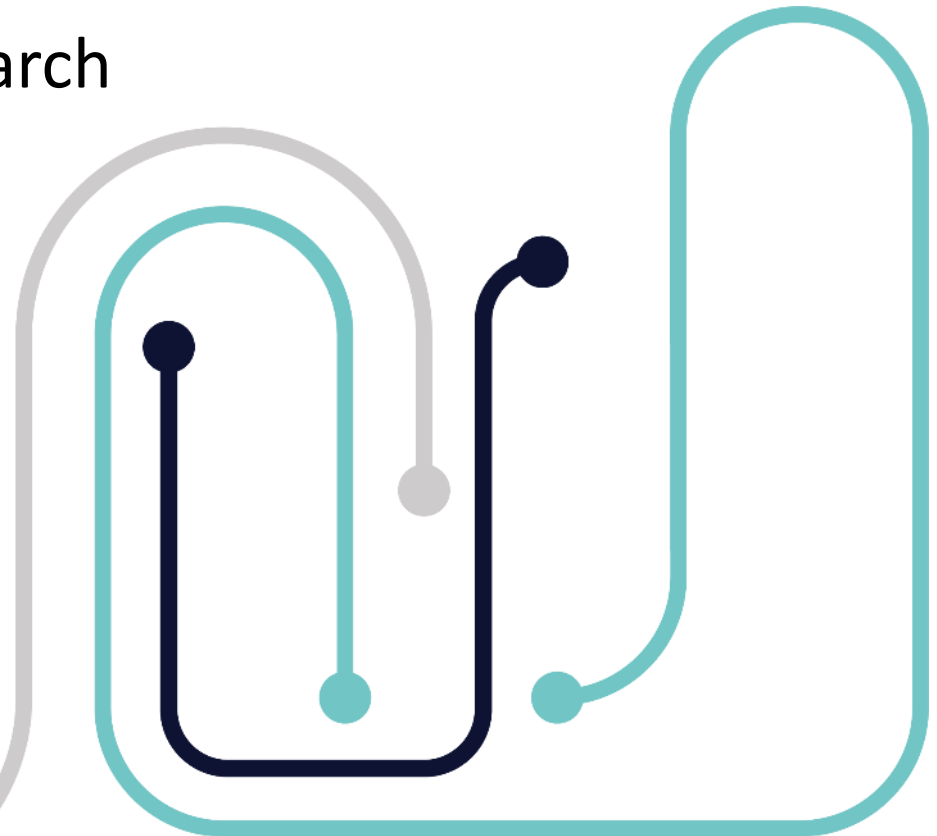


Bristol Water PR24 Willingness to Pay Research

Final Findings

December 2022



Summary

- This presentation provides the final findings from the PR24 Willingness to Pay research.
- These final findings are based on the fieldwork data collected for the household and non-household samples.
 - For households our final reporting is based on n=588 responses (487 online, 101 CAPI face to face).
 - For non-households our reporting is based on n=202 responses (101 online and 101 CATI, telephone recruited).
- For households, the final data (n=588) is providing estimates of mean WTP that align with expectations and have high statistical significance.
- For non-households, the final data (n=202) is providing estimates of mean WTP that align with expectations. However, some of the mean WTP estimates lack statistical significance. This may reflect the smaller sample size, but there is also evidence that the sampled businesses may have been less sensitive (compared to households) to the proposed bill changes.
- In addition to WTP, the survey provides evidence on levels of satisfaction with current services, customer views on the importance of different service areas and general views on priorities for improvement. This further evidence is presented in our supplemental findings for both households and non-households.

Outline

1. Introduction
2. Overview of Measures
3. Research Design
4. Methodology
5. Interim Household Findings
6. Interim Non-household Findings
7. Supplemental Household findings
8. Supplemental Non-household findings
9. Annex 1: DCE task attributes and levels
10. Annex 2: Survey showcards and instructions
11. Annex 3: Econometric Outputs

Introduction

Bristol Water have engaged ICS Consulting (& partners) to undertake an initial stated preference / willingness to pay customer research project for PR24.

The objective of the research is to provide a set of customer valuations that will be used as inputs to the development of the PR24 business plan.

The PR24 research programme is now being co-ordinated across South West Water, Bristol Water and Bournemouth Water (SBB)'. With this in mind the research for the Bristol Water has been aligned in terms of water service measures to studies already undertaken for the Bournemouth Water area.

The final designs for this initial PR24 research also take into account the measures previously used for Bristol Water at PR19. The table overleaf provides a comparative overview.

PR24 Research samples

Households:

- Target is a min of 500 survey completes
 - *Online – n=400*
 - *Face 2 Face – n=100 digitally disadvantaged households*

Business:

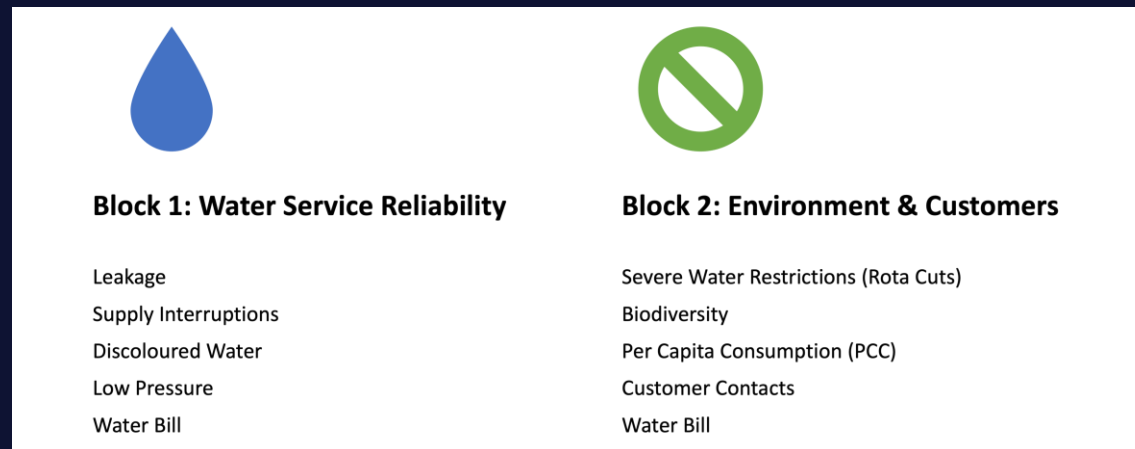
- Target is a min of 200 survey completes
 - *Online panel – n = 100*
 - *Telephone recruited – n = 100*

Overview of Measures for PR24 Research

Aspect of Service	Bristol PR19 – Study 1	Bristol PR19 – Study 2	Bournemouth PR24	Proposed Bristol PR24
Supply Interruptions	✓	✓	✓	✓
Leakage		✓	✓	✓
Helping customers use less water / PCC		✓		✓
Severe Water Restrictions	✓	✓	✓	✓
Water Restrictions - Hosepipe Bans	✓			✓
Discolouration	✓	✓	✓	✓
Taste / Smell		✓	✓	✓
Low Water Pressure	✓	✓	✓	✓
Meter Penetration	✓	✓		✓
Customer contacts			✓	✓
Protecting Environment (Biodiversity)		✓		✓
Protecting Environment (Drought Permits)			✓	✓
Traffic Disruption	✓			✓

PR24 Research Design

- For the PR24 research design the 8 measures below were the measures included in the main stated preference choice tasks. The WTP valuations for these measures are derived directly. These measures have been grouped into two blocks of measures as follows:



- The remaining 5 measures – Hosepipe bans, Taste/Smell, Meter Penetration, Drought Permits and Traffic Disruption were valued indirectly through an additional ranking / relative importance question in the survey. Final findings for this exercise are presented below.
- This approach to the design will allow full alignment with the already completed Bournemouth Water study, but also ensure continuity with the measures used at PR19 for Bristol Water.


Methodology

The research methodology is:

- Survey-based stated preference (SP) approach with representative sample of customers
- Respondents presented with 'simulated' choices designed to measure their preferences and valuations for maintaining and improving Bristol Water's services.
- Showcard materials providing service descriptions and comparative information embedded into survey.
- Two main choice exercises covering 8 water and environmental service areas (5 choices per exercise, 10 in total)
- Follow up choice tasks for a supplementary set of service areas

Survey structure and format

- **Introduction and screening questions:** for sampling quotas
- **Warm-up:** background and questions introducing BW, the services it provides, and view on current and comparative performance.



	Option A	Option B	Option C
Leakage Percentage of water lost due to leakage each year	NO CHANGE 13% (65 litres per property per day)	BETTER 6% (30 litres per property per day)	WORSE 17% (85 litres per property per day)
Supply Interruptions Number of properties affected by unexpected interruptions to water supply each year	NO CHANGE 4030 properties (73 in every 10,000 properties)	WORSE 6000 properties (108 litres per property per day)	NO CHANGE 4030 properties (73 in every 10,000 properties)
Tap Water Appearance Number of customer contacts about appearance of tap water each year	NO CHANGE 1400 contacts (25 in every 10,000 properties)	NO CHANGE 1400 contacts (25 in every 10,000 properties)	BETTER 2000 contacts (36 in every 10,000 properties)
Low Water Pressure Properties at risk of receiving low pressure	NO CHANGE 11 properties (0.2 in every 10,000 properties)	BETTER 5 properties (0.1 in every 10,000 properties)	BETTER 0 properties (0.0 in every 10,000 properties)
Water Bill Change in annual bill from 2025	No change	£5 increase (41p more per month)	£10 decrease (83p less per month)

Which option do you prefer?



- **Choice task:** different options for 8 water service levels, traded-off against changes in bill. Inclusion of "no change" Option A.
- **Follow-ups:** reasons for the responses and validity testing questions
- **Respondent profile:** socio-economic and demographic characteristics

Survey Testing

As part of the design and testing phase, ten cognitive interviews were conducted in September 2022 with recruited customers. The purpose of these interviews was to test customer understanding, the clarity of instructions, and the layout and visual materials, as well as how customers made their choices. This enabled researchers to ensure the survey is fit for purpose prior to fieldwork.

The interviews were conducted online, using Zoom. Questionnaire wording and visual materials, including showcards, were assessed, to check how well they were understood by participants. The ten customers participating in the cognitive interviews covered a broad variety of demographics and were all responsible for paying their water bills.

Overall, the cognitive interviews demonstrated that customers clearly understood the potential areas of service for improvement and the range of investment packages that were presented to them. They found the choice experiments relatively easy and straightforward to complete.

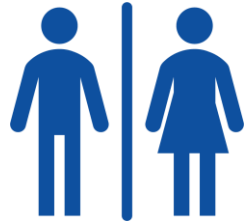
The most substantive change following this testing was to amend the measure used for the Biodiversity measure. This was changed to a “Improvement points per 10,000 population” metric as some of the feedback was that the original Index metric was less easy to comprehend. Some minor changes to the text descriptions and choice card formats were also identified, to improve the survey and materials prior to fieldwork. The final survey attributes and levels are presented in Annex 1

Final Household Results

Based on final household sample of n=588

Who are the respondents?

Total sample size n=588 (online n=487, CAPI n=101)



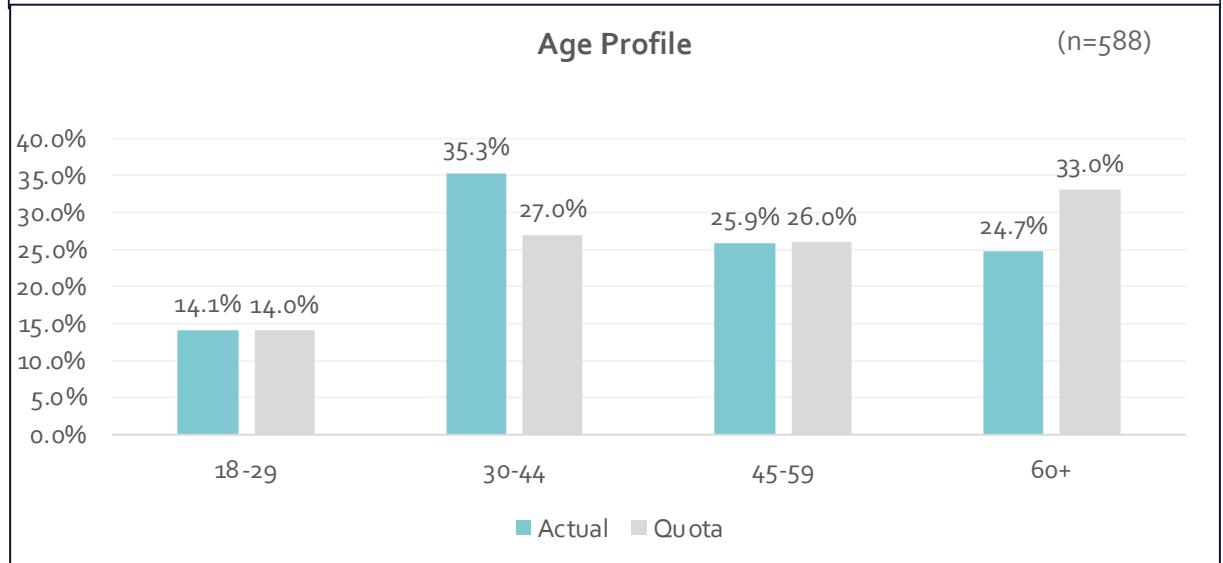
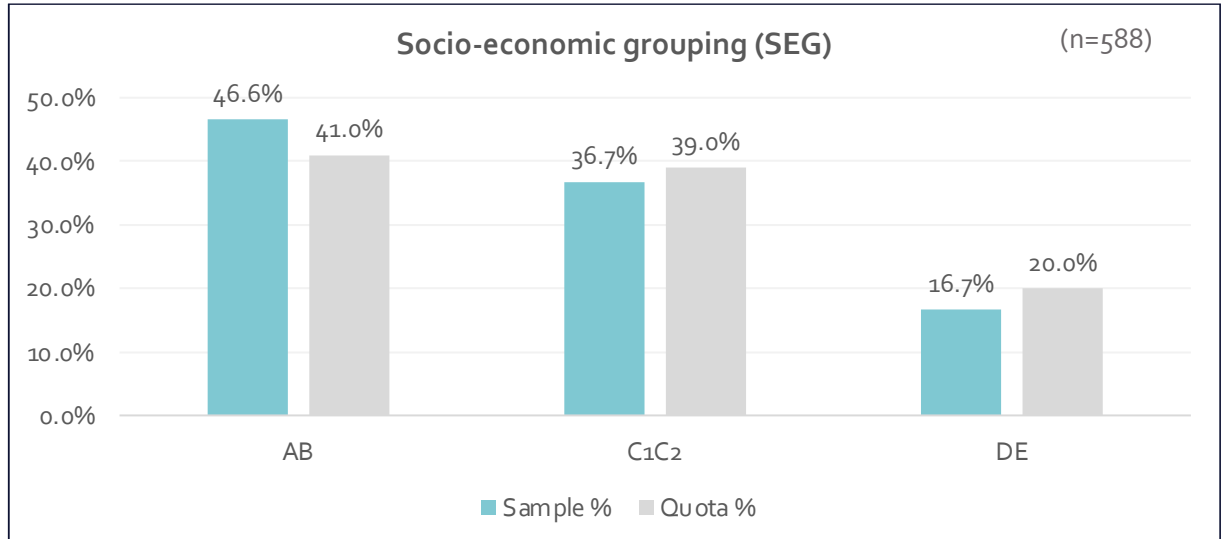
39.6% 60.2%
0.2% other/no response



29% report a disability
in the home



56% households metered &
10% receive help with their bill

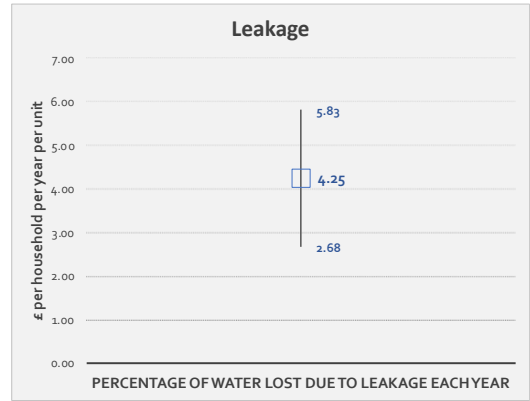


WTP results – Block 1 (Water Service Reliability)

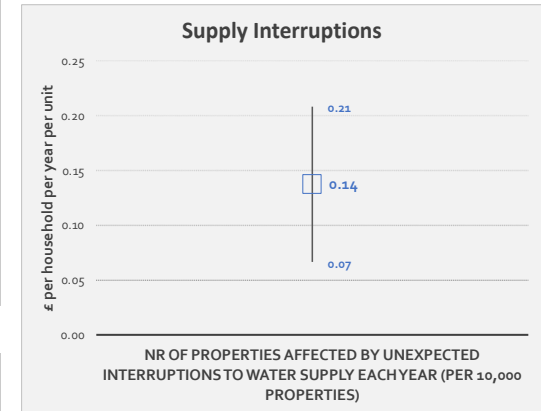
- The final estimates are based on re-weighted sample data. This is to align to the household population quotas for age/gender/SEG.
- All mean households WTP estimates for the Block 1 attributes (Water Service Reliability) are positive with high statistical significance.

Household WTP (£/hh/yr/unit)			
	Mean	St. Error	Units
Leakage	£4.25***	£0.80	1% change
Supply Interruptions	£0.14***	£0.04	1% change
Discolouration	£0.19***	£0.04	1% change
Low Pressure	£0.03***	£0.01	1% change

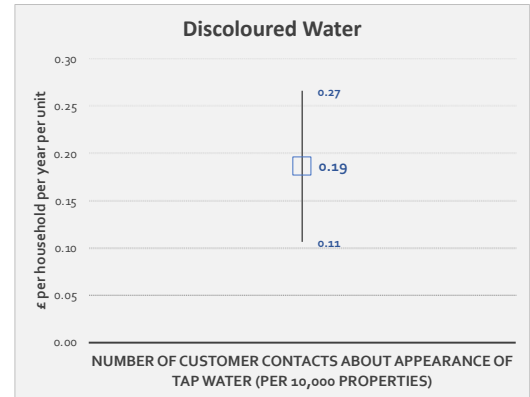
*** Pr>|z|<0.001, ** Pr>|z|<0.01, * Pr>|z|<0.05
N=588



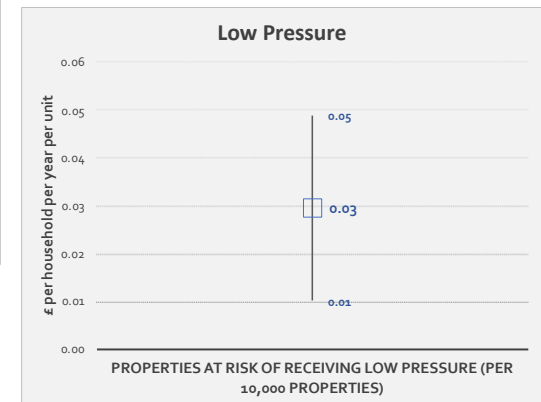
n=588



n=588



n=588



n=588

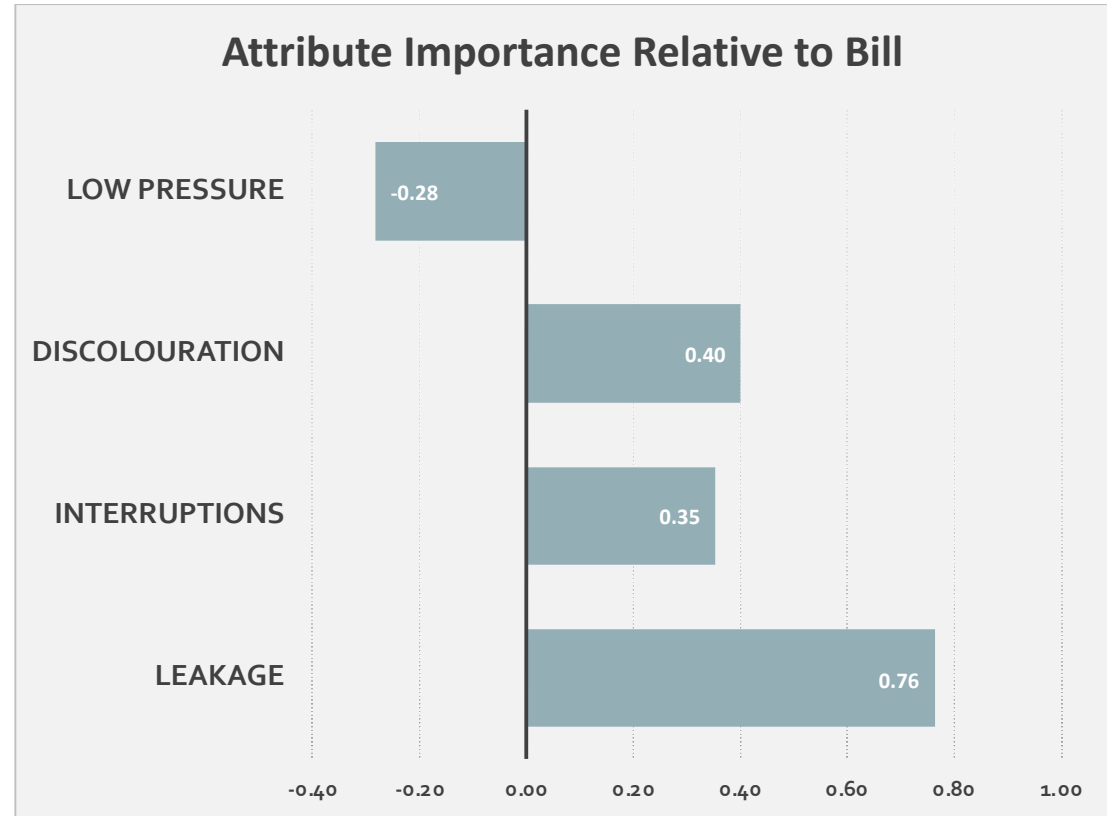
Block 1 - Attribute importance

After seeing the choice cards that generate the data for calculating the WTPs, respondents are asked to rate which attribute influenced their choices from most important to least important.

The chart across shows the relative importance weights for the service attributes compared to the bill change attribute. Positive values mean more important than bill changes and negative values mean less important than bill changes.

For Block 1 we see discolouration, interruptions and leakage all rated higher than bills with leakage rated the highest.

Low pressure was rated the least important attribute.



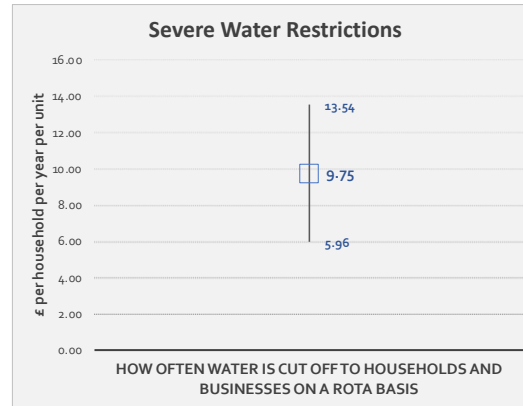
n=588

WTP results – Block 2 (Environment and Customers)

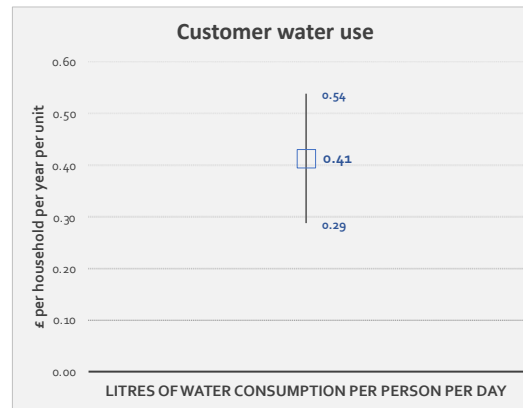
- The final estimates are based on re-weighted sample data. This is to align to the household population quotas for age/gender/SEG.
- All mean WTP estimates for the Block 2 attributes (Customers & Environment) are positive with high statistical significance.

