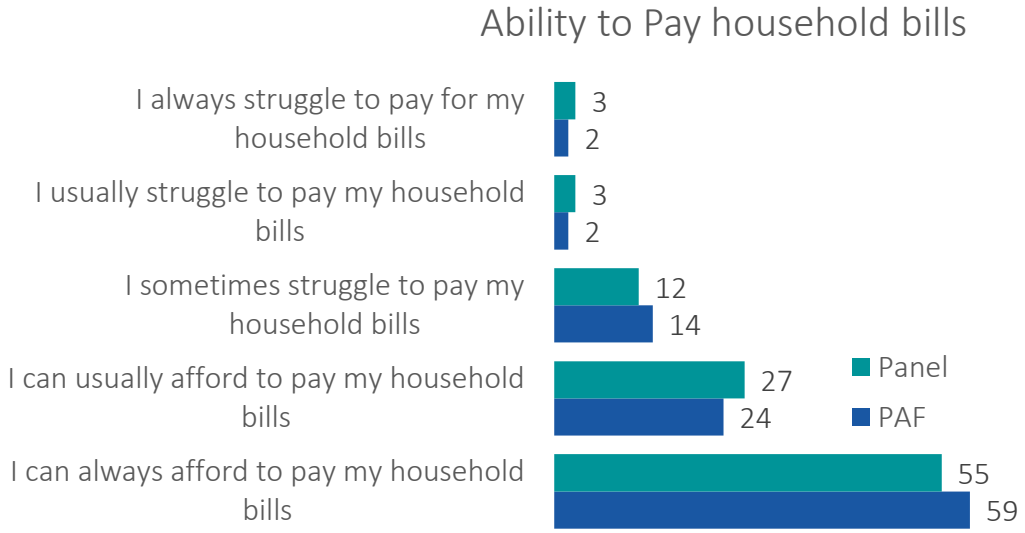
Accent

Vulnerability and Ability to Pay

- 40% panel and 41% PAF no vulnerabilities



- 59% PAF and 55% panel said they could always afford to pay their household bills
- 4% PAF and 6% panel said they usually or always struggled to pay their household bills



Accent

Conclusions on household survey methodology

- Overall, these findings do not conclusively point to an advantage of one method over the other, given the pre-known pros and cons of both methods.
- An option we put forward as worth considering is to split the main sample 50:50 between Panel and PAF methods.
  - This would be substantially lower cost than a pure PAF approach
  - It would achieve some of the benefits of the Panel method with respect to its improved ability to include lower social grade households and those with affordability concerns
  - It would also allow the ability to check for any biases attributable to a Panel sample due to its non-random selection
  - A PAF approach is better able to target certain water/wastewater company combinations
  - A Panel only approach is impossible in any case due to shortfalls in some water/wastewater company combinations