Household WTP (£/hh/yr/unit)			
	Mean	St. Error	Units
Severe Water Restrictions	£9.75***	£1.93	nr per 100 years
Biodiversity	£0.38*	£0.17	Score per 10,000 population
Customer Water Use	£0.41***	£0.07	Litres/person/day
Customer Complaints	£0.48***	£0.11	nr per 10,000 properties

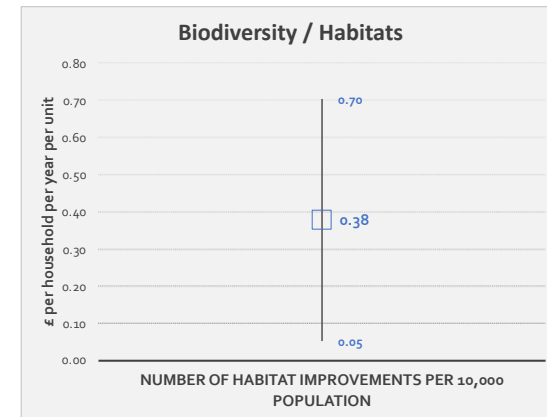
*** Pr>|z|<0.001, ** Pr>|z|<0.01, * Pr>|z|<0.05
N=588



n=588



n=588



n=588



n=588

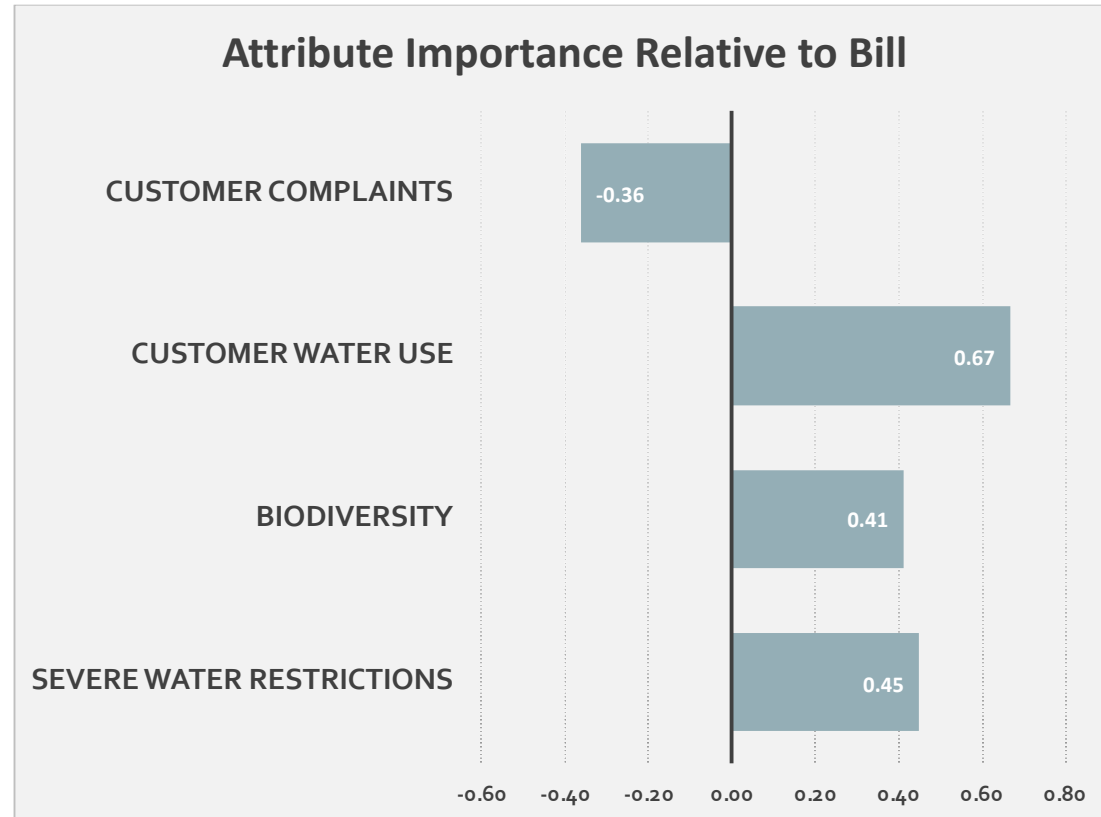
Block 2- Attribute importance

The chart across shows the attribute importance for the choices observed in Block 2.

The chart shows the relative importance weights for the service attributes compared to the bill change attribute. Positive values mean more important than bill changes and negative values mean less important than bill changes.

For Block 2 customer water use was rated the most important, while biodiversity and severe water restrictions were also rated more highly than changes in bills.

Customer complaints was rated the least important attribute to household respondents' choices.



n=588

Secondary attributes

A set of secondary service attributes/improvements were also included in the survey. These attributes – see across – were presented alongside supply interruptions, one of the main service attributes (from block 1). Respondents were asked to rank the importance to them of the 6 service areas/improvements.

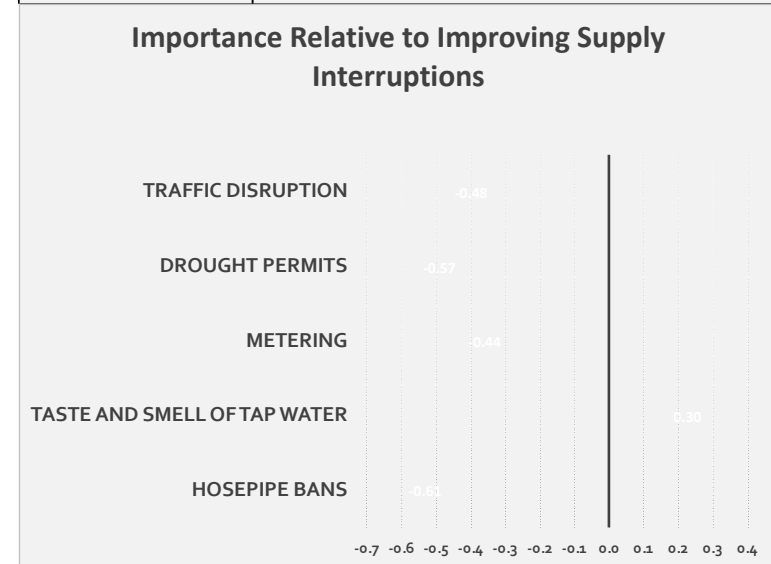
In the analysis supply interruptions is treated as the base attribute, so that importance weights relative to supply interruptions for the other 5 attributes can be calculated. These relative weights can then be combined with the WTP for supply interruptions to infer an estimated WTP for these other 5 attributes.

Importance weights > 0 imply that the attribute was ranked more highly than supply interruptions, whilst weights < 0 imply the opposite.

From the final results we see that household respondents ranked taste and smell improvements as more important than supply interruptions. All other secondary attributes were less important than supply interruptions.

Reducing hosepipe ban and drought permit frequency were seen as least important.

Attribute Name	Target
Hosepipe Bans	Improve current service of Once every 15 years to Once every 20 years
Taste and Smell of Tap Water	Improving current service of 350 customer contacts per year to 260 customer contacts per year
Metering	Increasing household metering from the current 62% of all households to 78% of all households
Drought Permits	Improve current service of Once every 33 years to Once every 50 years
Traffic Disruption	Improve current service of 250 complaints per year to 190 complaints per year
Supply Interruptions	Improve current service of 4000 properties affected each year to 3000 properties affected each year



n=588

Package Exercise – Choice Behaviour

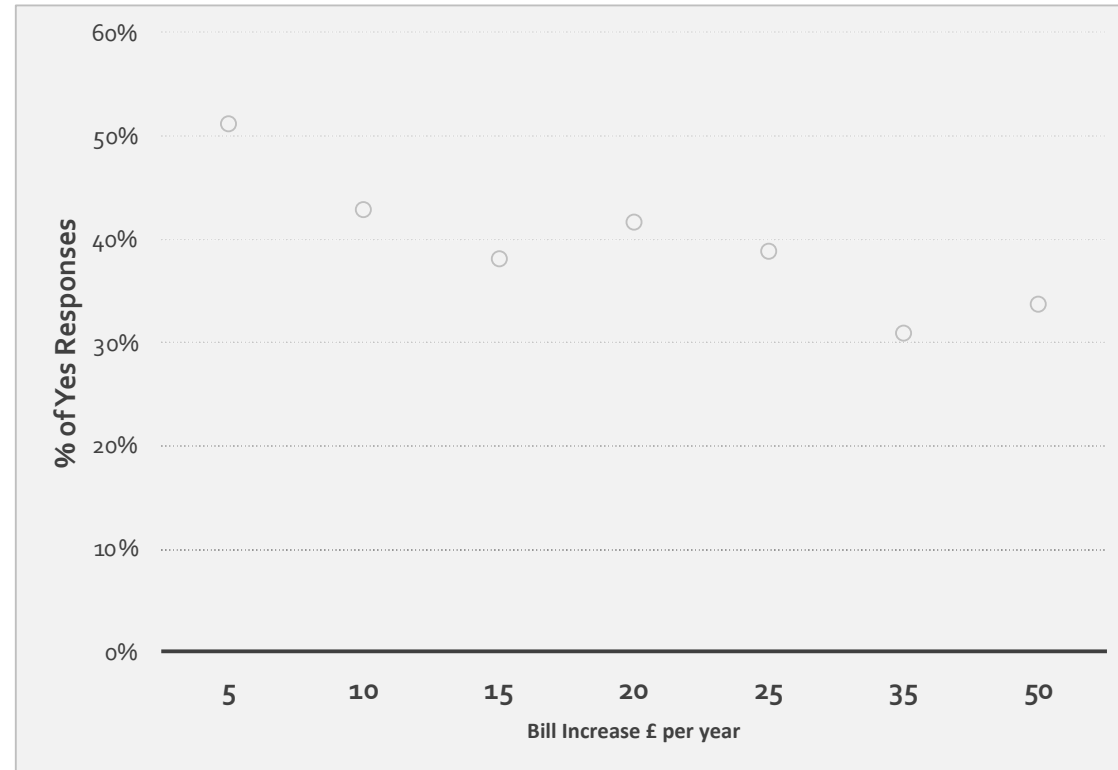
Household respondents were also presented with a final package choice exercise.

This was designed as a Yes/No contingent valuation question. Respondents were presented with a randomised annual bill increase from the values (£5, £10, £15, £20, £35, £50) in exchange for a maximum service improvement across all 8 main attributes.

The purpose of this exercise is to establish the overall WTP of customers for the full package of service improvements. This provides useful information about the limits to overall WTP.

The choice data generated by this exercise is consistent with the expected demand behaviour.

That is, at higher price/bill increases the % of Yes respondents decreases. Demand for the full package of improvement falls for a higher annual bill increase.



n=588

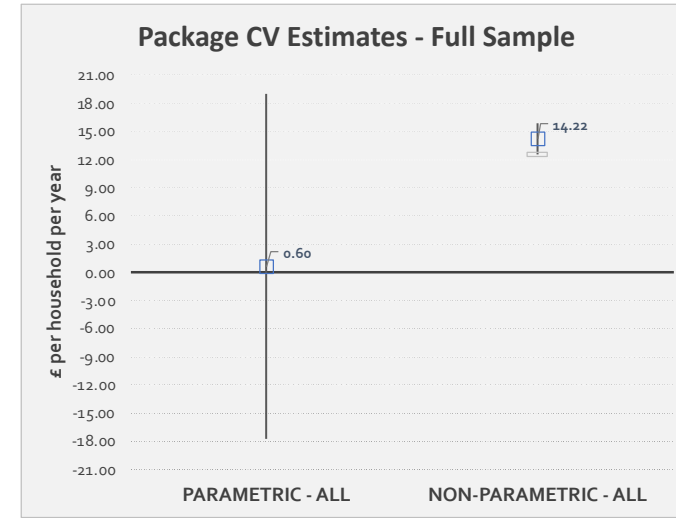
Package Exercise – Estimated Maximum WTP

The charts across present the estimates for the overall household WTP (£/year).

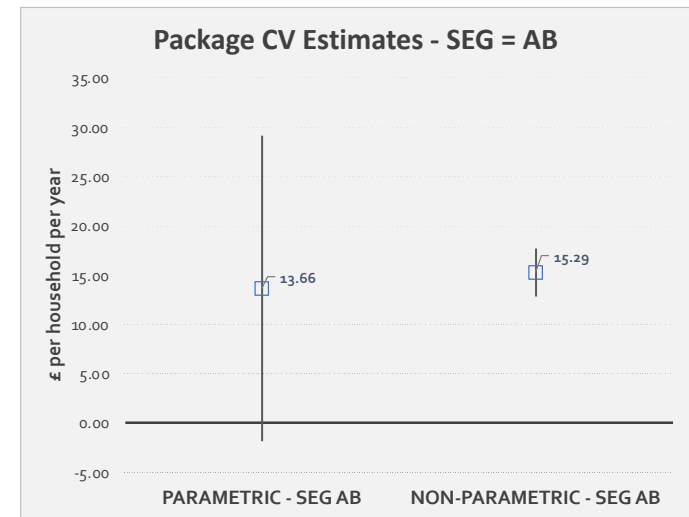
Two estimation approaches were implemented: 1) parametric (logit) models and 2) Non-parametric (Turnbull) estimator.

The non-parametric estimates were better determined and hence would be more reliable. The main WTP for a maximum improvement was **£14.22 per household per year**.

We also tested for differences across groups. We found that for both estimation approaches the WTP of the AB socio-economic group was higher compared to other groups (consistent with other studies that WTP increases with income).



n=588



n=588

Validity testing – main findings

Respondent feedback shows positive interactions with the survey and there is good evidence of respondents trading across the alternative options.

- Consistent feedback on how respondents made their choices and weighed up trade-offs between service levels and bill amounts (slide 19)
- Most customers did not report having difficulties answering the choice questions (71%) (slide 19)
- High levels of trade-off behaviour: Only around half of respondents opted for “no change” in the two blocks of choice exercises, with slightly more trade-offs made in Block 2 (slide 20)
- Some protest type responses driving “no change” choices – around 15% of respondents stated a reason related to water company profits, privatisation, or that others should pay. The level of these responses, though, is within reason for a survey of this nature (slide 20)

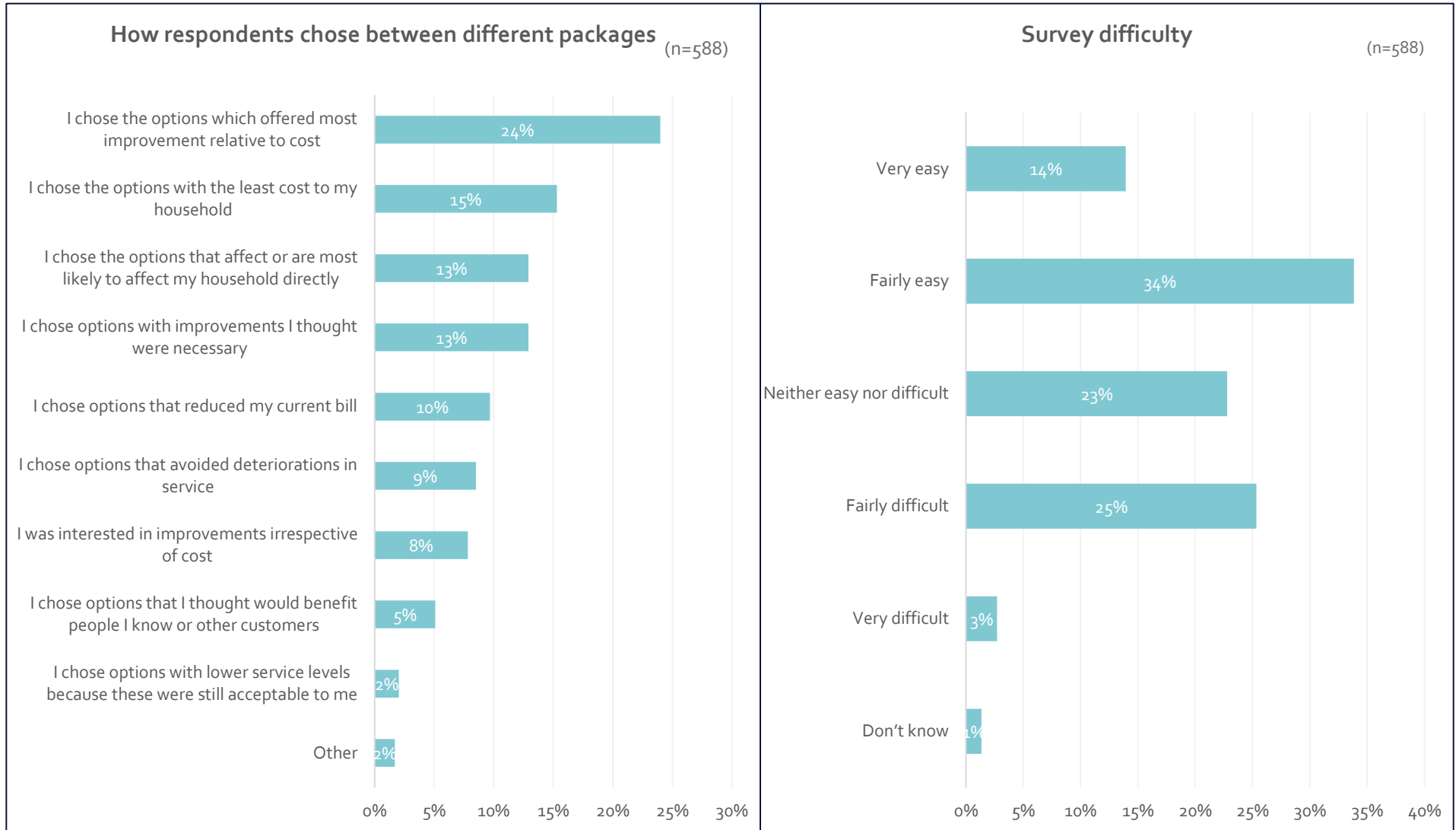
Cost of living and pressures on household budgets

- Around a quarter of respondents reported difficulty in paying monthly bills (either “sometimes” or “always”) (25%). Added to this around half (50%) stated their household financial position had worsened in last 12 months, and a higher proportion (55%) expected it to get worse in next 12 months (slide 22)

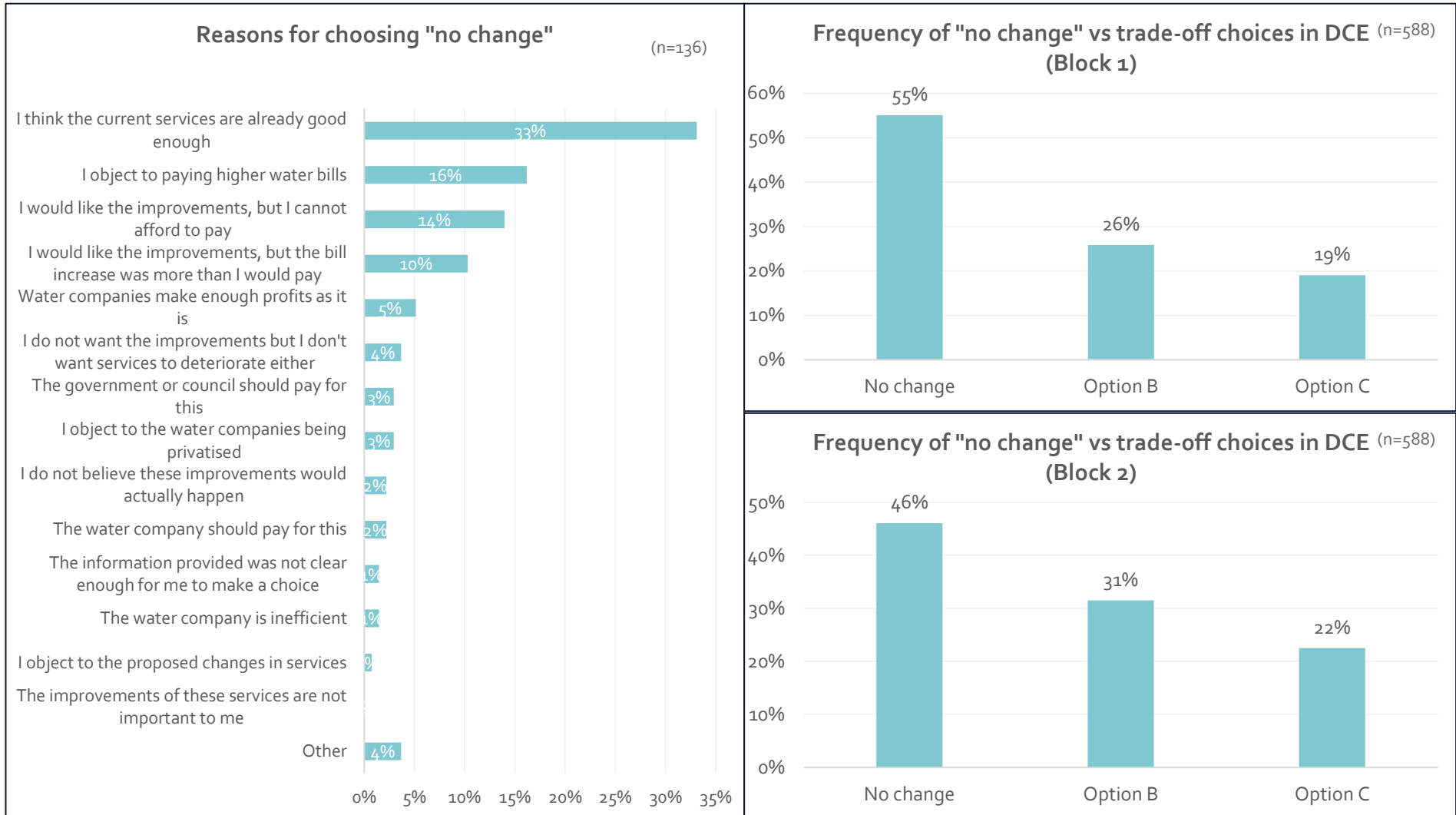
Comparative information

- A majority of customers (58%) said the performance of other companies had little influence on their choices (slide 21)

Validity testing

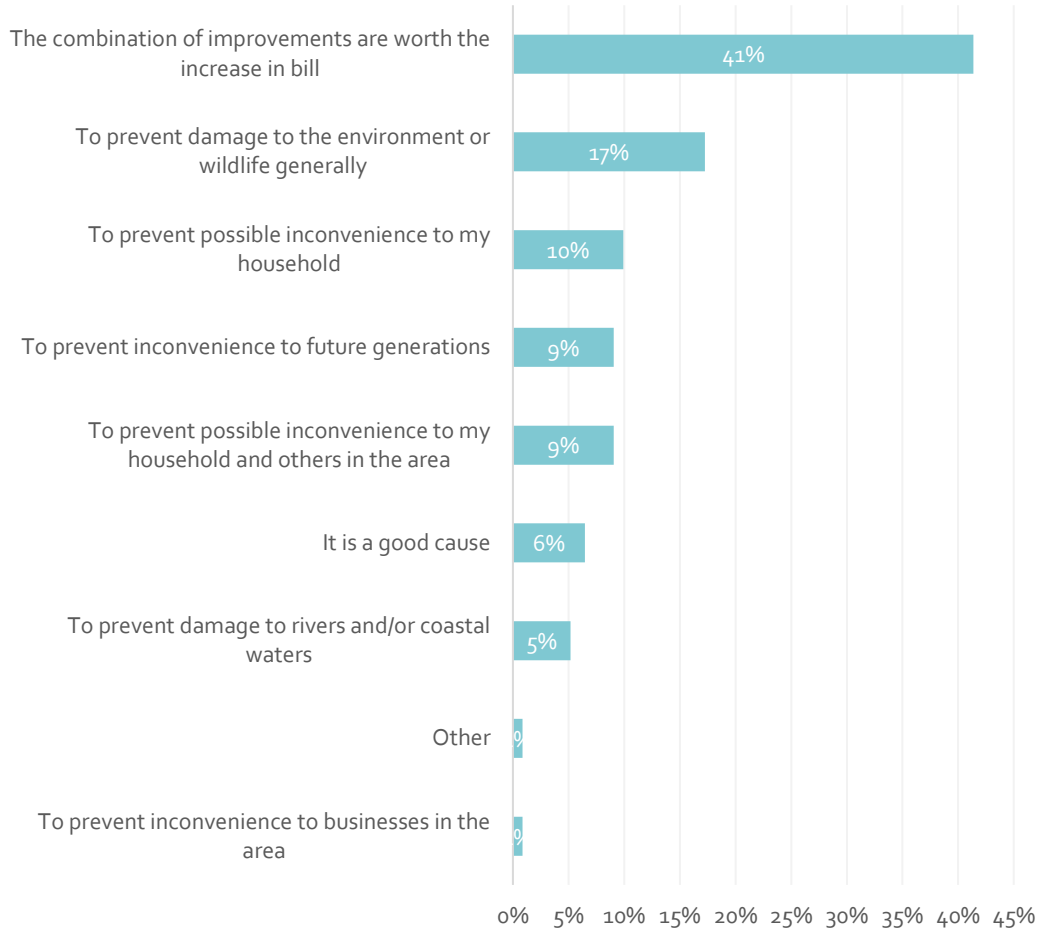


Validity testing

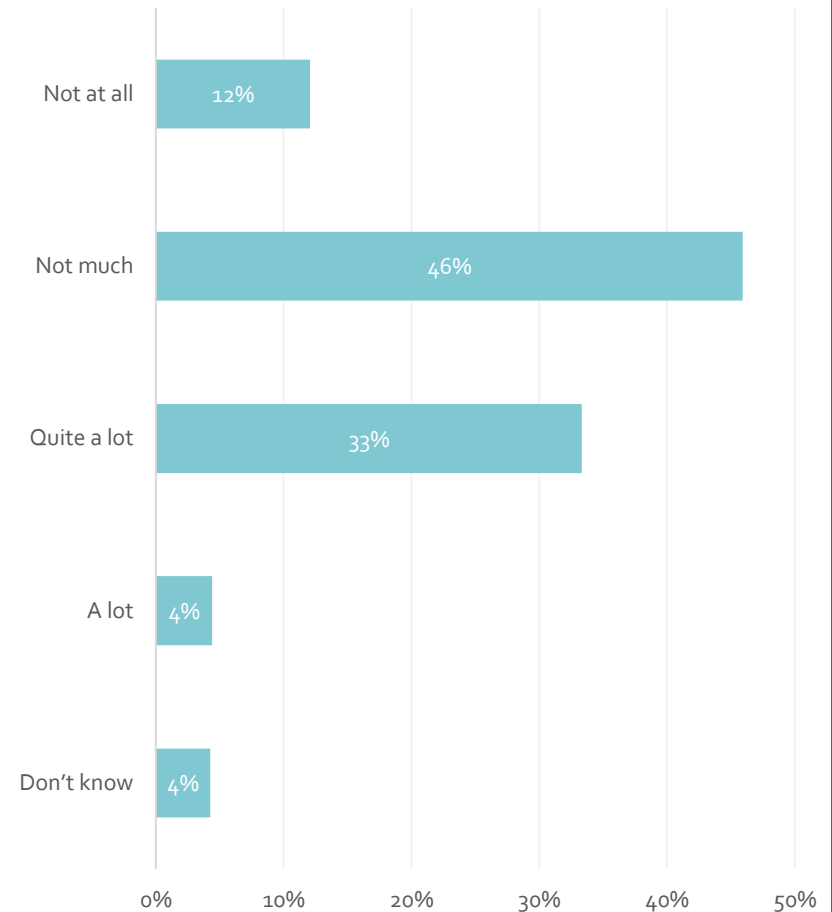


Validity testing

Reasons for choosing to pay for improvements (n=232)



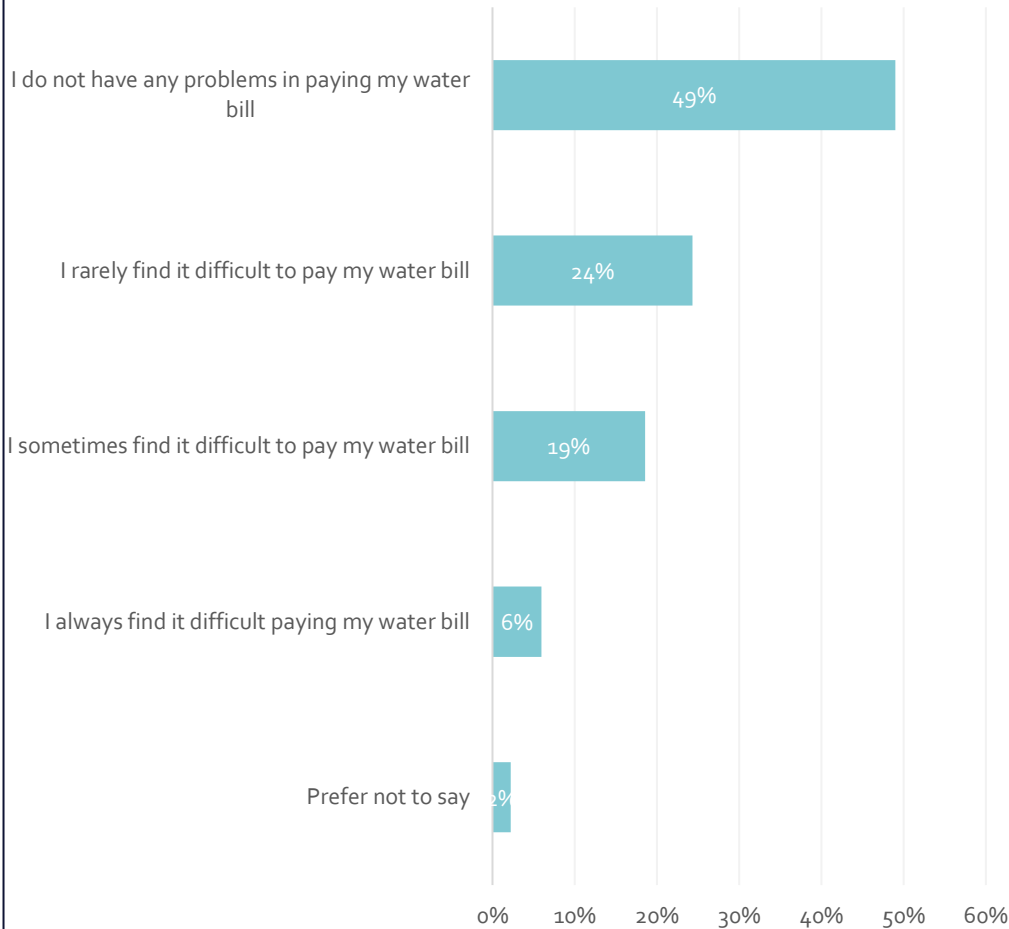
Influence of other company performance on choices (n=588)



Pressures on household budgets

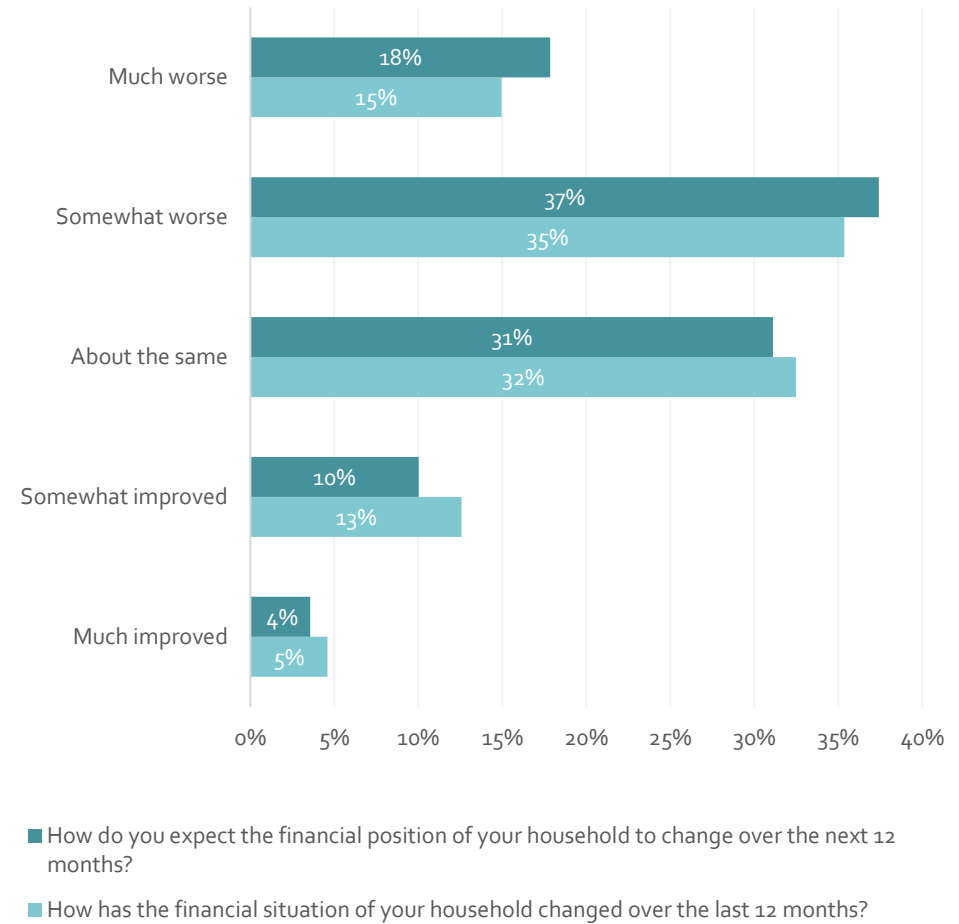
Affordability of water bill

(n=588)



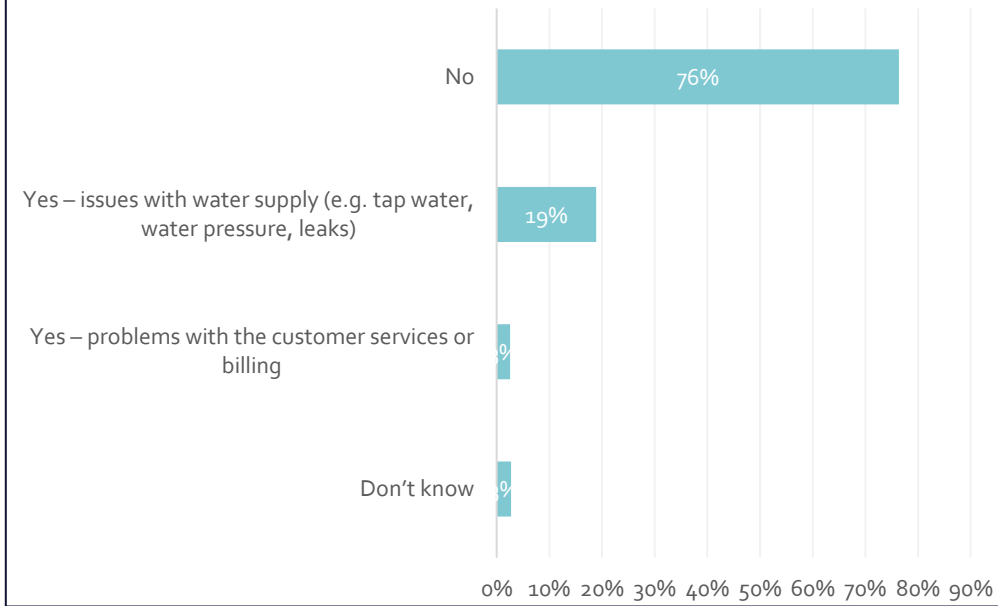
Household financial position

(n=588)

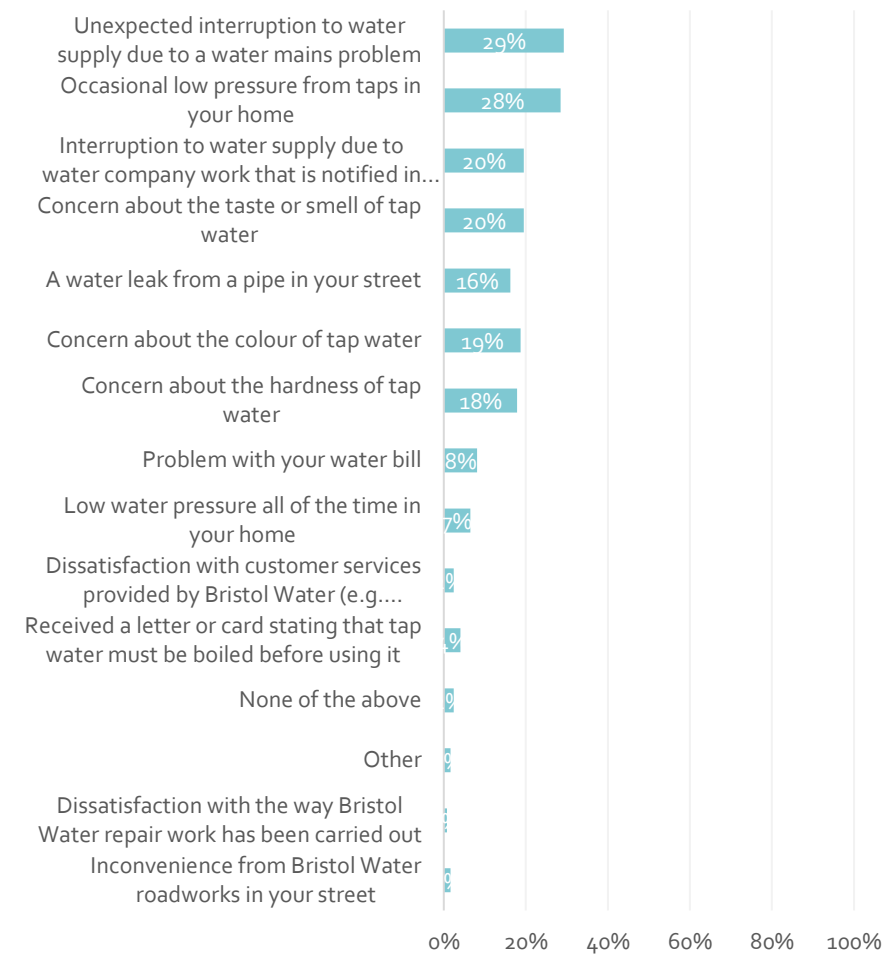


Experience of problems within sample

Experience of problems in the last 5yrs (n=588)



Experience of problems in detail (n=123)



- About 1 in 5 customers reported experiencing a service issue in the last five years.

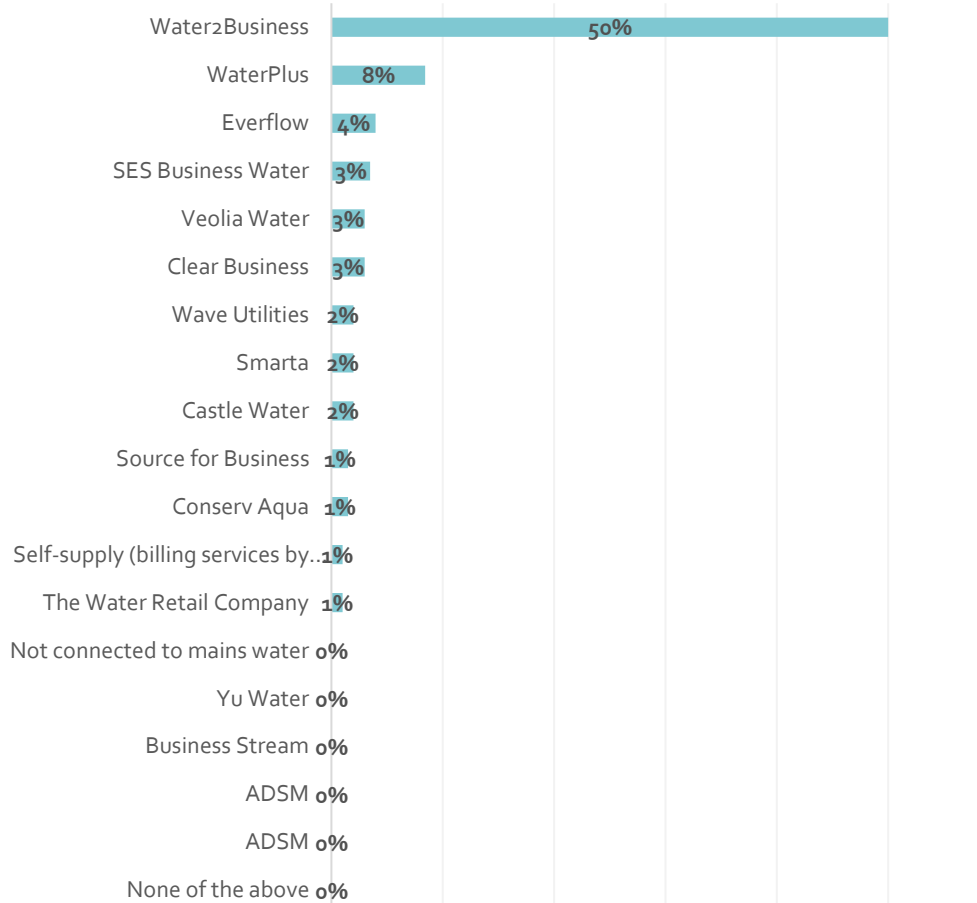
Final Non-Household Results

Based on full sample of n=202

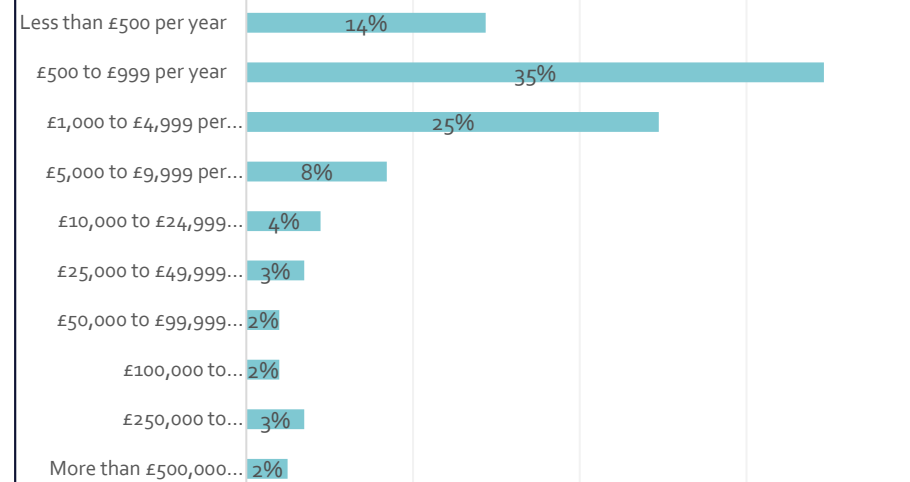
Sample profile

Total sample size n=202 (online n=101, CATI n=101)

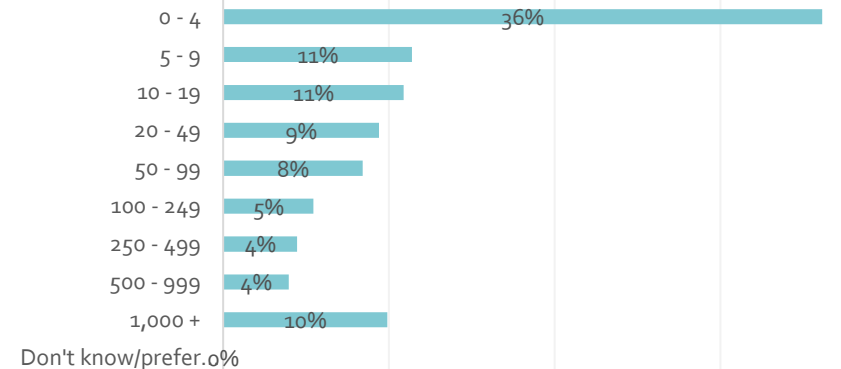
Non-household retailer (n=202)



Water bill (n=202)



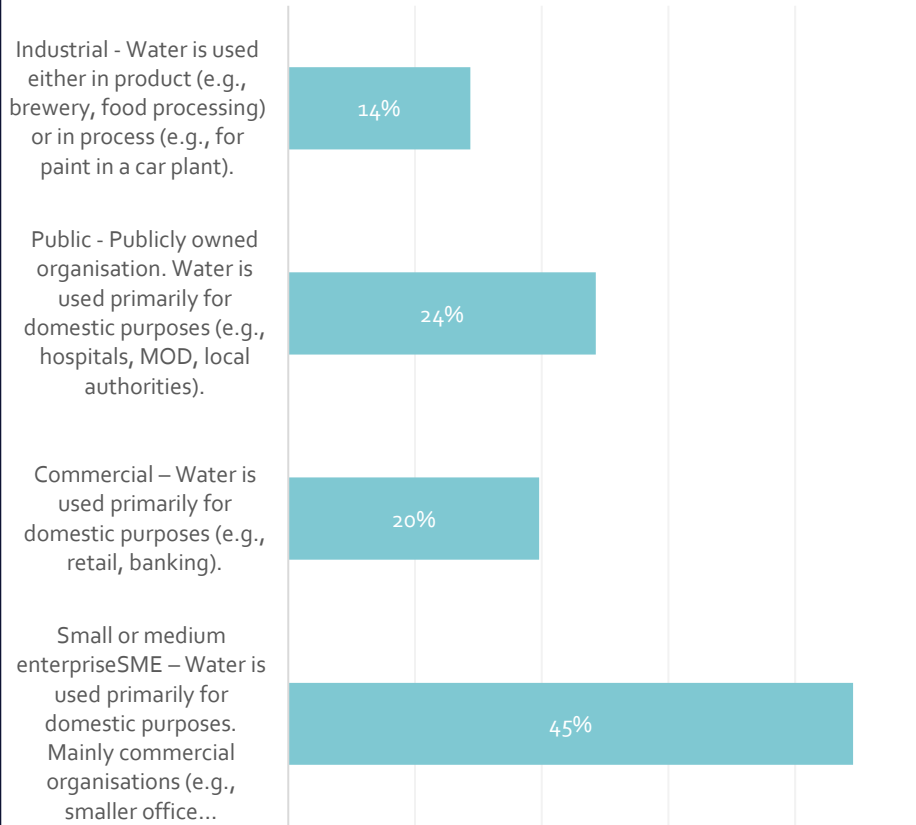
Number of employees (n=202)



Sample profile continued

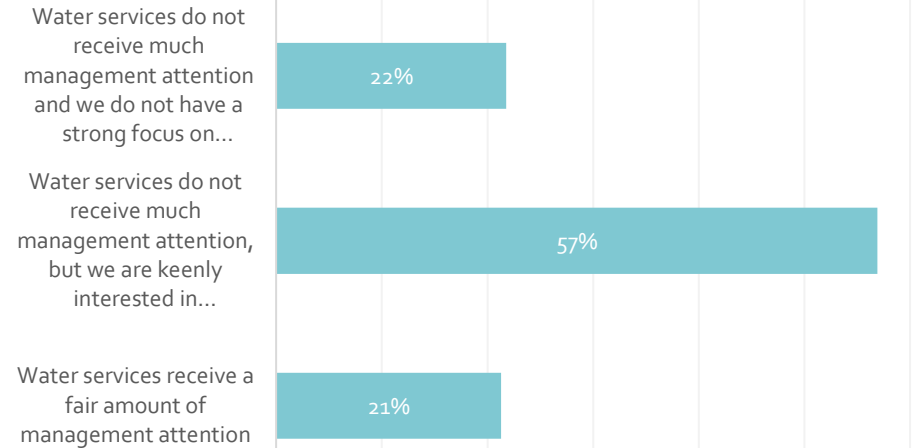
Organisation type and water useage

(n=202)



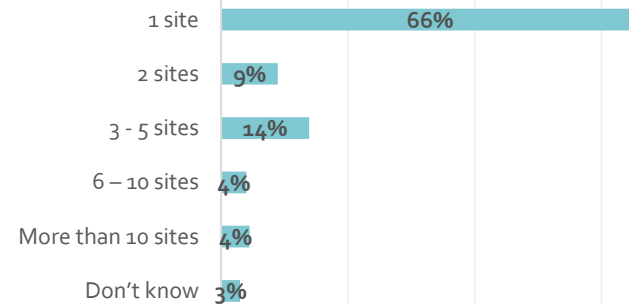
Attitudes to water use and services

(n=202)



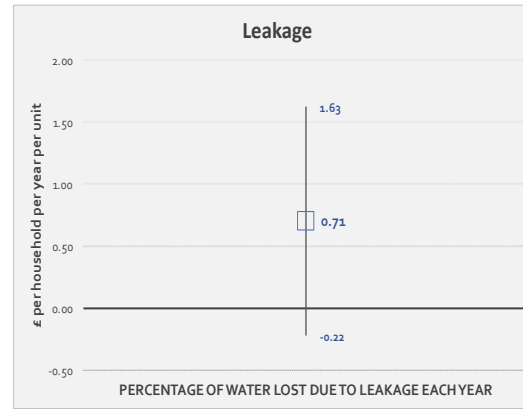
Number of sites

(n=202)

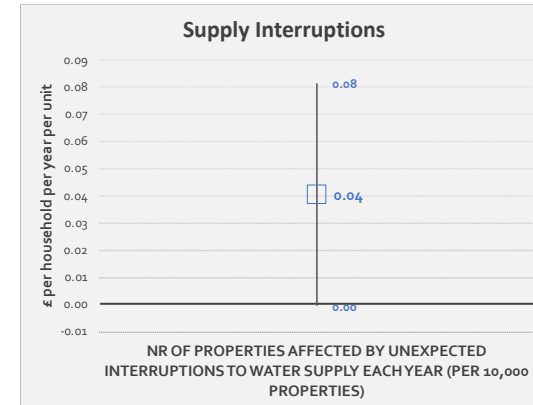


WTP results – Block 1 (Water Service Reliability)

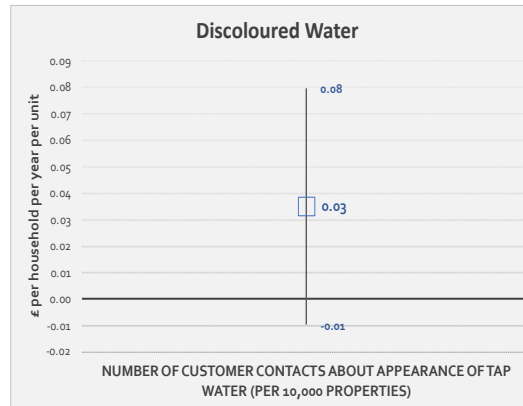
- The non-household WTP estimates are presented as % change in bill values (to reflect the variation in size of non-household bills). The non-household mean WTP estimates for the Block 1 attributes (Water Service Reliability) are all positive (in line with expectation).
- A contrast with the household results is the lack of statistical significance. Only Supply Interruptions show significance close to the 95% confidence level ($p=0.06$). This means we cannot reject the possibility of zero WTP for the other service attributes.
- This lack of significance is attributable to a weakly determined bill coefficient in the estimated models. This suggests a greater variability in the sensitivity of non-households to bill changes in this block.