Stated preference findings

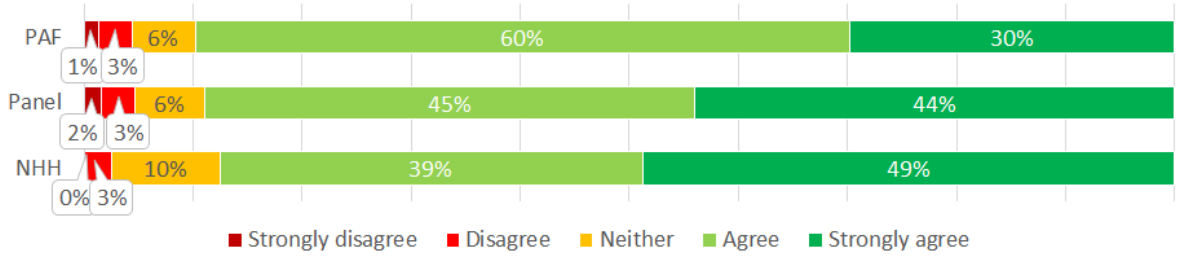
Accent

Summary of findings

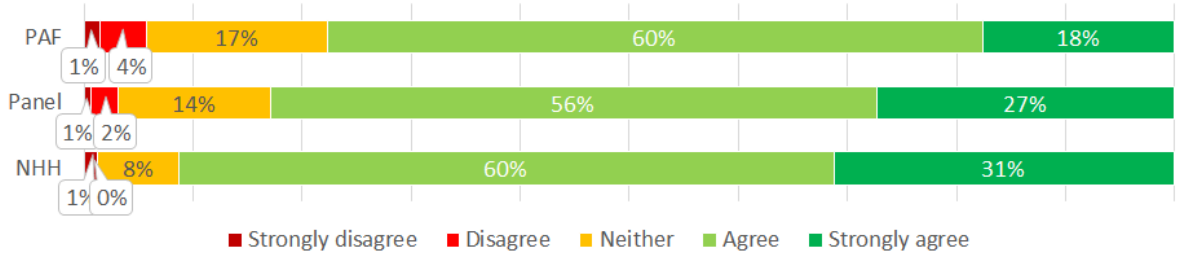
- The results of the pilot tests provided mixed evidence with respect to the stated preference design approach.
- In support of the approach:
  - Participant feedback was good for both the impact and the compensation exercise (see next two slides).
  - There were very few instances of non-trading behaviour in the scenario impact exercise (where participants always chose the same alternative throughout the exercise).
  - The econometric models were well estimated, especially considering the small sample size for non-households.
  - The impact rankings derived from the econometric models were highly consistent with prior expectations.
  - Also as expected, participants were more likely to take the compensation offered when it was high than when it was low.
- However, set against these positive findings, two key issues were identified:
  - At the highest compensation levels shown there were still substantial proportions of participants choosing not to take the compensation offered.
    - Because of this, mean valuation estimates from the pilot survey are unlikely to be accurate, and median valuations are imprecisely estimated, but this should be addressable by increasing the compensation levels used in the survey, and/or by choosing lower-impact service issues.
  - Estimates of the relative value of the two 'pivot' scenarios included in the compensation exercise were significantly different when obtained from the compensation exercise than when obtained from the impact exercise. This indicates that participants were not choosing consistently across the two exercises.

Participant feedback: Impact exercise

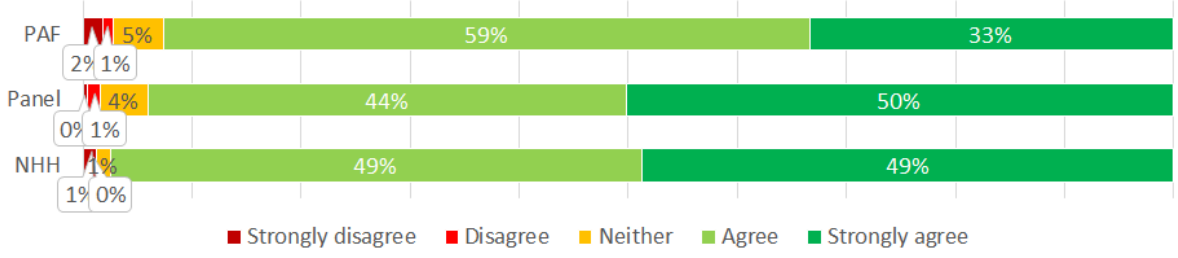
(a) I was able to understand the choices



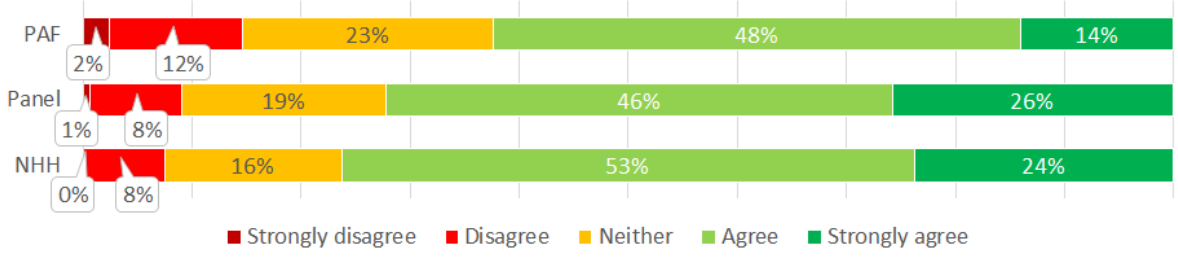
(b) I found the options believable



(c) My choices were based on how much impact I thought each option would have on my household/ premises