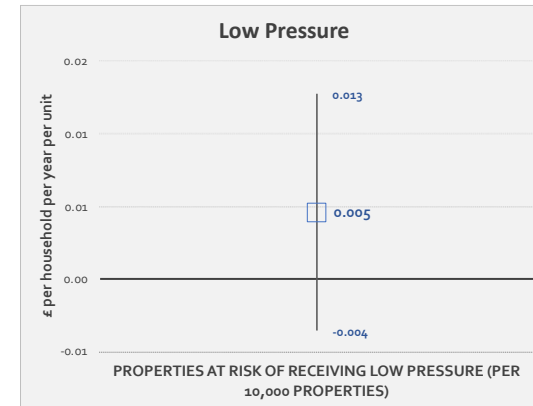
n=202



n=202



n=202



n=202

Non-Household WTP (% Change in Bill/nhh/yr/unit)

	Mean	St. Error	Units
Leakage	0.71	0.47	1% change
Supply Interruptions	0.04*	0.021	1% change
Discolouration	0.035	0.023	1% change
Low Pressure	0.005	0.004	1% change

*** $Pr>|z|<0.01$, ** $Pr>|z|<0.05$, * $Pr>|z|<0.10$
N=202

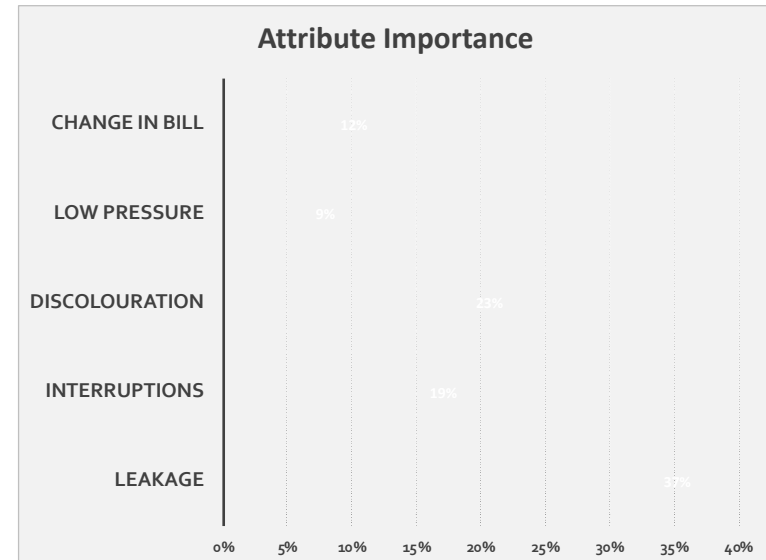
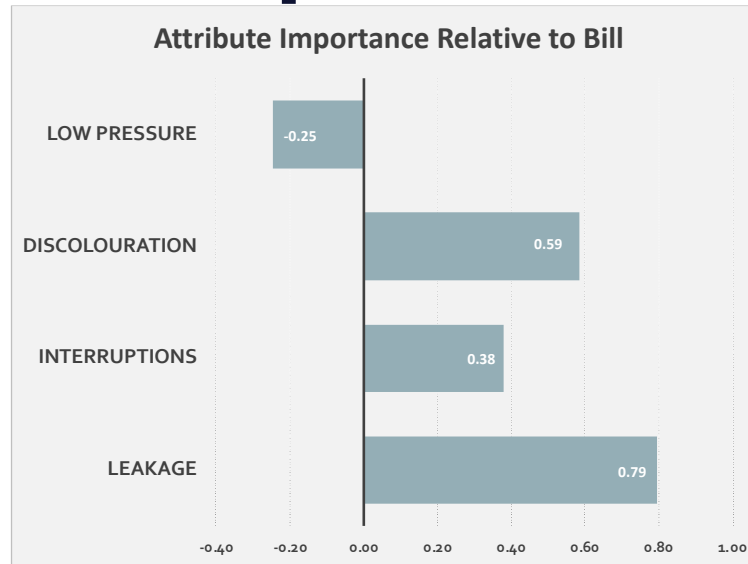
Block 1- Attribute importance

Like households, non-household respondents were asked to rate which attributes influenced their choices from most important to least important.

The chart across shows the relative importance weights for the final non-household data and show strong consistency with the findings for households.

Of further note, analysis of the choice data for non-households confirms less importance attached to the change in bill attribute compared to households.

This provides further context for the lack of statistical significance for the WTP estimates for block 1. The estimated utilities for all the service attributes (except low pressure) were all highly significant, while the change in bill was not.



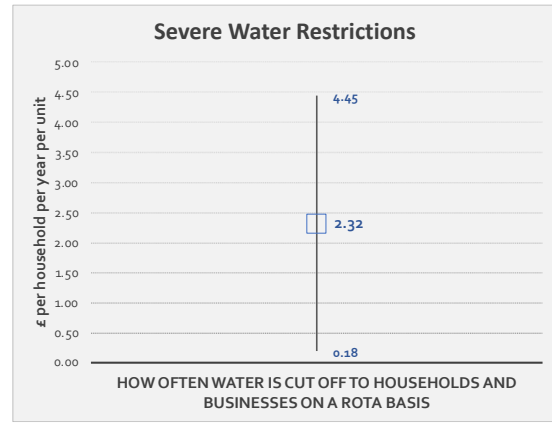
WTP results – Block 2 (Environment and Customers)

- The mean WTP estimates for the Block 2 attributes (Customers & Environment) are positively signed (in line with expectation).
- All the mean WTP estimates in this block are statistically significant at the 95% level except for the biodiversity attribute, meaning we cannot reject zero WTP values for this attribute for non-households.
- This improvement in statistical precision confirms the benefit of the additional CATI sample.

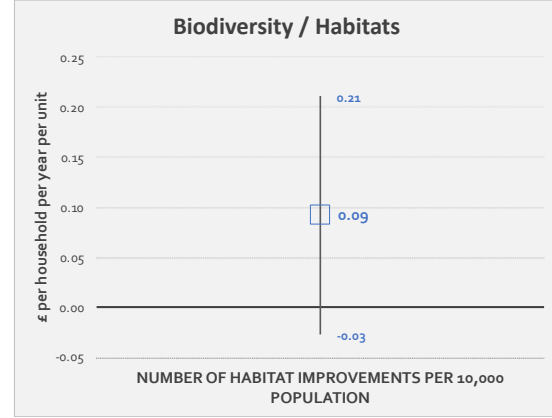
Non-Household WTP (% change in bill/nhh/yr/unit)

	Mean	St. Error	Units
Severe Water Restrictions	2.32**	1.09	nr per 100 years
Biodiversity	0.09	0.06	Score per 10,000 population
Customer Water Use	0.07**	0.03	Litres/person/day
Customer Complaints	0.11**	0.05	nr per 10,000 properties

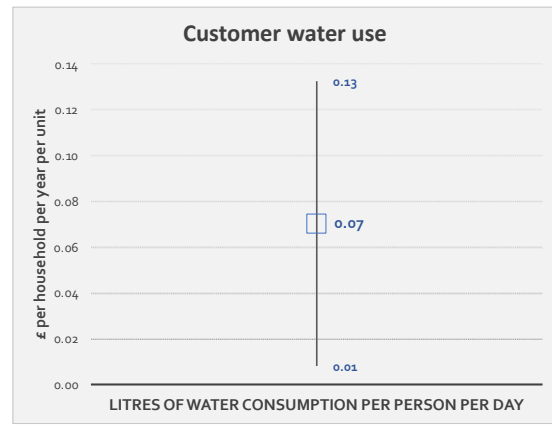
N=*** Pr>|z|<0.01, ** Pr>|z|<0.05, * Pr>|z|<0.10
202



n=202



n=202



n=202



n=202

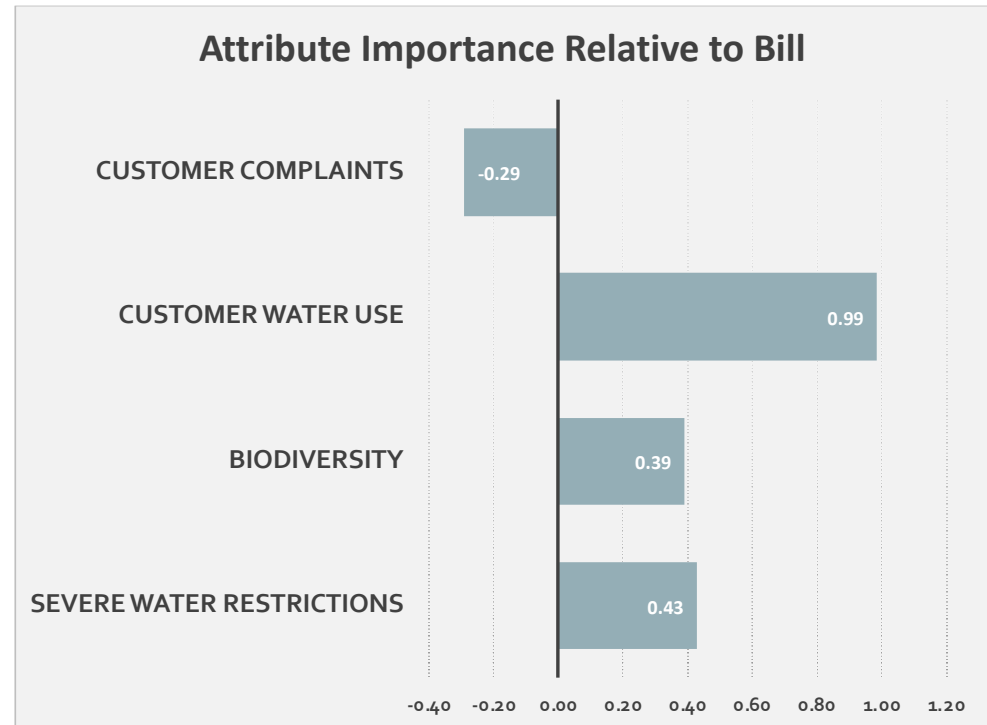
Block 2- Attribute importance

The chart across shows the attribute importance for the choices observed in Block 2.

For Block 2 customer water use and severe water restrictions are rated as being most important compared to changes in bills.

The influence of customer complaints were rated as less important than changes in bill.

Overall, in this block there was evidence of more sensitivity to the bill cost attribute (which explains the stronger significance for the estimated WTPs).



Secondary attributes

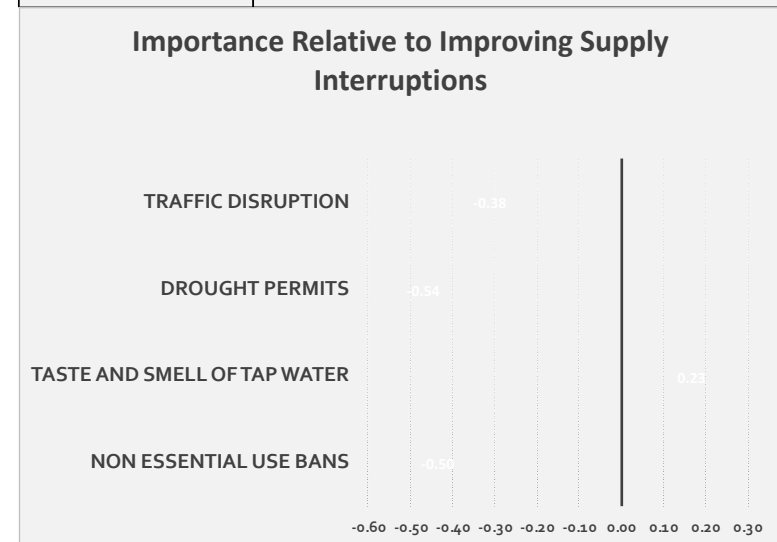
A set of secondary service attributes/improvements were also included in the non-household survey. Household metering is excluded, and non-essential use bans were presented instead of hosepipe bans.

Again, in the analysis supply interruptions is treated as the base attribute, so that importance weights relative to supply interruptions for the other 4 attributes can be calculated.

Importance weights > 0 imply that the attribute was ranked more highly than supply interruptions, whilst weights < 0 imply the opposite.

From the final results we see that only taste and smell of tap water was rated more highly than supply interruptions.

Attribute Name	Target
Non Essential Use Bans	Improve current service of Once every 33 years to Once every 45 years
Taste and Smell of Tap Water	Improving current service of 350 customer contacts per year to 260 customer contacts per year
Drought Permits	Improve current service of Once every 33 years to Once every 50 years
Traffic Disruption	Improve current service of 250 complaints per year to 190 complaints per year
Supply Interruptions	Improve current service of 4000 properties affected each year to 3000 properties affected each year



Package Exercise – Choice Behaviour

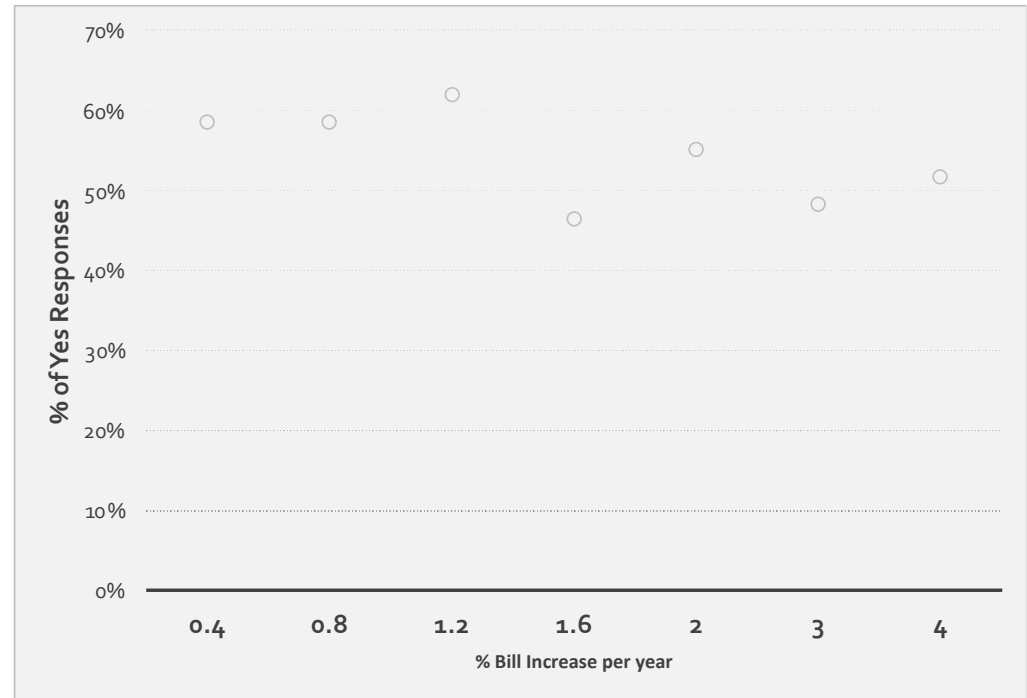
Non-household respondents were also presented with a final package choice exercise.

Respondents were presented with a randomised % annual bill increase from the values (0.4%, 0.8%, 1.2%, 1.6%, 2%, 3%, 4%) in exchange for a maximum service improvement across all 8 main attributes.

The purpose of this exercise is to establish the overall WTP of customers for the full package of service improvements. This provides useful information about the limits to overall WTP.

The choice data generated by this exercise is less consistent with the expected demand behaviour compared to households.

That is, at higher price/bill increases the % of Yes respondents decreases, but less so compared to households. This is again indicative of a lower sensitivity from business customers to water price changes.



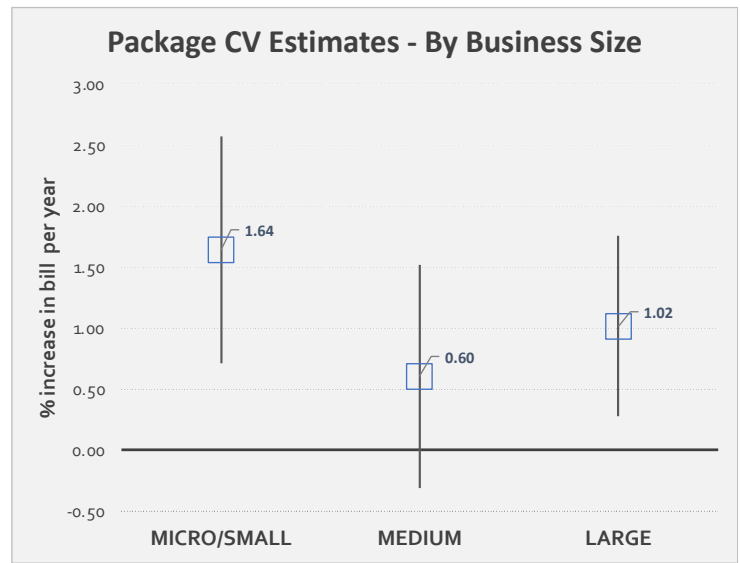
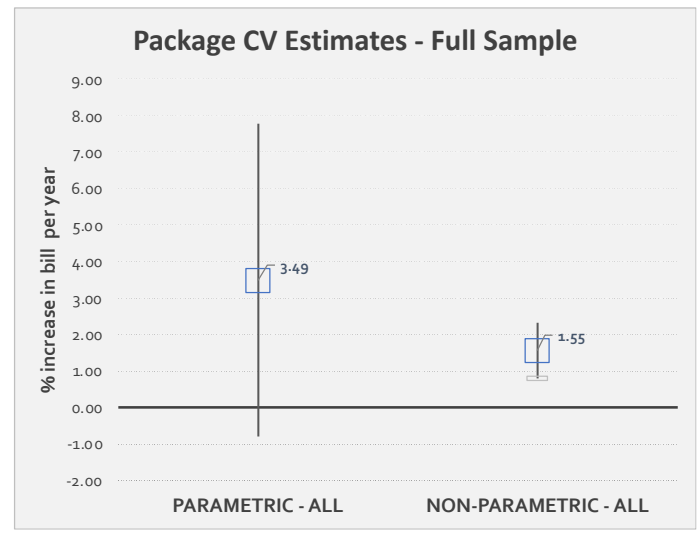
Package Exercise – Estimated Maximum WTP

The charts across present the estimates for the overall non-household WTP (% increase /year).

Two estimation approaches were implemented: 1) parametric (logit) models and 2) Non-parametric (Turnbull) estimator.

Like households, the non-parametric estimates were better determined and hence would be more reliable. The main WTP for a maximum improvement was **1.55% per NON-household per year.**

We also tested for differences across groups and found the strongest differences were by business size. The WTP for micro/small businesses was higher compared to medium and large businesses.



Validity testing

For non-households we observe similar findings to households, except on protest responses and comparative information:

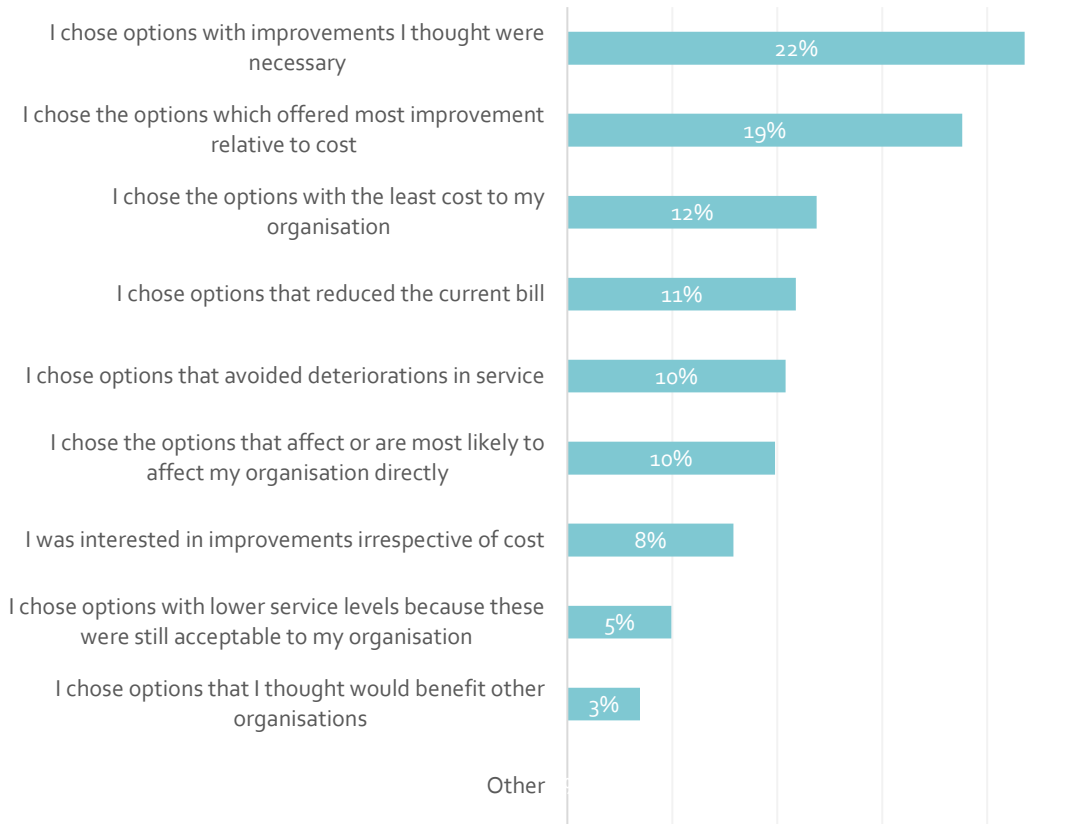
- Consistent feedback on how respondents made their choices and weighed up trade-offs between service levels and bill amounts (slide 35)
- Many more respondents reported the survey was easy 51% (either “very easy” or “fairly easy”) than those who reported the survey was difficult 24% (either “very difficult” or “fairly difficult” (slide 35)
- High levels of trade-off behaviour: No more than half of respondents opted for “no change” in the two blocks of choice exercises, with slightly more trade-offs made in Block 2 (slide 36)
- More NHH protest type responses driving “no change” choice than HHs – around 15% of respondents stated a reason related to water company profits, inefficiency, or that others should pay (slide 36). This may be a factor behind the lack of WTP significance in the DCE choice blocks.

Comparative information

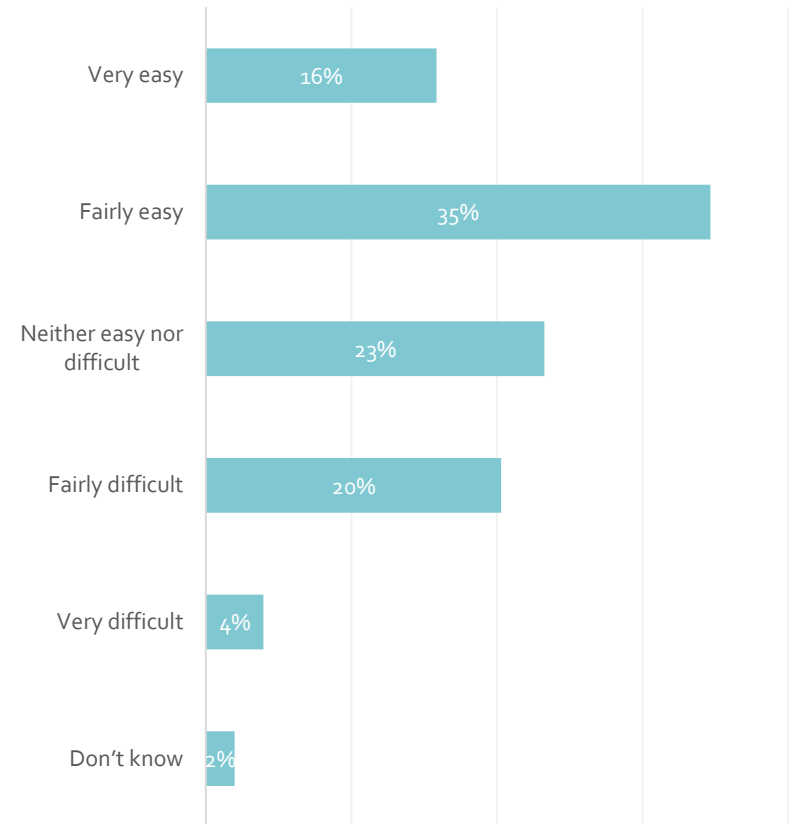
- More so than households, non-household customers (45%) were influenced “a lot” or “quite a lot” by information provided on the performance of other companies when making decisions (slide 37)

Validity testing

How respondents chose between different packages (n=202)

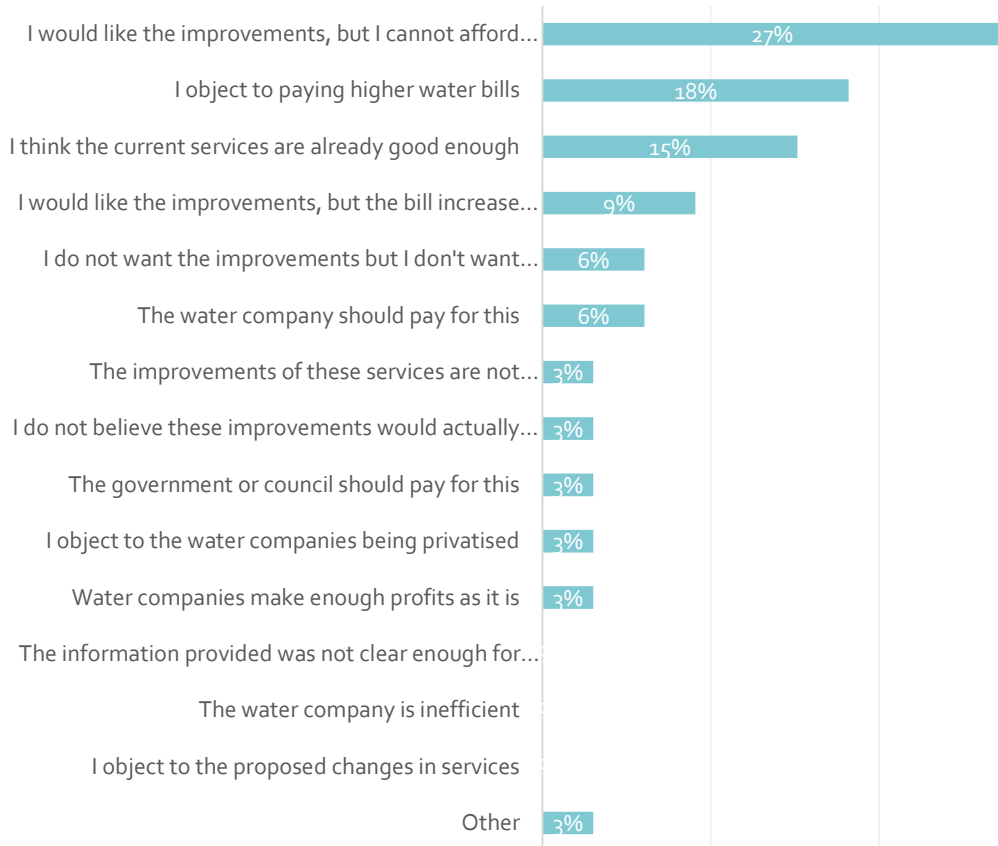


Survey difficulty (n=202)

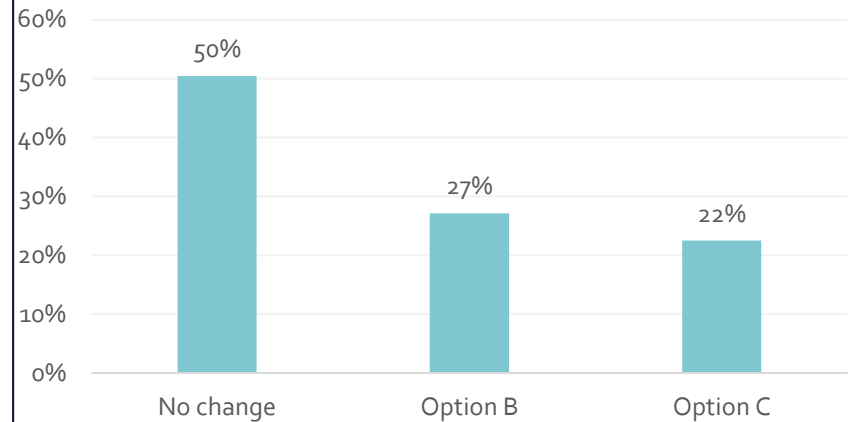


Validity testing

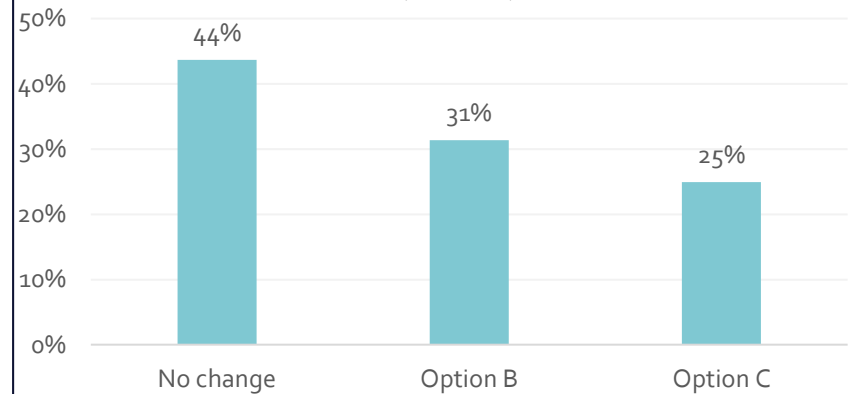
Reasons for mostly choosing "no change" (n=33)



Frequency of "no change" vs trade-off choices in DCE (Block 1) (n=202)

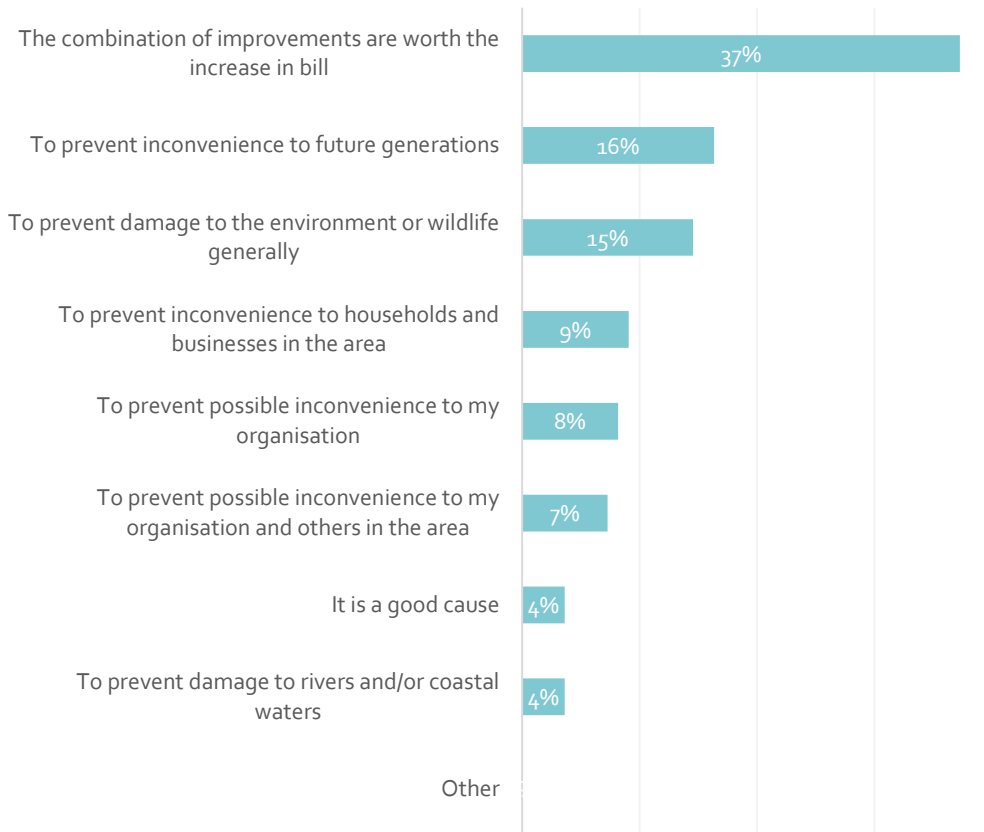


Frequency of "no change" vs trade-off choices in DCE (Block 2) (n=202)

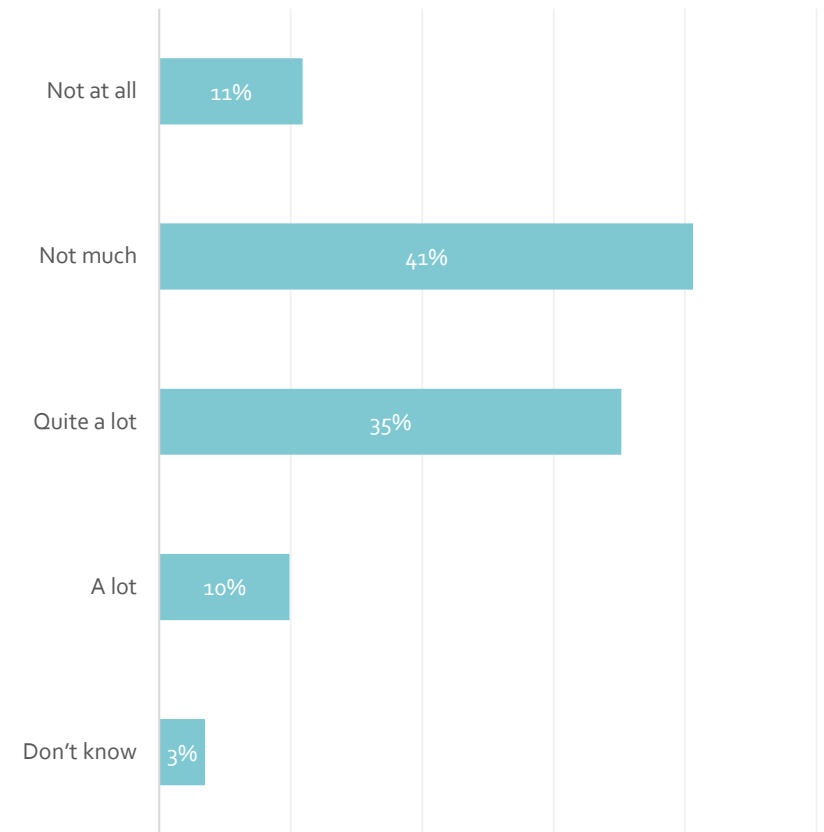


Validity testing

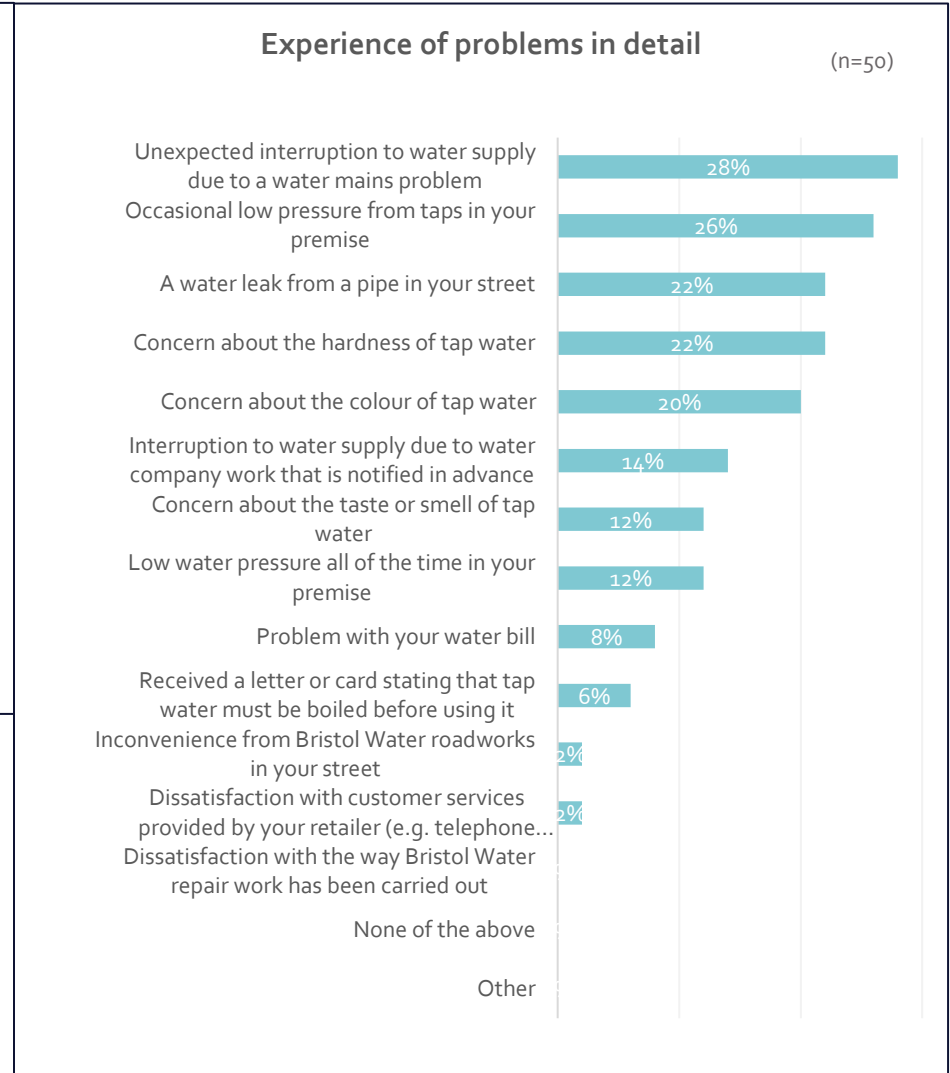
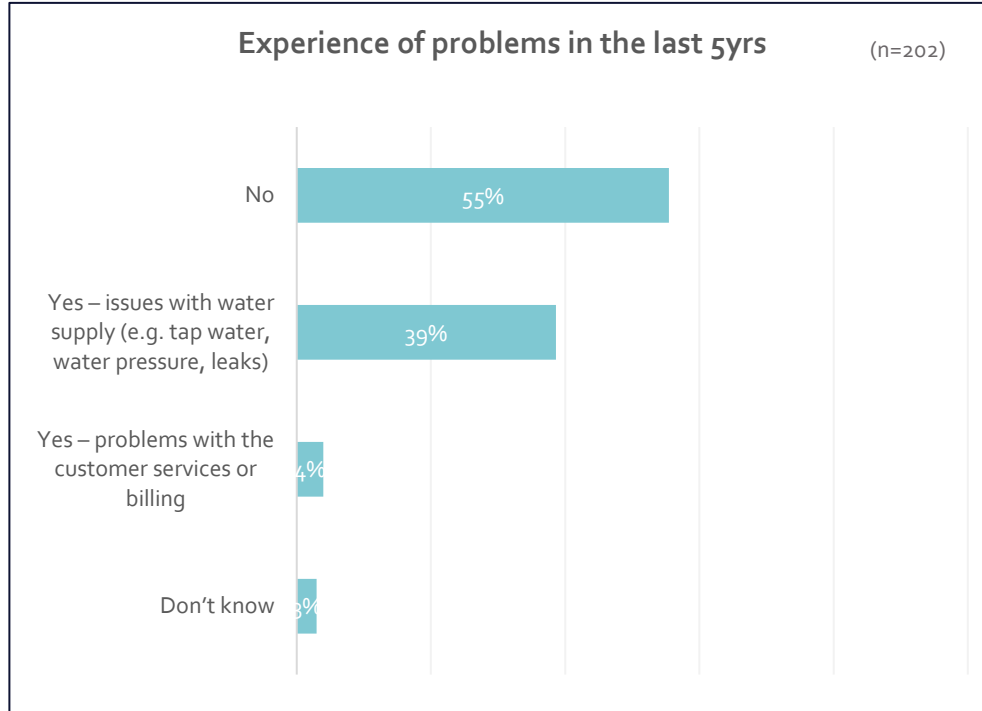
Reasons for choosing to pay for improvements (n=110)



Influence of other company performance on choices (n=202)



Experience of problems within sample



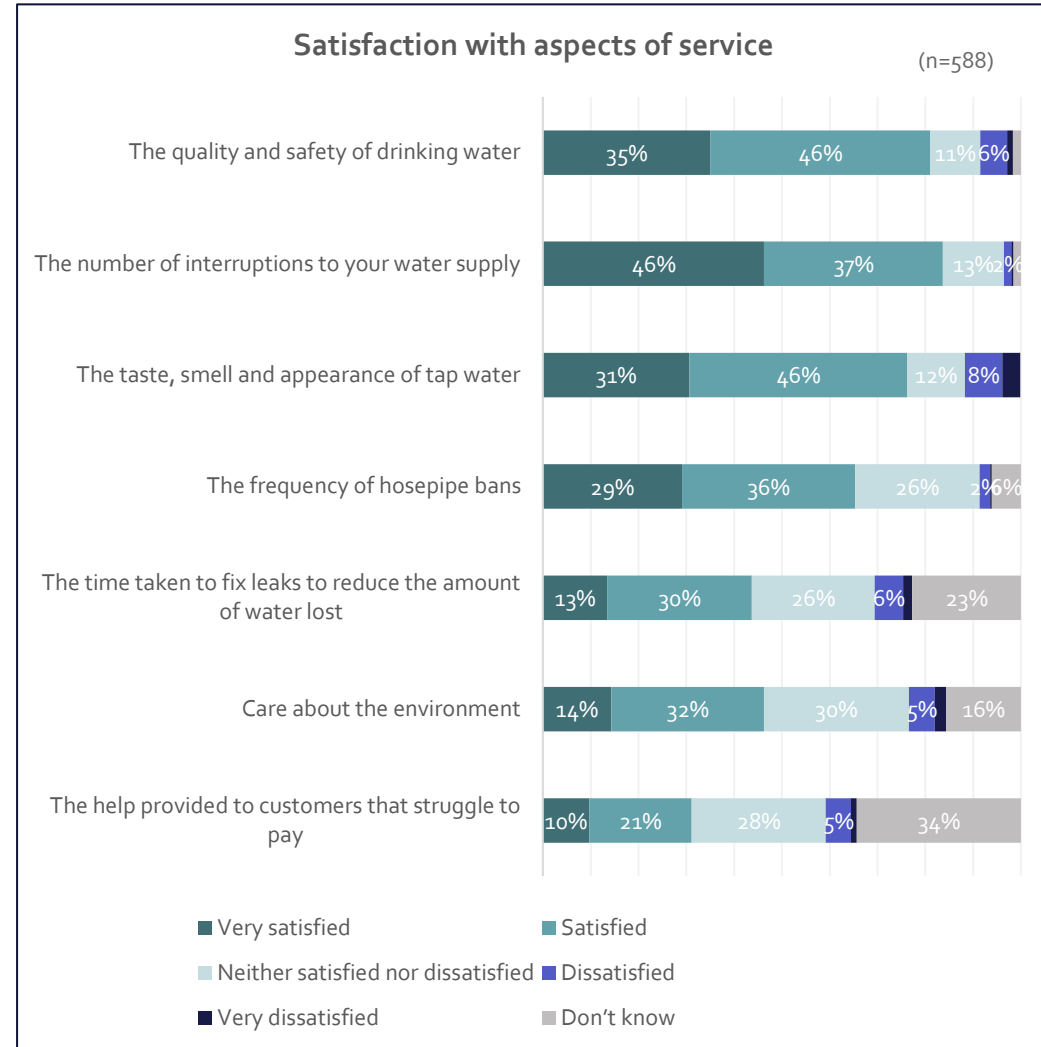
- More than 2 in 5 customers had experienced a problem in the last five years, double the rate reported by household customers.

Supplemental Household results

- Satisfaction with services
- Importance of service areas
- Rating of current performance
- Priorities for improvement

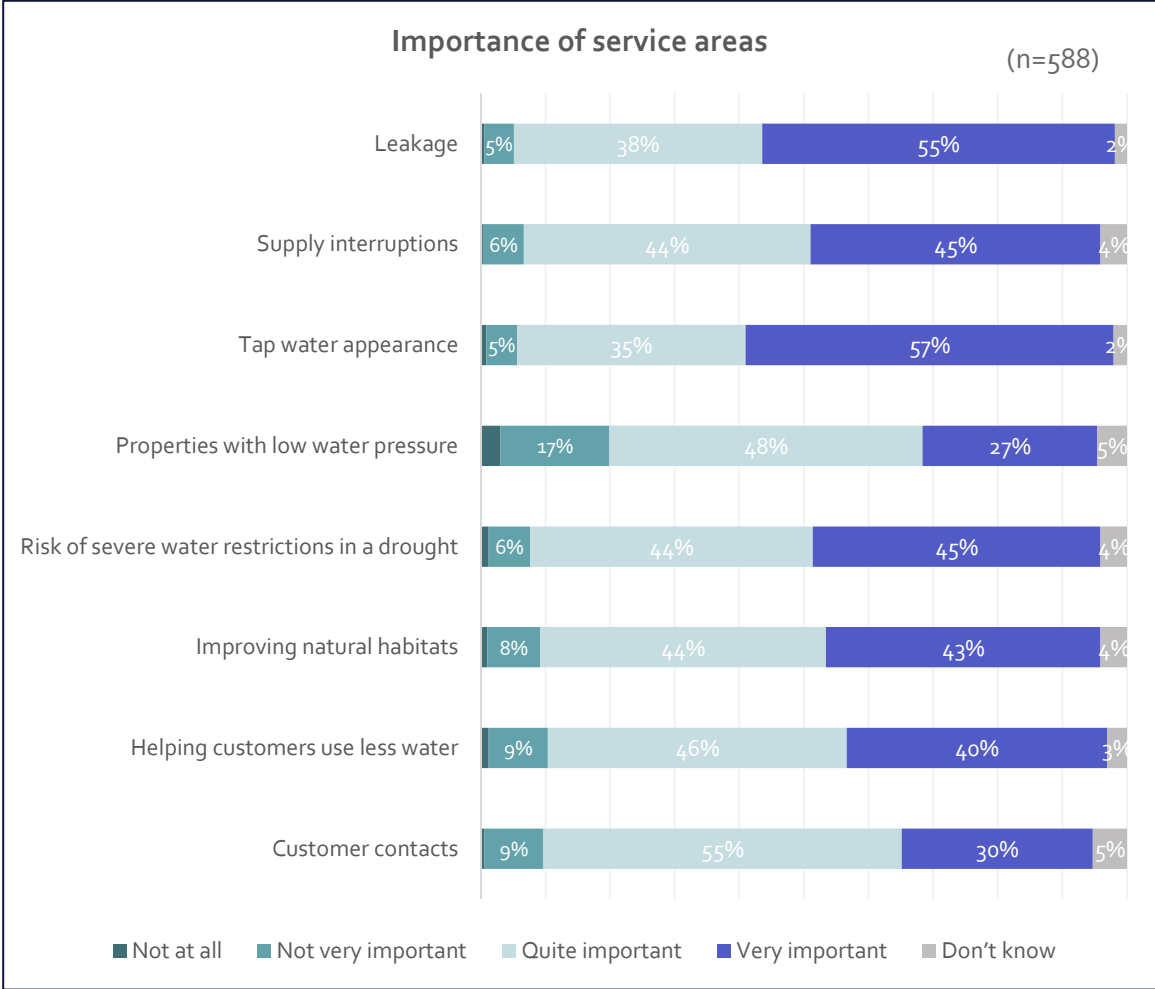
Satisfaction with service areas – Household

- Customers are most satisfied with the number of supply interruptions and the quality of drinking water.
- There is more uncertainty of satisfaction around the time taken to fix leaks, care about the environment and financial support for those struggling to pay.
- Dissatisfaction is generally low, with the highest share relating to the taste, smell and appearance of tap water (8%).