(d) I found it easy to choose between the options

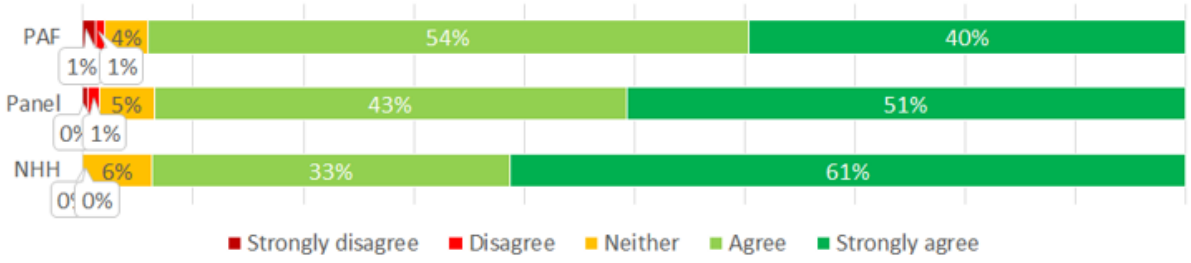


Base: PAF = 608; Panel = 450; NHH = 80

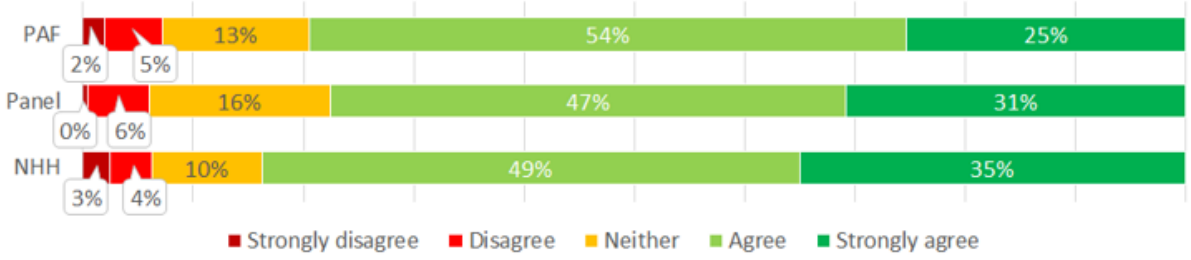
Feedback from participants following the impact exercise was positive. Even among those who did disagree, many of the reasons given were actually supportive, with very few cases of invalid responses.

Participant feedback: Compensation exercise

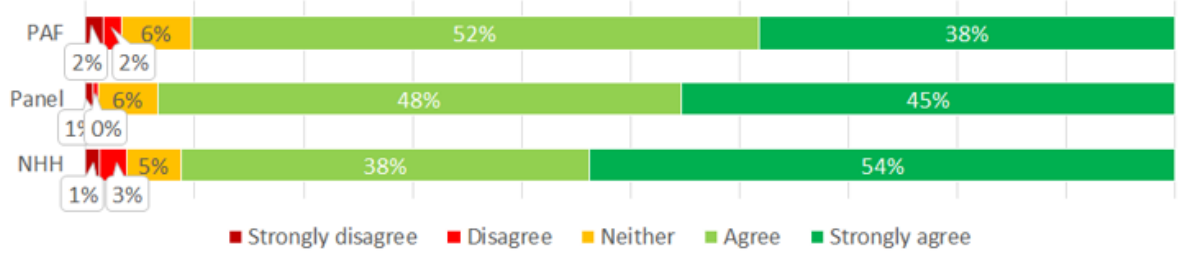
(a) I was able to understand the choices



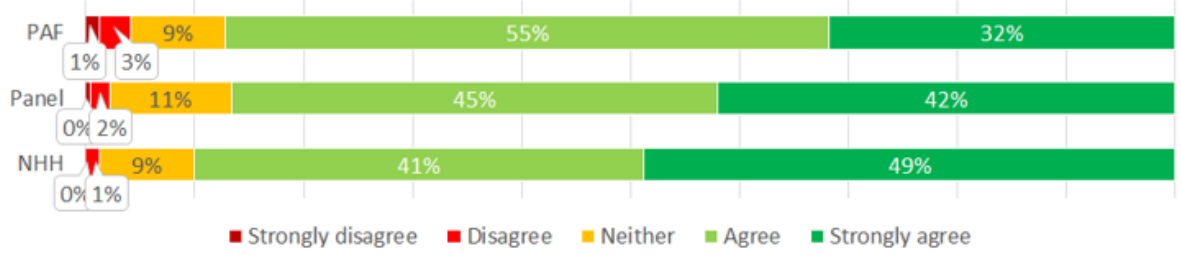
(b) I found the options believable



(c) My choices were based on how much impact I thought each option would have on my household/ premises and whether the amount of money shown was enough to compensate for this