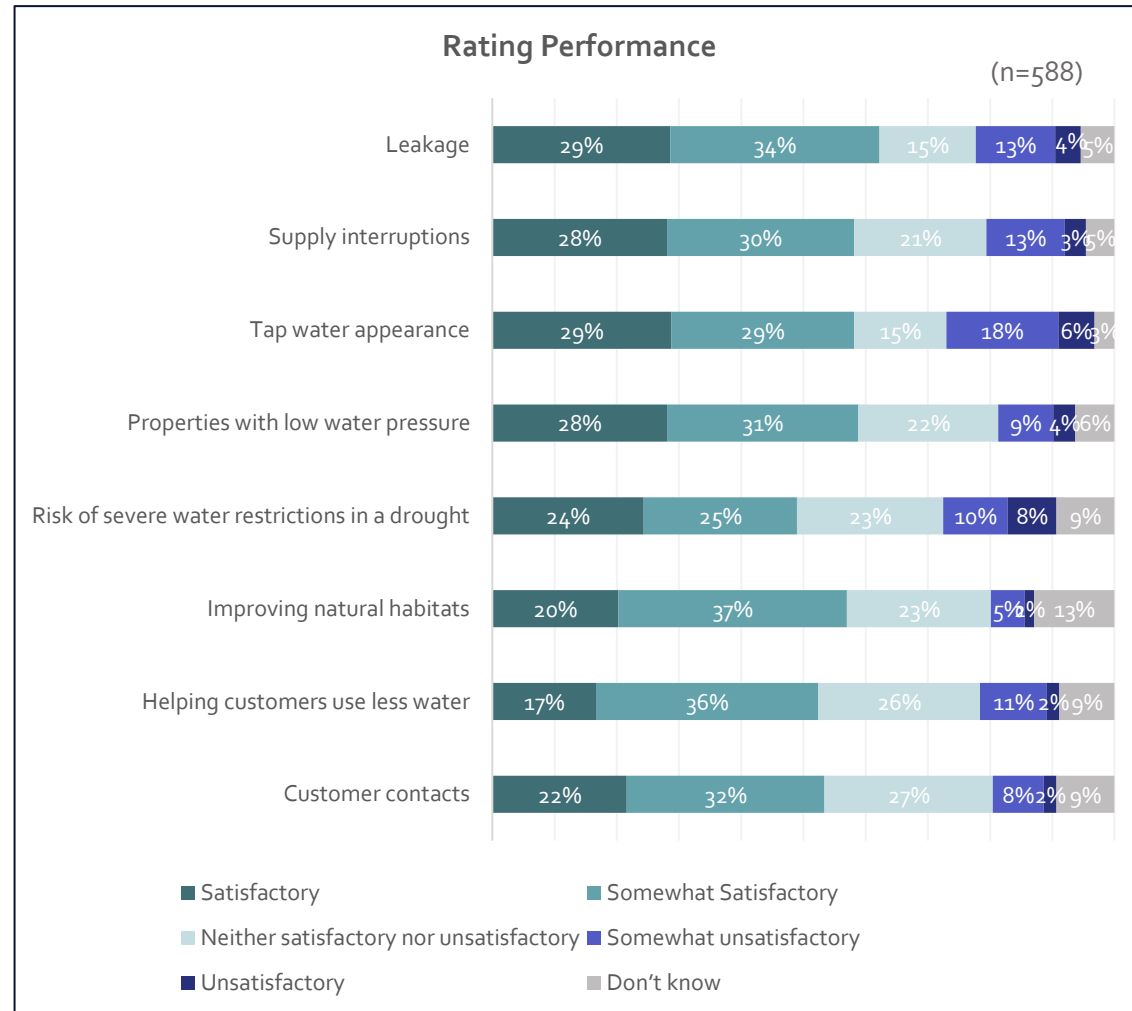
Importance of service areas – Household

- Around 80-90% of customers found all the service areas “Very important” or “Quite important”.
- Leakage was most important (93%), closely followed by the taste, smell and appearance of tap water (92%) and supply interruptions (89%)
- Properties with low water pressure was the least important service area (75%)



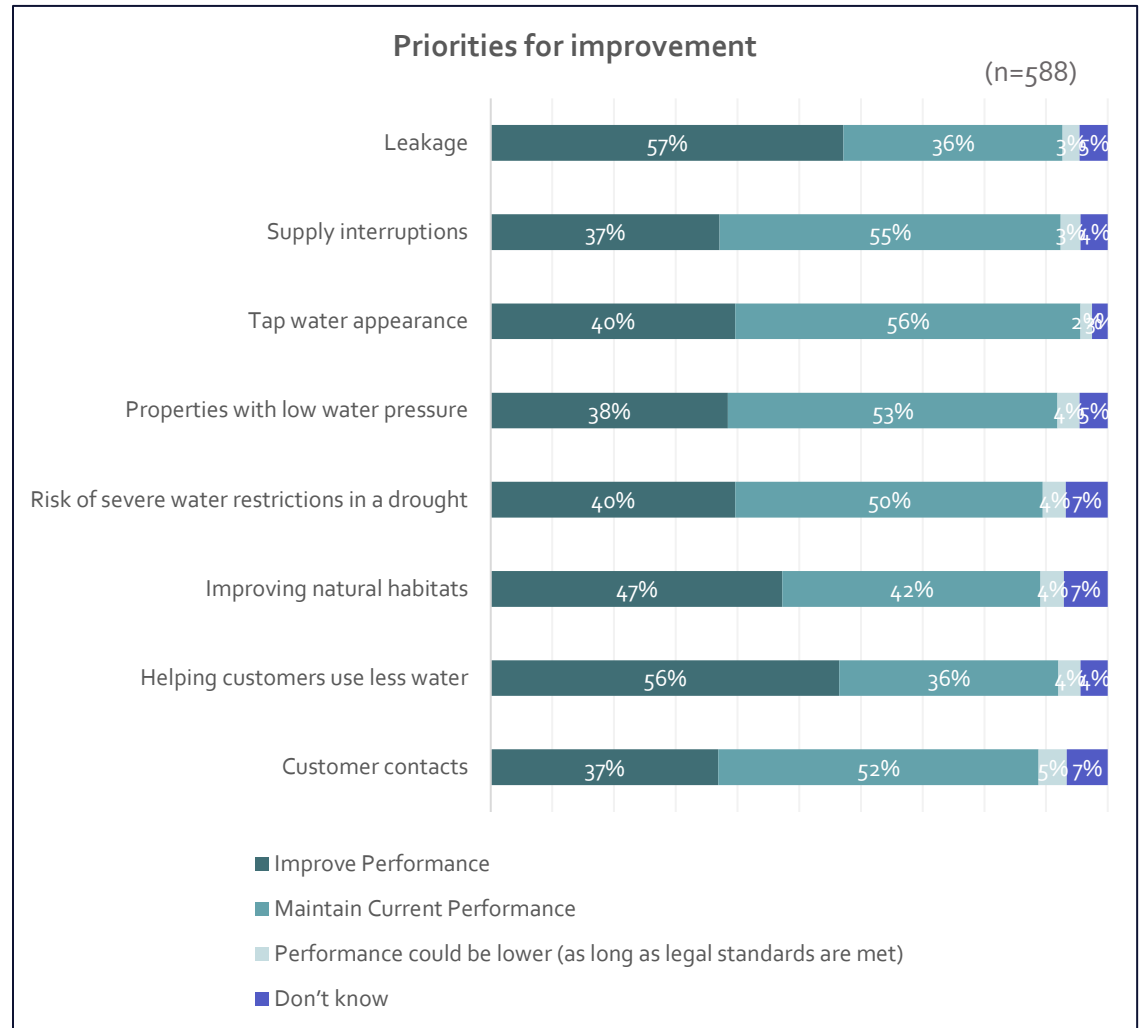
Rating performance – Household

- Customer satisfaction with Bristol Water performance for the 8 attributes tested ranged from 49-62%.
- Customers were most likely to find Bristol Water “Satisfactory” or “Somewhat satisfactory” for Leakage (62%).
- Risk of severe water restrictions had the lowest satisfaction (49%).



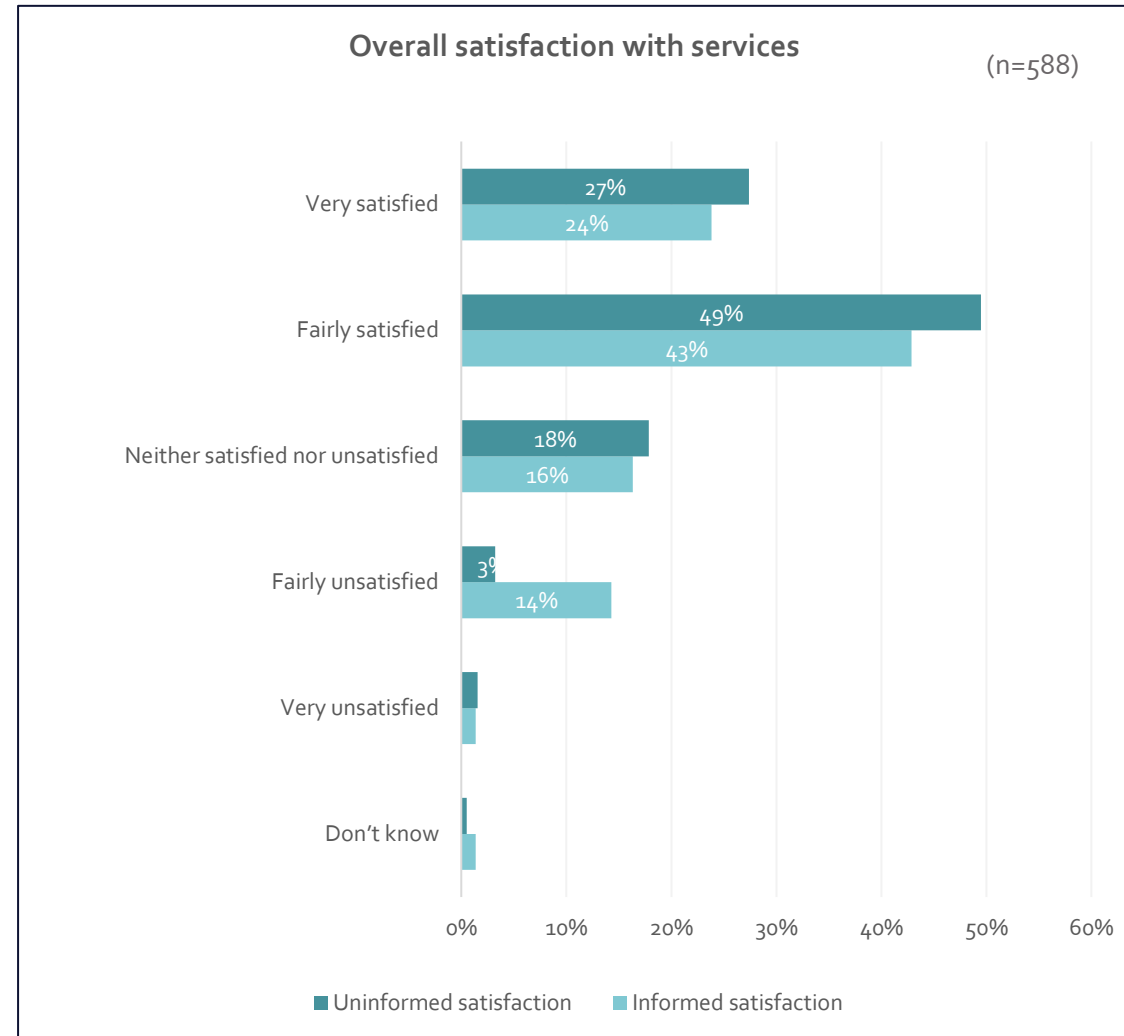
Priorities for improvement – Household

- In most areas customers want Bristol Water to maintain current performance when asked (without bill impacts)
- For leakage, helping customers to use less water and improving natural habitats customers wanted improved performance levels
- There were no areas where customers wanted lower levels of performance



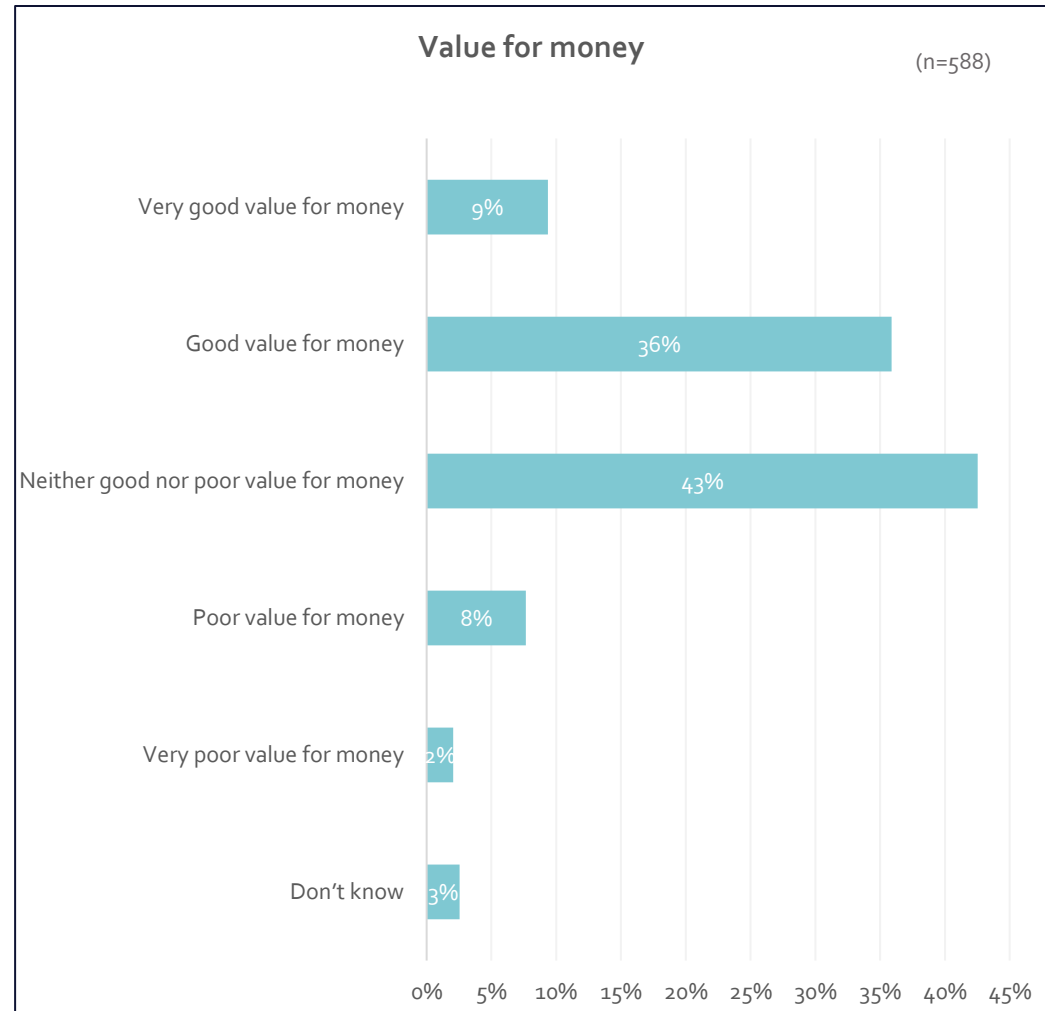
Satisfaction with service overall – Household

- Household customers were asked how satisfied they are overall with services at the start and end of the survey.
- 77% were “fairly satisfied” or “satisfied” at the outset.
- Satisfaction at the conclusion fell to 67%.



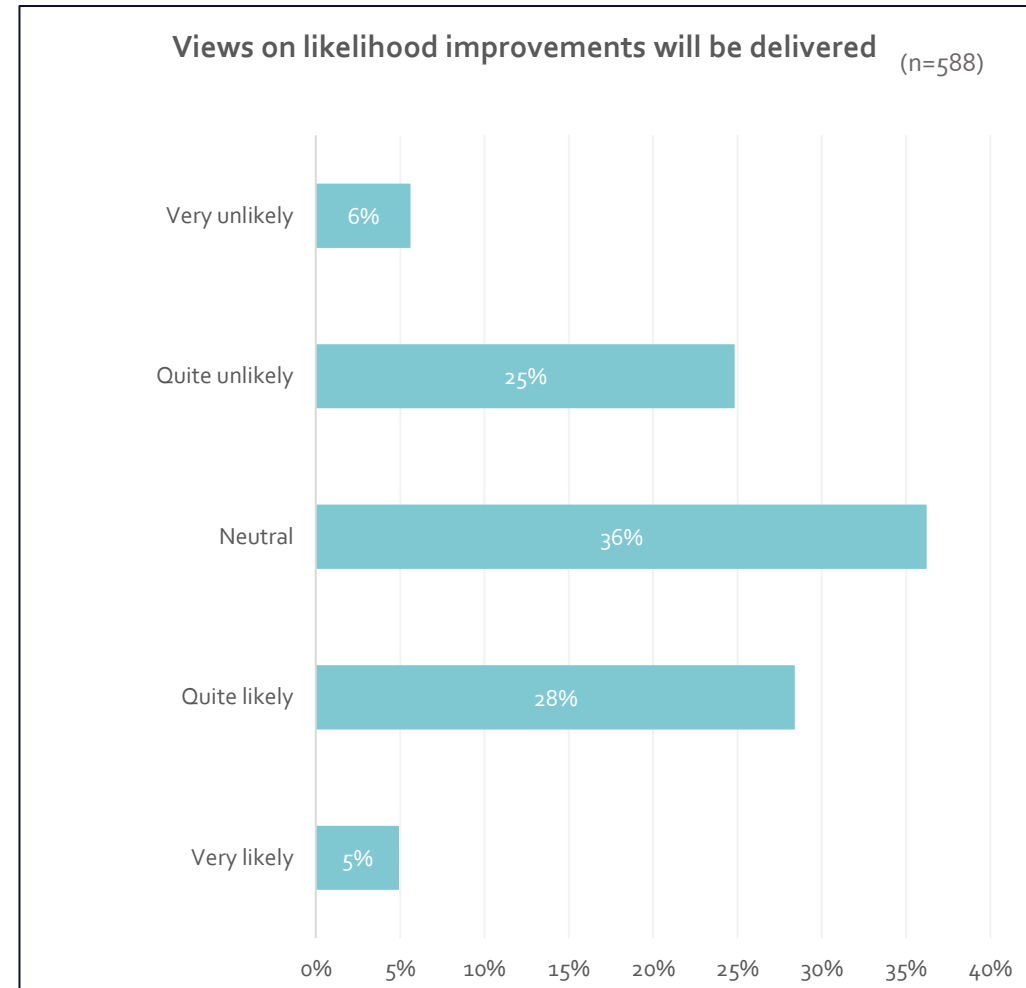
Value for money – Household

- 45% of households felt their water bill was value for money (selecting either “Very good” or “Good” value.
- 44% were neutral on this measure.
- Only 10% felt their water bill was “poor” or “very poor” value.



Views on delivery- Household

- 33% of customers feel it was “quite likely” or “very likely” improvements would be delivered.
- This almost mirrors the 31% of customers who feel it was “quite unlikely” or “very unlikely” improvements would be delivered.
- 36% were neutral on this measure.

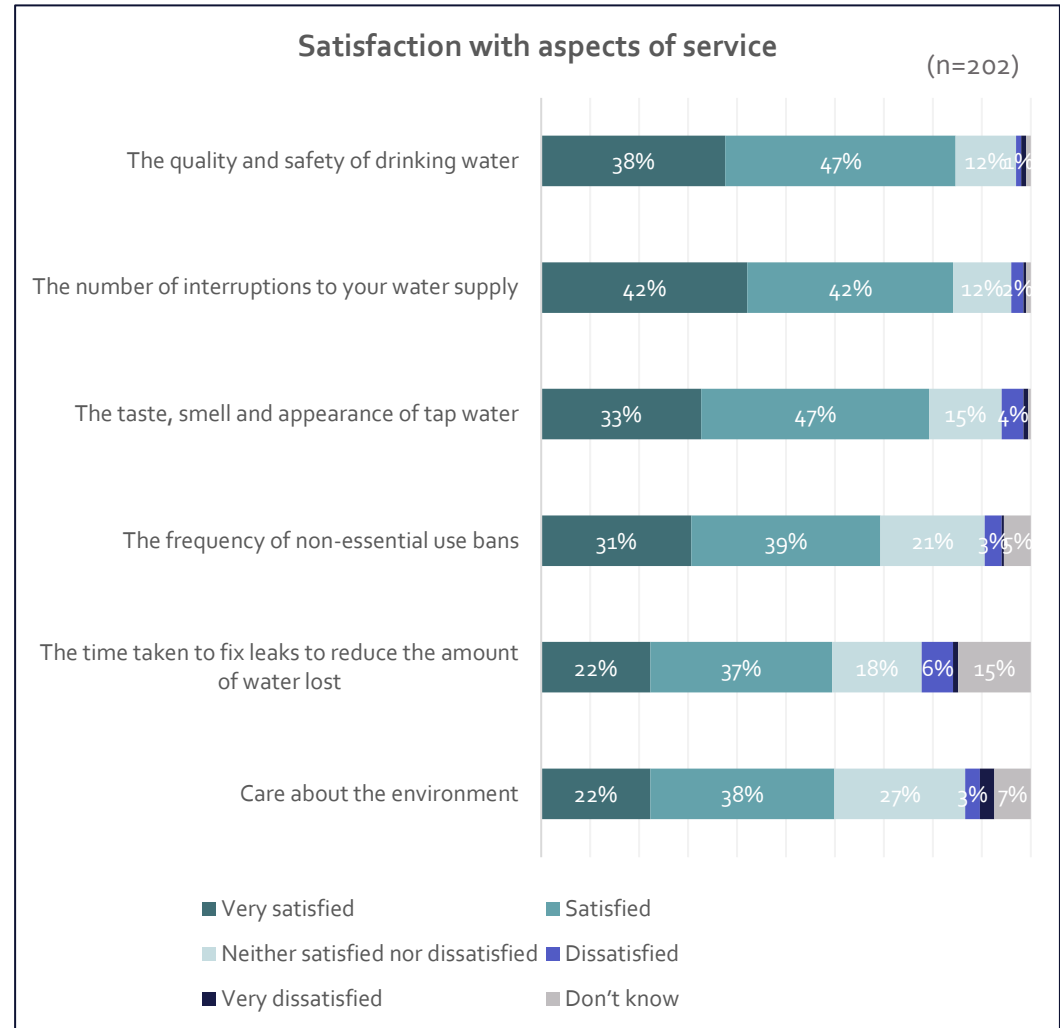


Supplemental Non-household results

- Satisfaction with services
- Importance of service areas
- Rating of current performance
- Priorities for improvement

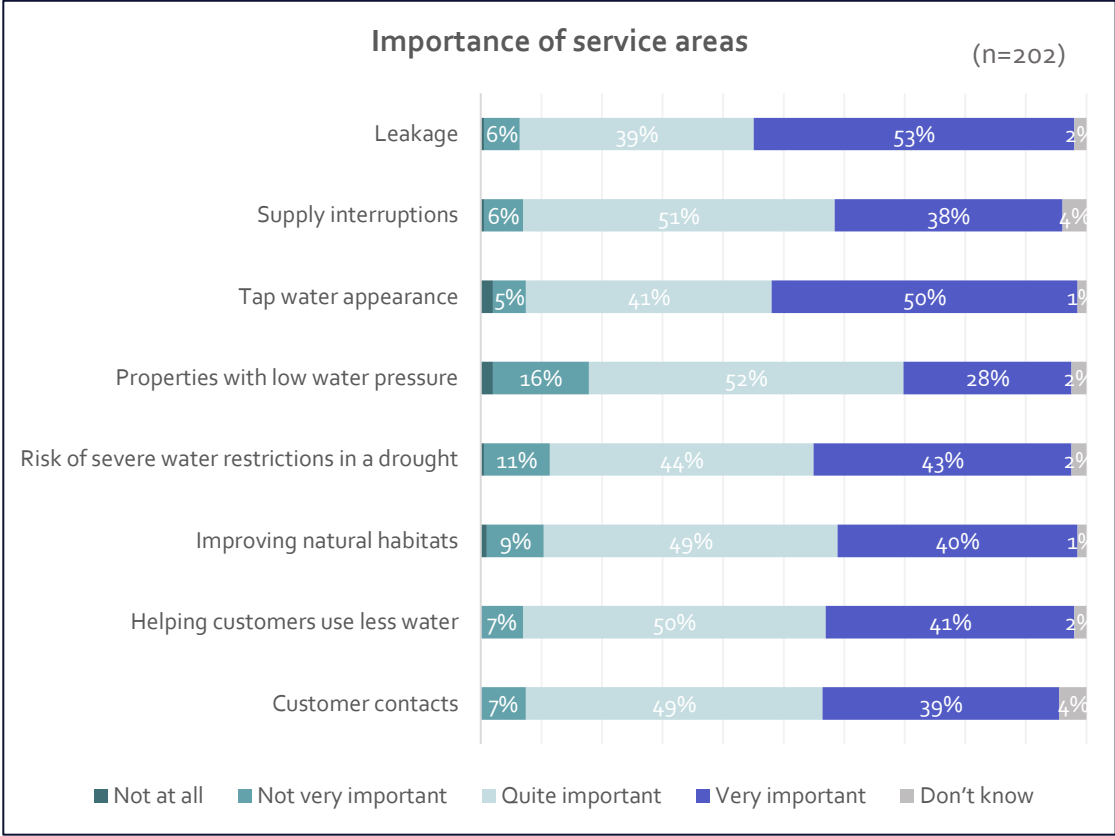
Satisfaction with service areas – Non-household

- Most customers are satisfied with all aspects of service, particularly the quality of drinking water and interruptions.
- Satisfaction with the taste, smell and appearance of tap water was also high.
- Dissatisfaction is generally low, with the highest share relating to the time taken to fix leaks (6%).



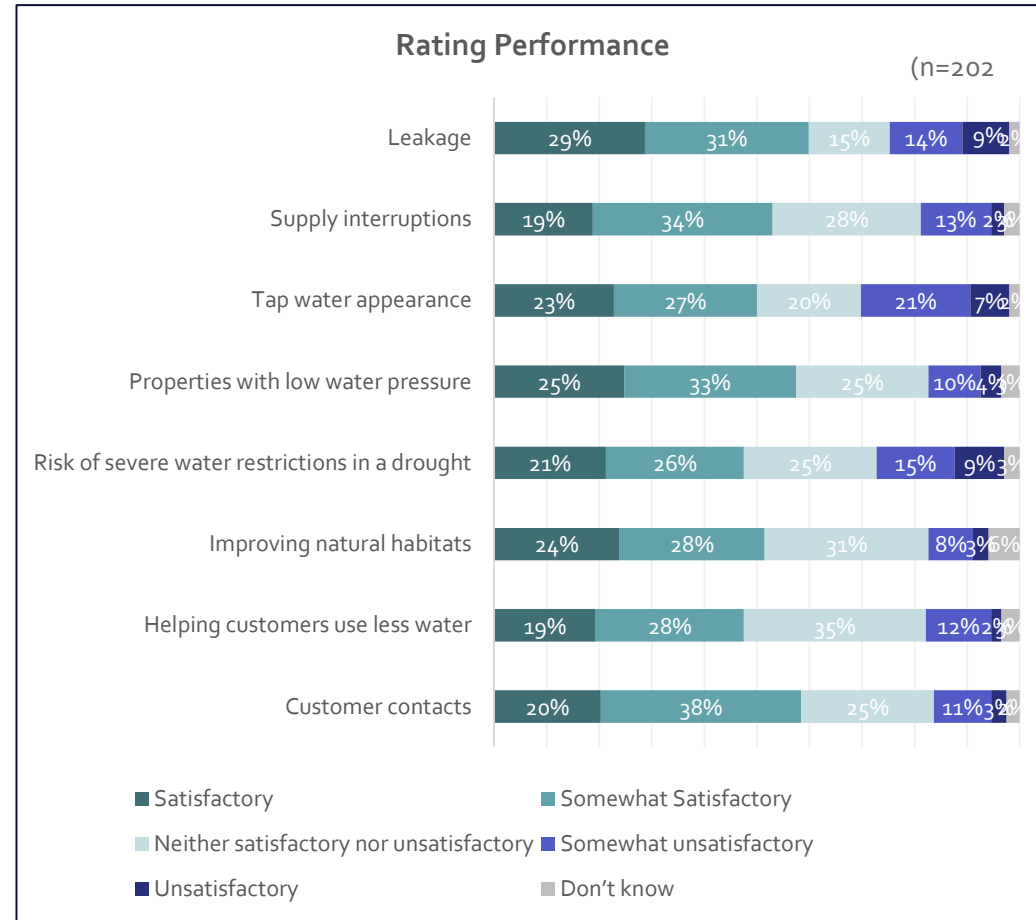
Importance of service areas – Non-household

- Customers felt all areas of service were “Very important” or “Quite important”.
- Leakage was most important (92%), closely followed by customer contacts (91%) and the taste, smell and appearance of tap water (91%)
- Properties with low water pressure was the least important service area (80%)



Rating performance – Non-household

- Customer satisfaction with Bristol Water performance for the 8 attributes tested ranged from 48-60%.
- Customers were most likely to find Bristol Water “Satisfactory” or “Somewhat satisfactory” for leakage (60%), properties with low pressure (57%) and customer contacts (58%).
- Helping customers use less water (48%), tap water appearance (50%) and the risk of severe restrictions (48%) had the lowest satisfaction with current service.



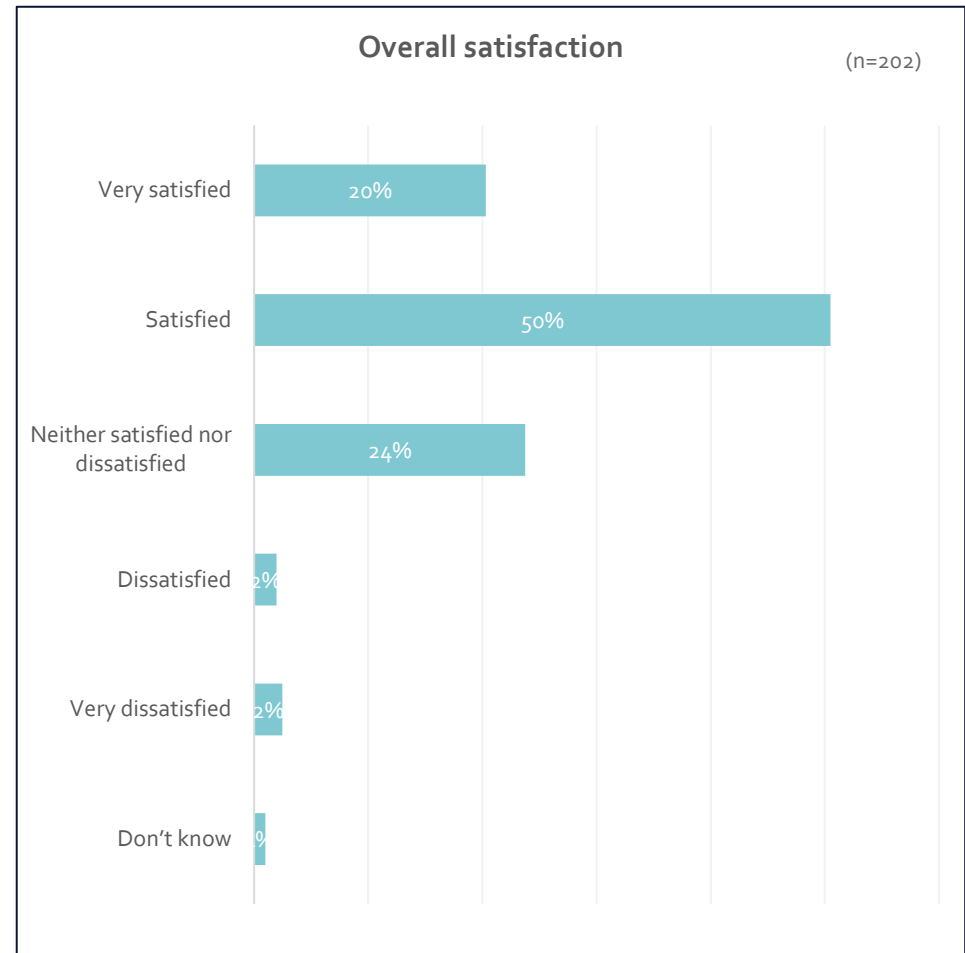
Priorities for improvement – Non-household

- In most areas customers want Bristol Water to maintain current performance when asked (without bill impacts)
- The clearest areas for improvement for business customers were leakage (59%) and helping customers to use less water (56%).
- Properties receiving low pressure (10%) was the the clearest area where customers would accept lower levels of performance.



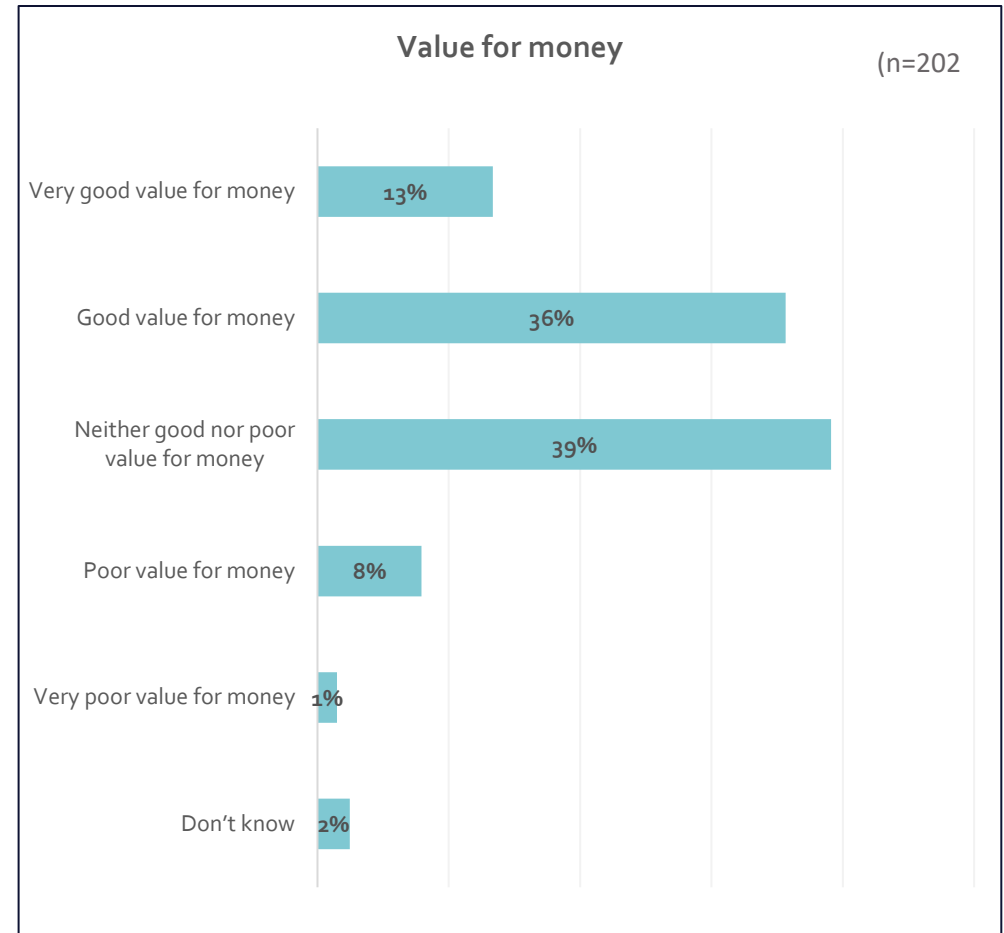
Satisfaction with service overall – Non-household

- Overall satisfaction with services for NHH customers was 70% (selecting either “Very satisfied” or “satisfied”).
- 24% were neutral on this measure.
- Only 4% felt were “dissatisfied” or “very dissatisfied” with overall service.



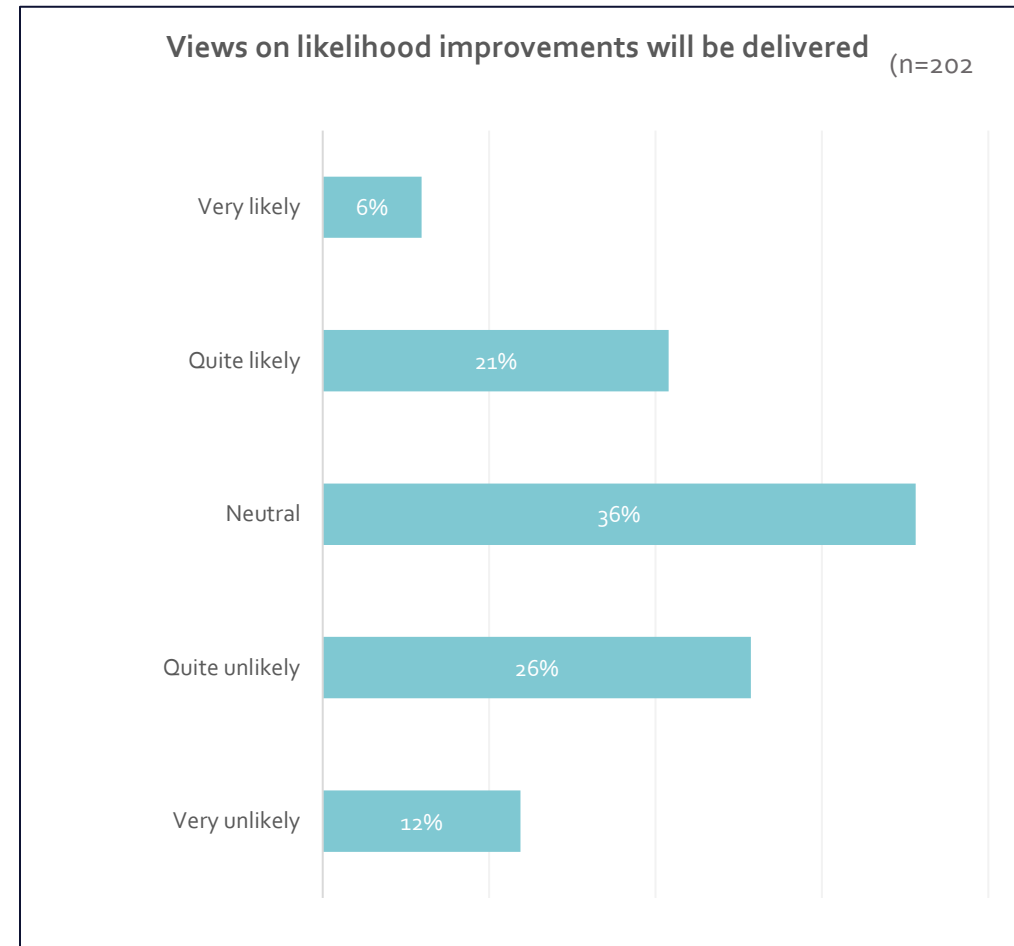
Value for money – Non-household

- 49% of businesses felt their water bill was value for money (selecting either “Very good” or “Good” value.
- 39% were neutral on this measure.
- Only 9% felt their water bill was “poor” or “very poor” value.



Views on delivery- Non-household

- 27% of businesses feel it was “quite likely” or “very likely” improvements would be delivered.
- This compares favourably to 37% of businesses who feel it was “quite unlikely” or “very unlikely” improvements would be delivered.
- 36% were neutral on this measure.



Annex 1: DCE task attributes and levels

DCE Task – Attributes and Levels – Block 1

	Attribute Name	ROLLOVER text	Measure	Level coding						
				1	2	3	4	5	6	7
	Display in lists	Display as rollover	Display on choice cards							
LKG	Leakage	Leaks are caused by cracks in ageing pipes, freezing weather, or the weight of traffic on a road above.	Percentage of water lost due to leakage each year	WORSE 20% (100 litres per property per day)	WORSE 17% (85 litres per property per day)	NO CHANGE 13% (65 litres per property per day)	BETTER 9% (45 litres per property per day)	BETTER 6% (30 litres per property per day)		
SI	Supply interruptions	Water supply may be lost without any warning due to burst pipes, or equipment or power supply failures. The average length of expected interruptions is about 6 hrs	Number of properties affected by unexpected interruptions to water supply each year	WORSE 6000 properties (108 in every 10,000 properties)	WORSE 5000 properties (90 in every 10,000 properties)	NO CHANGE 4,030 properties (73 in every 10,000 properties)	BETTER 2000 properties (36 in every 10,000 properties)	BETTER 1000 properties (18 in every 10,000 properties)		
DIS	Tap water appearance	Discoloured tap water can be caused by deposits accumulating in pipes or due to tiny air bubbles, which make tap water cloudy, because of changes to pumping of water. This accounts for about 70% of all customer contacts	Number of customer contacts about appearance of tap water	WORSE 2500 properties (45 in every 10,000 properties)	WORSE 2000 properties (36 in every 10,000 properties)	NO CHANGE 1400 contacts (25 in every 10,000 properties)	BETTER 650 contacts (12 in every 10,000 properties)	BETTER 125 contacts (2 in every 10,000 properties)		
LWP	Low water pressure	Low pressure reduces the force that water comes out of the tap. This can be due to a property's location (e.g. on a hill) or a reduction in mains pressure (e.g. due to a burst pipe).	Properties at risk of receiving low pressure	WORSE 60 properties (1.1 in every 10,000 properties)	WORSE 30 properties (0.5 in every 10,000 properties)	NO CHANGE 11 properties (0.2 in every 10,000 properties)	BETTER 5 properties (0.1 in every 10,000 properties)	BETTER 0 properties (0.0 in every 10,000 properties)		
BIL	Water bill		Change in annual water bill from 2025	£15 decrease	£5 decrease	No change	£5 increase	£10 increase	£15 increase	£25 increase
			ACTUAL SERVICE LEVEL	-2	-1	0	+1	+2	+3	4

DCE Task – Attributes and Levels – Block 2

Attribute	Attribute Name	ROLLOVER text	Measure	Level coding							
				1	2	3	4	5	6	7	
	Display in lists	Display as rollover	Display on choice cards								
RC	Risk of severe water restrictions in a drought	In severe droughts, water is cut off to households and businesses on a rota basis for up to 17 hours a day including peak times. For example, water could be restricted from 2pm to 7am.	How often water is cut off to households and businesses on a rota basis	WORSE Once every 50 years	WORSE Once every 100 years	NO CHANGE Once every 200 years	BETTER Once every 300 years	BETTER Once every 500 years			
NAT	Natural Habitats	Improving the environment on Bristol Water's land helps to balance the impact of its activities on the quality of natural habitats and the diversity of plants and wildlife they support. Since 2014 Bristol Water has been measuring the improvements it is making to natural habitats through activities like planting of new woodlands and the control of invasive species. These	Number of habitat improvements per 10,000 population	n/a	n/a	NO CHANGE 143 points	BETTER 151 points (6% improvement to natural habitats)	BETTER 160 points (12% improvement to natural habitats)			
PCC	Per capita consumption	On average, each person currently uses about 155 litres of water per day in the Bristol water region. This is above the industry average of 145 litres per day. This can be achieved by offering free or incentivised water-saving devices, educating customers and encouraging metering. Also, working with developers to build more water efficient new homes.	Litres of water consumption per person per day	WORSE 175 litres per person per day (13% increase)	WORSE 165 litres per person per day (6% increase)	NO CHANGE 155 litres per person per day	BETTER 135 litres per person per day (15% reduction)	BETTER 110 litres per person per day (30% reduction)			
CC	Customer complaints	Bristol Water receives contacts from customers each year about problems with the water supply (e.g. no water, tap water quality, leaks).	Number of customers dissatisfied with customer service each year	WORSE 2,500 complaints (48 in every 10,000 properties)	WORSE 2,000 complaints (38 in every 10,000 properties)	NO CHANGE 1600 complaints (31 in every 10,000 properties)	BETTER 1000 complaints (19 in every 10,000 properties)	BETTER 500 complaints (10 in every 10,000 properties)			
BIL	Water bill		Change in annual water bill from 2025	£15 decrease	£5 decrease	No change	£5 increase	£10 increase	£15 increase	£25 increase	
ACTUAL SERVICE LEVEL				-2	-1	0	+1	+2	+3	4	

Package Exercise – Attributes and Levels

Format for Package CV question

Attribute		Attribute name	Measure Display on choice card	Levels	
				Option 1 (current situation)	Option 2
ATT1	LKG	Leakage	Leaks are caused by cracks in ageing pipes, freezing weather, or the weight of traffic on a road above. About 36,000,000 litres of water (13% of total water put into supply) is lost per day in the Bristol Water region. This is equivalent to the daily water usage of 230,000 people. Bristol Water currently has the lowest leakage in the water industry on a litres per property per day basis and is currently beating targets set in 2020 to reduce leakage	13%	6%
ATT2	SI	Supply interruptions	Water supply may be lost without any warning due to burst pipes, or equipment or power supply failures. Around 4,000 properties are currently affected each year across the Bristol Water region and performance in this area is currently improving.	4,030 properties	1000 properties
ATT3	DIS	Tap water appearance	Discoloured tap water can be caused by deposits accumulating in pipes or due to tiny air bubbles, which make tap water cloudy, because of changes to pumping of water. This accounts for about 70% of all customer contacts related to the appearance of tap water. Bristol Water currently receive around 1400 customer contacts about appearance of tap water. Current performance in this area is below target.	1400 contacts	125 contacts
ATT4	LWP	Low water pressure	Low pressure reduces the force that water comes out of the tap. This can be due to a property's location (e.g. on a hill) or a reduction in mains pressure (e.g. due to a burst pipe). Around 11 properties are currently at risk of receiving low water pressure each year across the Bristol Water region and performance in this area of service has been improving	11 properties	0 properties
ATT6	RC	Risk of severe water restrictions in a drought	In severe droughts, water is cut off to households and businesses on a rota basis for up to 17 hours a day including peak times. For example, water could be restricted from 2pm to 7am. These severe restrictions might typically last 1 month. This would affect local businesses, but not hospitals. Many schools and businesses would likely close during the severe drought period.	Once every 200 years	Once every 500 years
ATT7	NAT	Natural Habitats	Improving the environment on Bristol Water's land helps to balance the impact of its activities on the quality of natural habitats and the diversity of plants and wildlife they support. Bristol Water's objective is to provide a net gain to natural habitats.	143 points	160 points
ATT8	PCC	Per capita consumption	On average, each person currently uses about 155 litres of water per day in the Bristol water region. This is above the industry average of 145 litres per day. Bristol Water can help customers to use less water, to save customers money and adapt to the challenges like hotter weather as a result of climate change. Using less water helps to reduce the need to develop new supplies in the future and also allows less water to be taken out of the environment.	155 litres per person per day	110 litres per person per day
ATT9	CC	Customer complaints	Bristol Water receives contacts from customers each year about problems with the water supply (e.g. no water, tap water quality, leaks). Around 1,600 customers each year are dissatisfied with the customer service provided by Bristol Water (this is equal to about 30 customers for every 10,000). Performance in this area of service has been improving	1600 complaints	500 complaints
ATT10	BIL	Water bill	Change in annual water bill from 2025	No change	RANDOM FROM LEVELS 2-8 BELOW

Option 1 = all attributes at Level 3
Option 2 = all attributes at Level 5 except bill (random)

Random bill amount

1	2	3	4	5	6	7	8
No change	£5 increase	£10 increase	£15 increase	£20 increase	£25 increase	£35 increase	£50 increase

Bill attribute levels for non-household survey

DCE Block 1 and 2

Attribute		Attribute Name	Measure	Level coding						
		Display in lists	Display on choice cards	1	2	3	4	5	6	7
Household	BILL	Water bill	Change in yearly water bill from 2025	£15 decrease	£5 decrease	No change	£5 increase	£10 increase	£15 increase	£25 increase
Non-household	BILL	Water bill	Percentage Change in yearly water bill from 2025	1.2% decrease	0.4% decrease	No change	0.4% increase	0.8% increase	1.2% increase	2% increase

Package Exercise

Attribute		Attribute name	Measure	Levels	
			Display on choice card	Option 1 (current situation)	Option 2
ATT10	BILL	Water bill	Percentage change in yearly water bill from 2025	No change	RANDOM FROM LEVELS 2 - 8 BELOW