(d) I found it easy to choose between the options



Base: PAF = 608; Panel = 450; NHH = 80

Feedback from participants following the compensation exercise was also positive. Again, even among those who did disagree, many of the reasons given were actually supportive, with very few cases of invalid responses.

Comparison of NHH feedback by whether information was obtained from weblink or read out by interviewer

	Impact exercise		Compensation exercise	
	% disagree or strongly disagree		% disagree or strongly disagree	
	Looked at website[1]	Read out by interviewer[2]	Looked at website[1]	Read out by interviewer[2]
I was able to understand the choices	0	4	0	0
I found the options believable	3	0	9	4
My choices were based on how much impact I thought each option would have on my premises	3	0	3	4
I found it easy to choose between the options	6	9	0	2

Bases: (1) 33, (2) 47

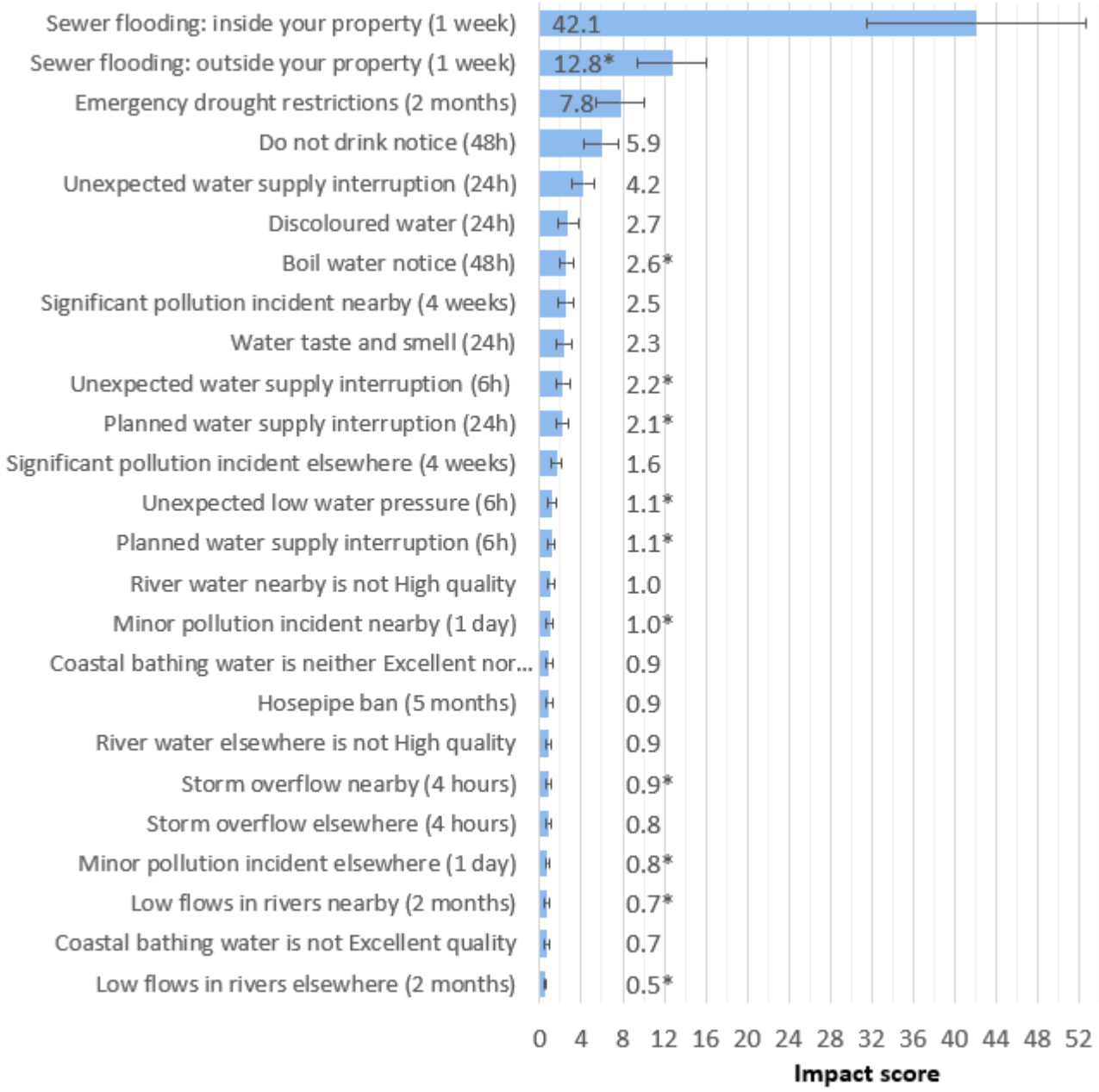
- The results seem to suggest a small harmful impact due to the choices being read out by phone.
  - More participants disagreed that they were able to understand the choices, and more disagreed that they found it easy to choose, when the choices were read out by phone.
- The results are inconclusive, though, due to the small sample size, and the impacts are fairly small.

Impact scores

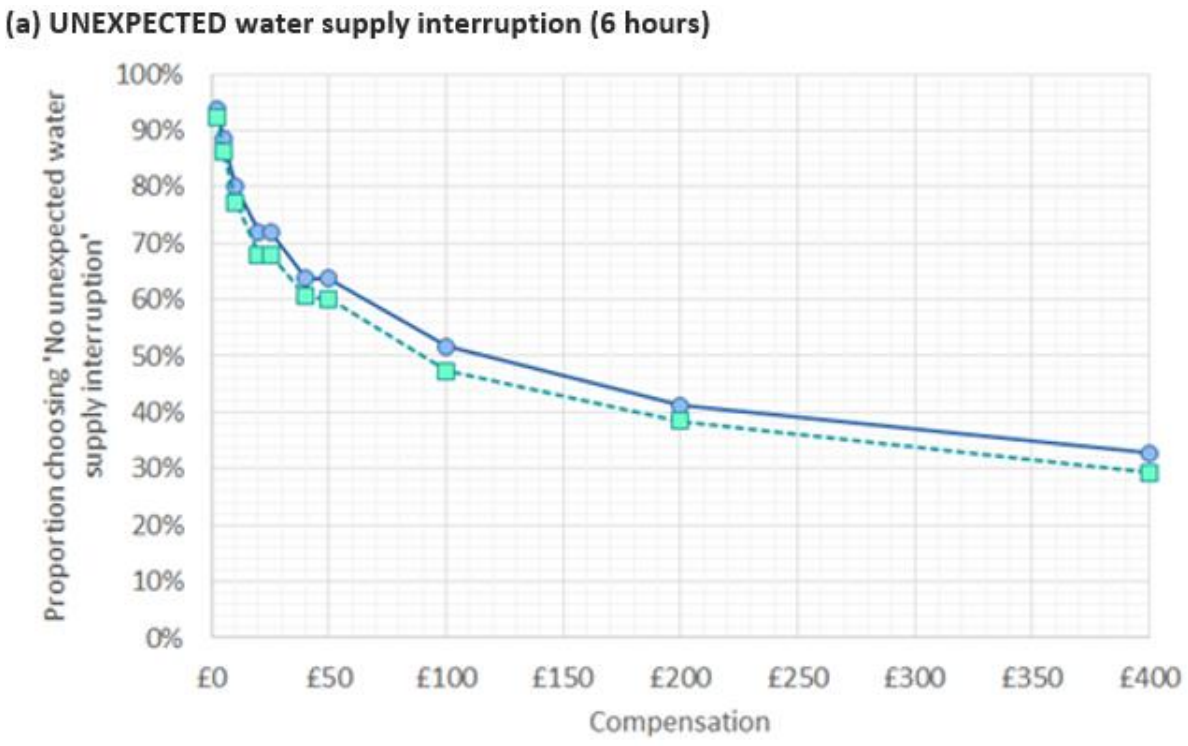
- Impact scores all in line with expectation, for PAF, Panel and NHH, e.g.:
  - Sewer flooding has highest impact
  - Longer interruptions > shorter
  - Unexpected interruptions > planned
  - Do not drink > boil notice
  - Significant pollution > minor
  - Issues nearby > issues elsewhere in region

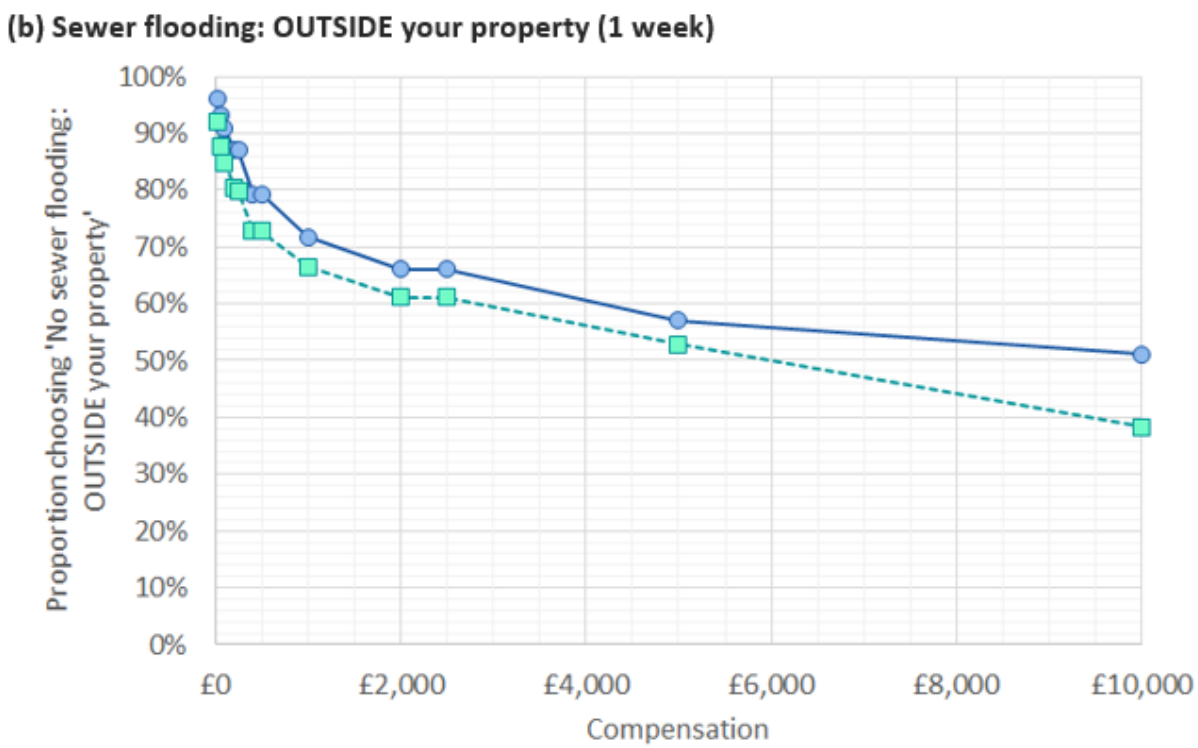
- Relative impact of external sewer flooding to unexpected interruption (6h):
  - 12.8 / 2.2 = 5.8 (PAF)
  - 8.3 / 4.2 = 2.0 (Panel)
  - 10.4 / 4.1 = 2.6 (NHH)

PAF impact scores



Compensation exercise results: households



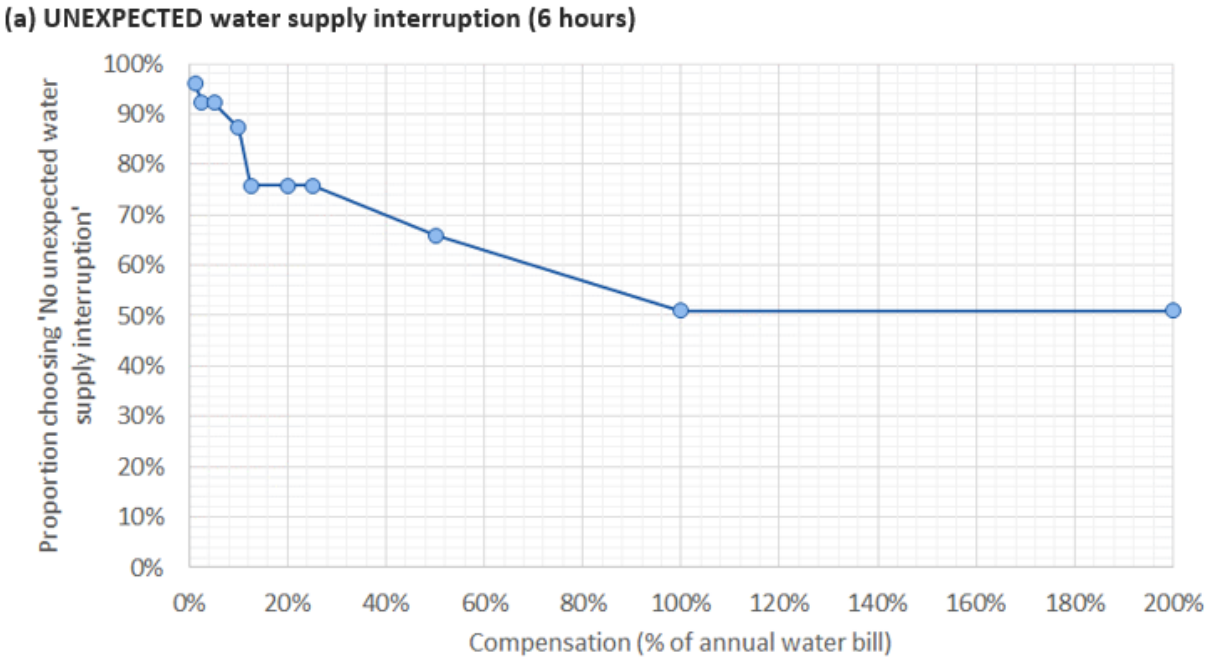


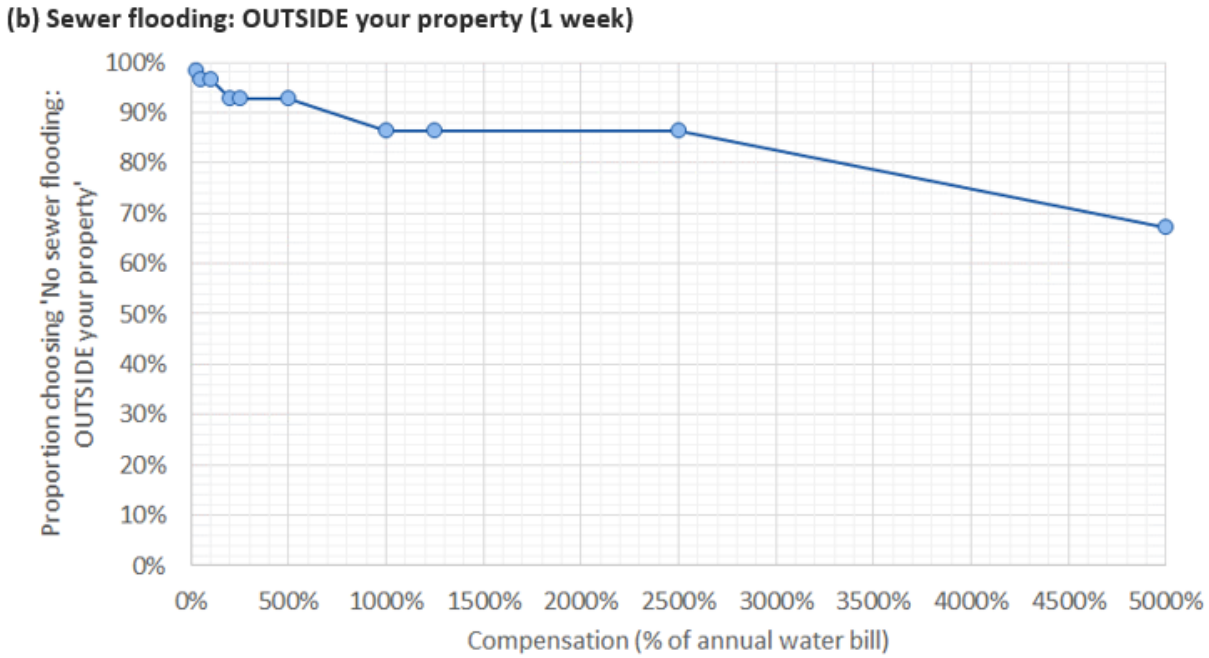
PAF Panel

Curves are downward sloping, as expected, but are 'too high' at the upper end to reliably estimate mean values. Medians are better, but no median estimated for PAF sample for external sewer flooding, although it can be seen to be close to £10k per incident.

Accent

Compensation exercise results: non-households





Curves are again downward sloping, but are even more 'too high' at the upper end to reliably estimate mean values. Also, medians are not identified here at all.

Accent

Valuations of avoiding service issues

Unexpected water supply interruption lasting (6 hours)

	PAF	Panel	NHH
Mean	£168	£154	113% of the annual water bill
Mean conf. interval	(£149, £187)	(£134, £176)	(86%, 141%)
Median	£116	£89	> 200% of the annual water bill

Sewer flooding outside one's property (1 week)

	PAF	Panel	NHH
Mean	£5,755	£4,871	39 times the annual water bill
Mean conf. interval	(£5,141, £6,374)	(£4,262, £5,502)	
Median	> £10,000	£5,958	> 50 times the annual water bill

Note: The mean is a lower bound Turnbull estimate, as explained in the text. Bootstrap confidence intervals based on 10,000 replications. (Interval not reported for NHH 'Sewer flooding' due to convergence issues in non-parametric ML estimation.) The median was estimated by interpolating between the relevant probability estimates.

- Lower bound mean valuations of avoiding external sewer flooding are at least 30 times higher than for an unexpected 6h interruption, i.e. much higher than the relative values estimated from the impact exercise.
- Possible explanations include:
  - The impact exercise fails to accurately measure relative impact
  - The compensation exercise fails to accurately measure required compensation; or
  - People evaluate impact differently when asked the compensation question than when asked about relative impacts

Cognitive interviews

Accent

Objectives, methodology and general findings

Objectives and methodology

- The objectives of this second phase of testing were:
  - to further test accessibility and understanding of the questionnaire
  - to capture any further feedback on the stimuli used in stated preference exercises (both written descriptions and images)
  - to test and gauge participants' responses to the levels of compensation being offered in the event of a customer experiencing a number of service issues
- 6 interviews were undertaken
  - 2 x NHH, 3 x HH, 1 x Non-bill payer
- Interviews were conducted on Zoom, were 45 minutes and participants were paid £30 (£40 for NHH)
  - CATI (NHH) and CAWI (HH and NBP) modes were replicated during interview

General findings

- Testing showed high levels of accessibility and good comprehension; questions were clear and well understood
  - Stated preference task instructions were found to be clear and comprehensive, evidencing that participants knew how to complete these exercises
  - In-survey questions and cognitive probes gave evidence that the stated preference choices were easy to understand and participants were able to choose between the options presented
- Service issue attributes were further tested for accessibility and clarity, with some minor suggestions for improvement having been captured for both text and supporting images

Service issues compensation exercise

The main focus of this phase was to understand whether participants found the high levels of compensation for the service issues presented in this task to be realistic and believable

NHH Participants

- Some NHH participants found the compensation being made available to be unbelievable; they said the compensation offered in some scenarios was unrealistically high:
  - Some said the sums on offer were 'incentives' rather than compensation
  - Some thought the high values were incorrect

"I can't actually see them doing this. They're far too generous. There's no way they're gonna give that kind of money."
NHH participant

HH Participants

- We captured mixed responses when probing HH customers on the sums being offered; reactions varied by service issue
  - One theme that led to scepticism towards the compensation sums was that some had experienced similar service issues previously but had not been compensated

Thank you

Accent conforms to the requirements of ISO20252:2012

Registered in London No. 2231083
Accent Marketing & Research Limited
Registered Address: 30 City Road, London, EC1Y 2AB

Accent