Random bill amount

	1	2	3	4	5	6	7	8
Household	No change	£5 increase	£10 increase	£15 increase	£20 increase	£25 increase	£35 increase	£50 increase
Non-household	No change	0.4% increase	0.8% increase	1.2% increase	1.6% increase	2% increase	3% increase	4% increase

Annex 2: Survey showcards and instructions

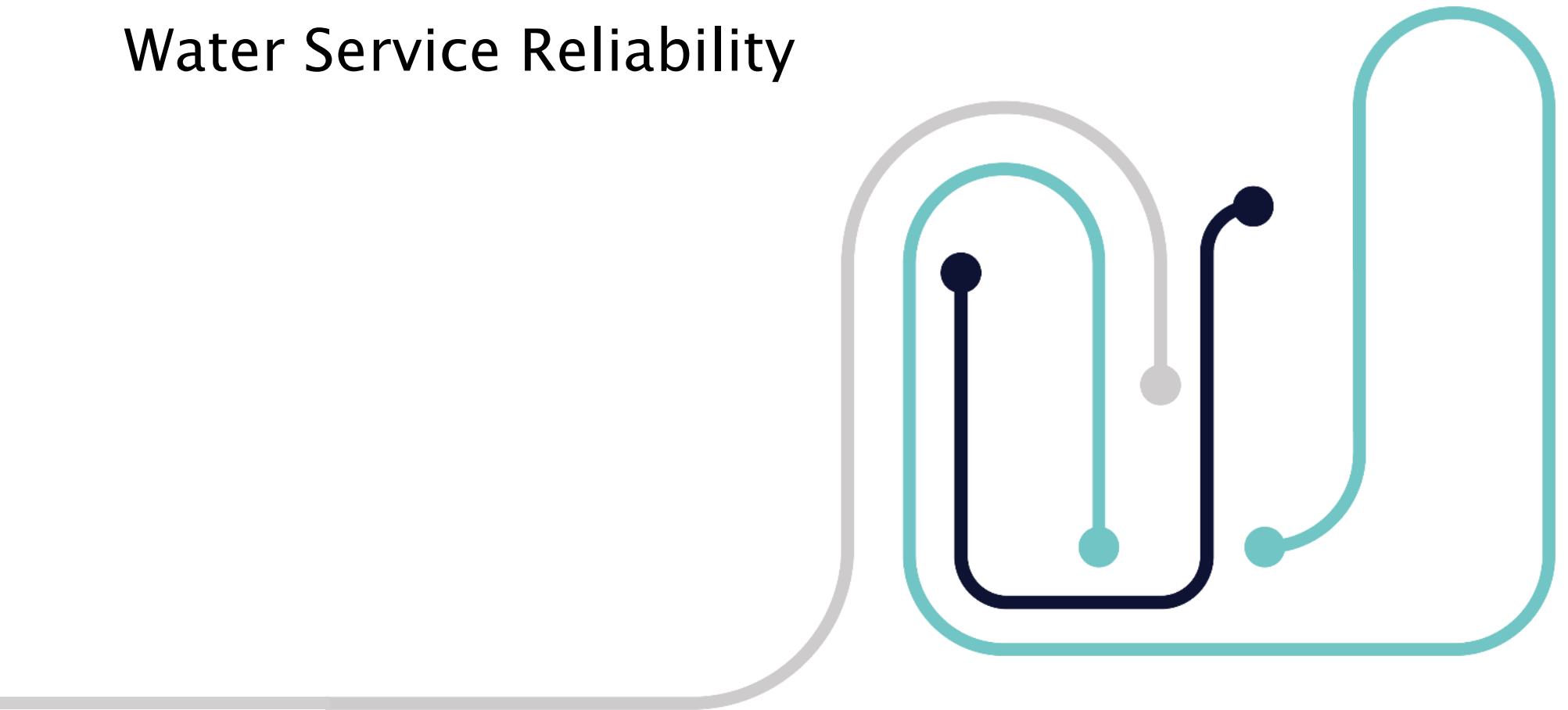
- Information showcards for DCE attributes
- Choice card instructions

HOW WE COMPARE SHOWCARDS



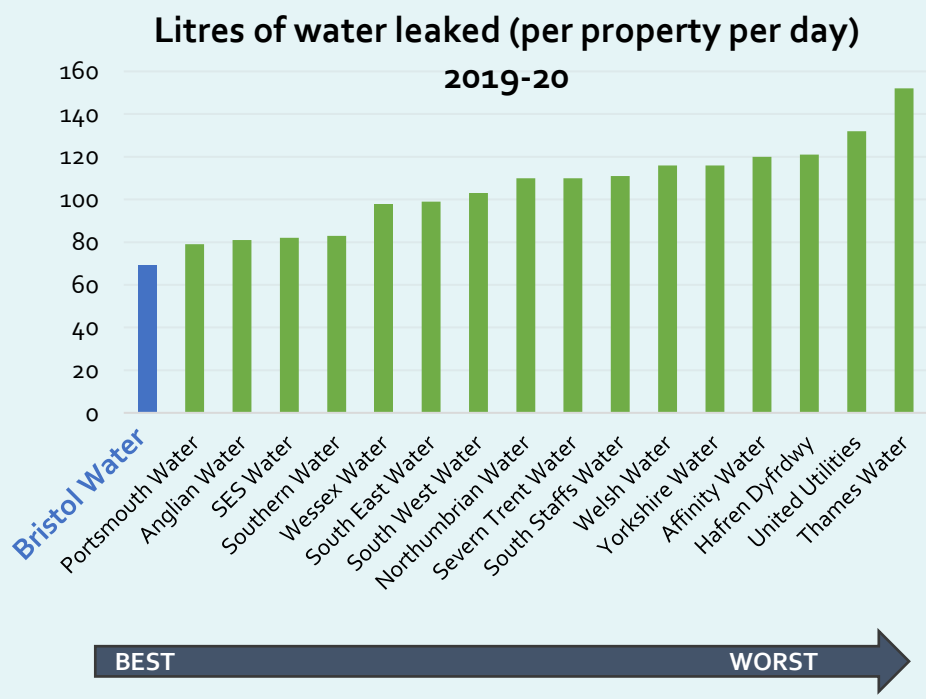
FIRST SERVICE BLOCK MEASURES

Water Service Reliability



Leakage

How do we compare?



What is this?

Leaks are caused by cracks in ageing pipes, freezing water, or the weight of traffic on the road above.

This results in more water being taken from rivers (which might affect wildlife) and treated to supply customers.

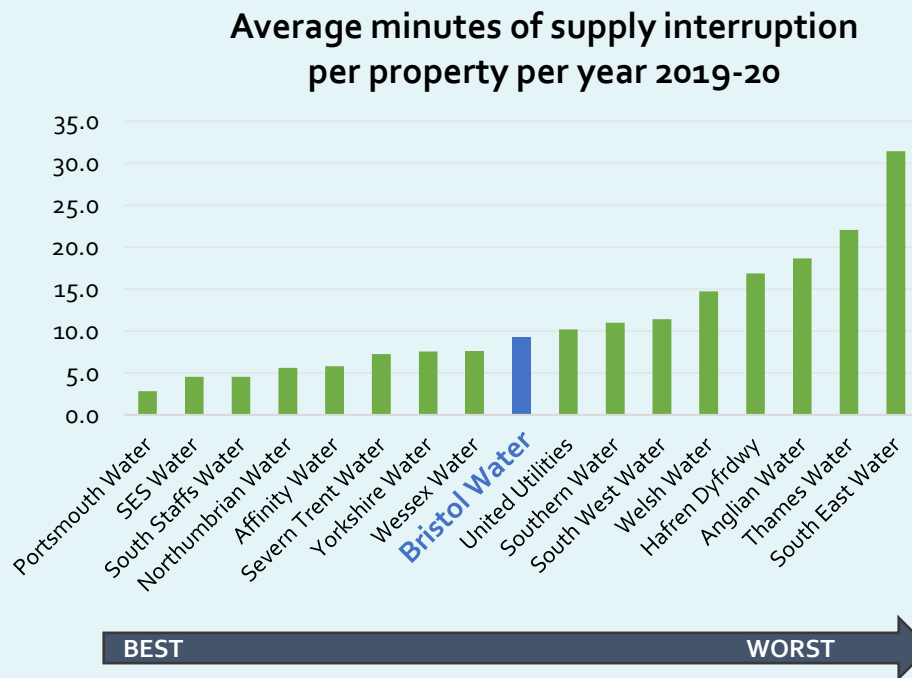
Bristol Water currently has the lowest leakage in the water industry on a litres per property per day basis and is currently beating targets set in 2020 to reduce leakage.

How can this be improved?

Replace old pipes with modern plastic ones and reduce pressure in the network.

Supply interruptions

How do we compare?



What is this?

Water supply may be lost without warning due to burst pipes, or equipment or power supply failures. This can happen any time day or night.

Around 4,000 properties (equal to about 73 properties for every 10,000 properties) are currently affected each year across the Bristol Water region and performance in this area is currently improving.

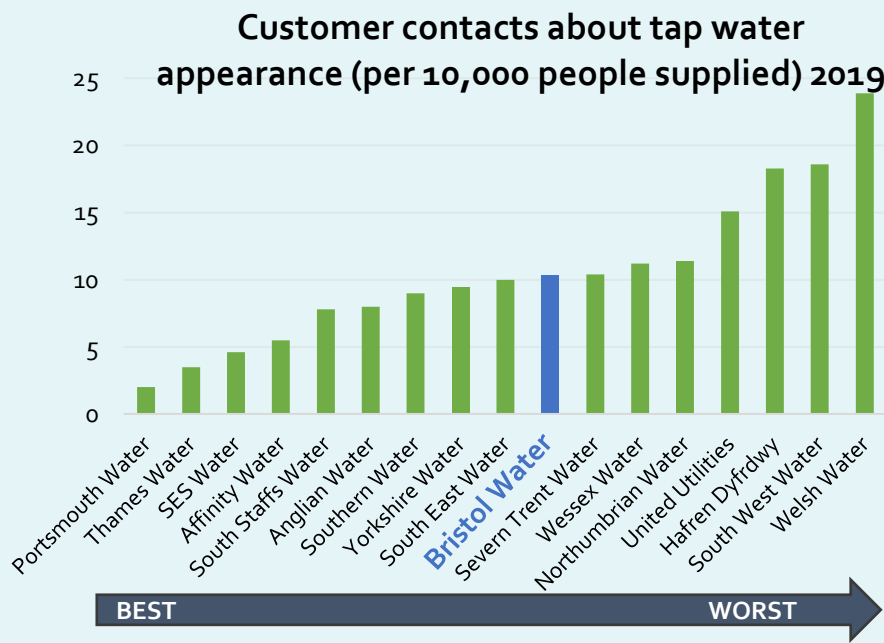
How can this be improved?

Replace old pipes more often across the network.



Tap water appearance

How do we compare?



What is this?

Discoloured tap water is caused by deposits accumulating in pipes which makes water look brow, or by tiny air bubbles which make tap water look cloudy or milky. This accounts for about 70% of all customer contacts related to the appearance of tap water.

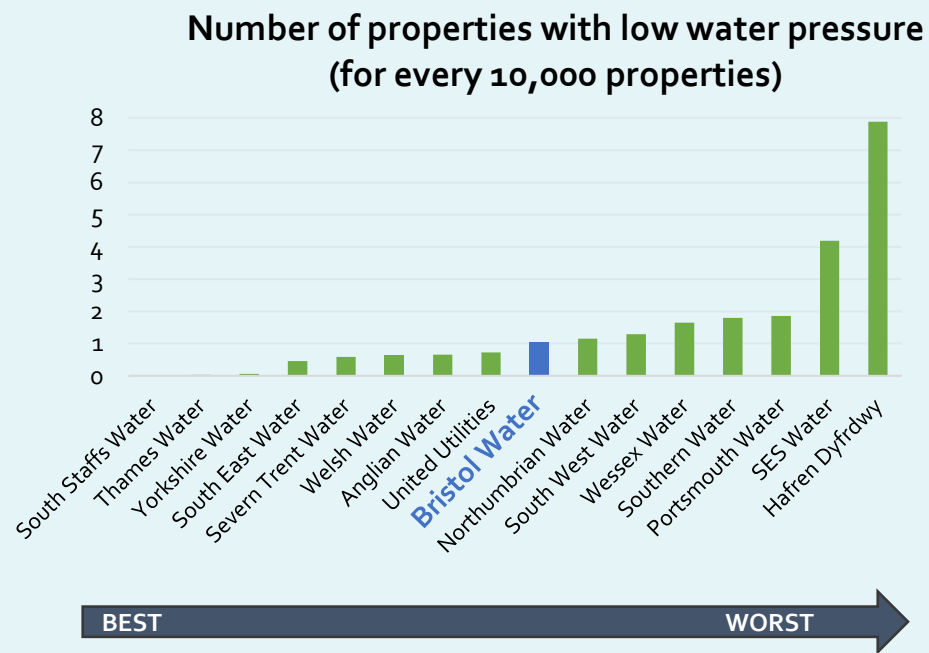
Plumbing issues in a customer’s home, such as corrosion of pipes, can also cause problems.

How can this be improved?

Clean water supply pipes more often and replace old pipes.

Properties with low water pressure

How do we compare?



What is this?

Water pressure is the flow of water as it comes out of the tap when turned on fully. Low pressure can be caused by burst pipes or can be due to a property's location.

Low pressure means it takes 2-5 times longer to fill a bowl of water, showers are less powerful, and washing machines take longer to run.

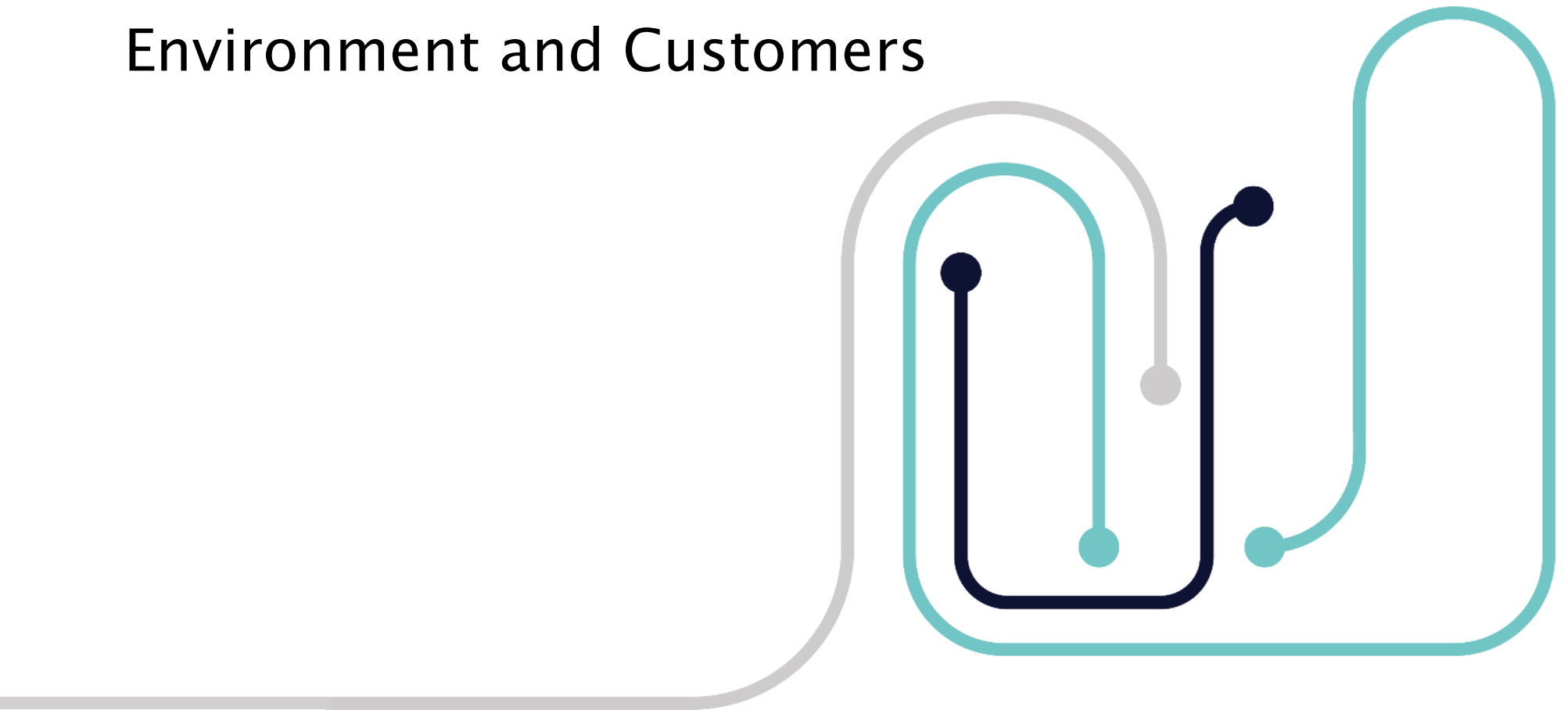
This is measured as the number of properties below the national low water pressure level per 10,000 connections.

How can this be improved?

Upgrade pumps, pipes on the water supply network and increase pressure monitoring with loggers.

SECOND SERVICE BLOCK MEASURES

Environment and Customers



Risk of severe water restrictions in a drought

How do we compare?

On average, this situation could occur once every 200 years in the Bristol Water area. Some parts of England are increasingly coming under serious water stress due to things like rising populations and the impact of climate change. This is leading to a higher risk of severe drought situations. The Bristol Water area is currently in a less serious water stress situation compared to other parts like the South East of England.



What is this?

In severe droughts, water is cut off to households and businesses on a rota basis for up to 17 hours a day including peak times. For example, water could be restricted from 2pm to 7am.

These severe restrictions might typically last 1 month. This would affect local businesses, but not hospitals. Many schools and businesses would likely close during the severe drought period.

How can this be improved?

Investing in new resources such as storing more water in reservoirs, sharing more water across regions and helping customers use less water.

Improving natural habitats

What is this?

Improving the environment on Bristol Water's land helps to balance the impact of its activities on the quality of natural habitats and the diversity of plants and wildlife they support. Bristol Water's objective is to improve natural habitats and increase biodiversity.

How can this be improved?

Continually monitoring and maintaining the natural environment through schemes such as removing invasive species and planting new trees.

Working with partner organisations like Natural England to improve plant and wildlife diversity and ensuring projects like the Chew Valley Recreational Trail provide a net gain to natural habitats.

How is this measured?

To help track improvements to natural habitats, Bristol Water measures the quantity (hectares of land), quality (good, moderate or low) and uniqueness (very high to very low) of habitats on its land.



These measures of quantity, quality and uniqueness are combined into a performance score that is audited externally each year. **The current score is 143 points per 10,000 population.** If Bristol Water makes a net 5% improvement to natural habitats, this score increases to 150 points per 10,000 population.



Helping customers to use less water

How do we compare?

Daily water use per person (litres) in 2020/21



What is this?

Bristol Water can help customers to use less water, to save customers money and adapt to the challenges of hotter weather as a result of climate change.

9 out of every 10 Bristol Water customers who switch to a water meter have lowered their bills.

How can this be improved?

Offering free or incentivised water-saving devices, educating customers and encouraging metering.

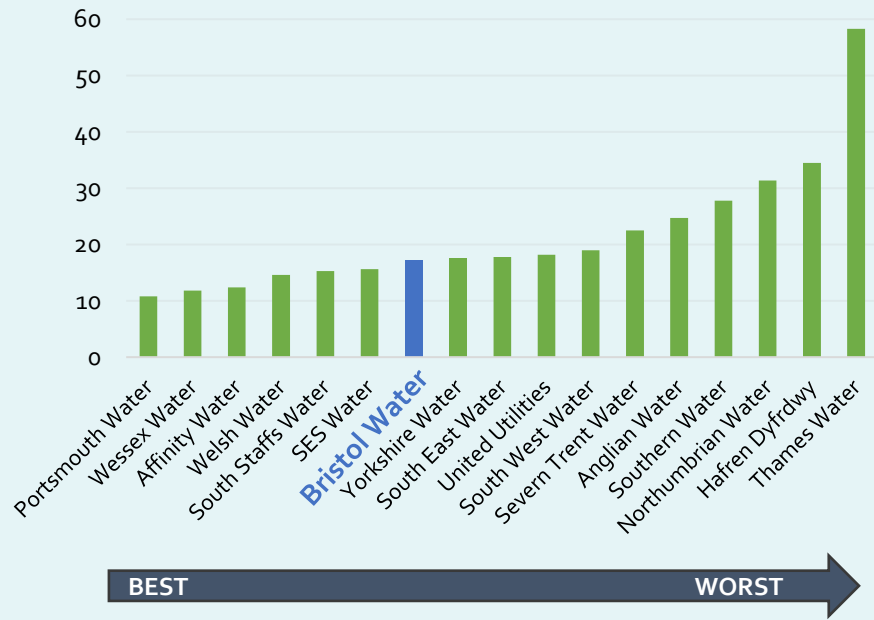
Also, working with developers to build more water efficient new homes.



Customer contacts

How do we compare?

Customer contacts - number of complaints per 10,000 connections in 2019-20



What is this?

Bristol Water receives contacts from customers each year about problems with the water supply (e.g., no water, tap water quality, leaks).

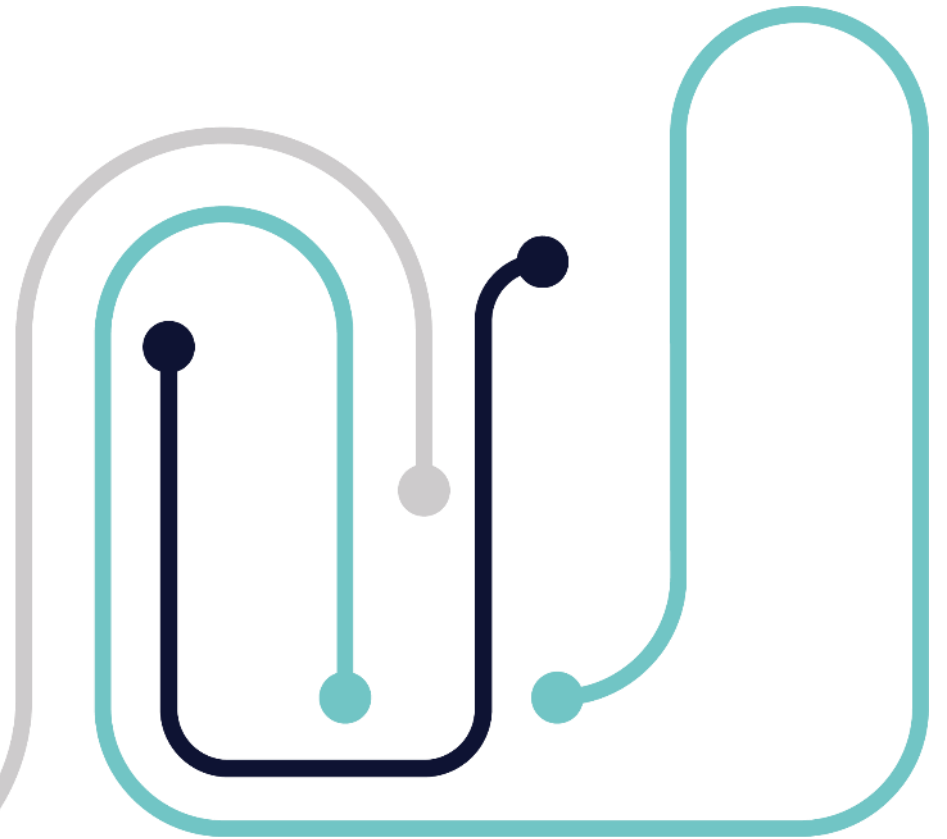
Around 1,600 customers each year are dissatisfied with the customer service provided by Bristol Water (this is equal to about 30 customers for every 10,000 properties).

Performance in this area of service has been improving

How can this be improved?

Improve response times and provide better customer experiences through investing in staff development, new technologies and responding to customer feedback.

CHOICE TASK
INSTRUCTION
SHOWCARDS



CHOICE TASK INSTRUCTIONS

When making your choices please consider:

A. Whether the changes in the services are important to you, and

B. Your overall household income and expenses, remembering that.

- The bill changes shown in these choices are in relation to your current bill amount.
- Any money you pay for improvements will not be available for you to spend elsewhere.
- Other household bills may go up or down.
- All household bills will be affected by the rate of inflation each year.

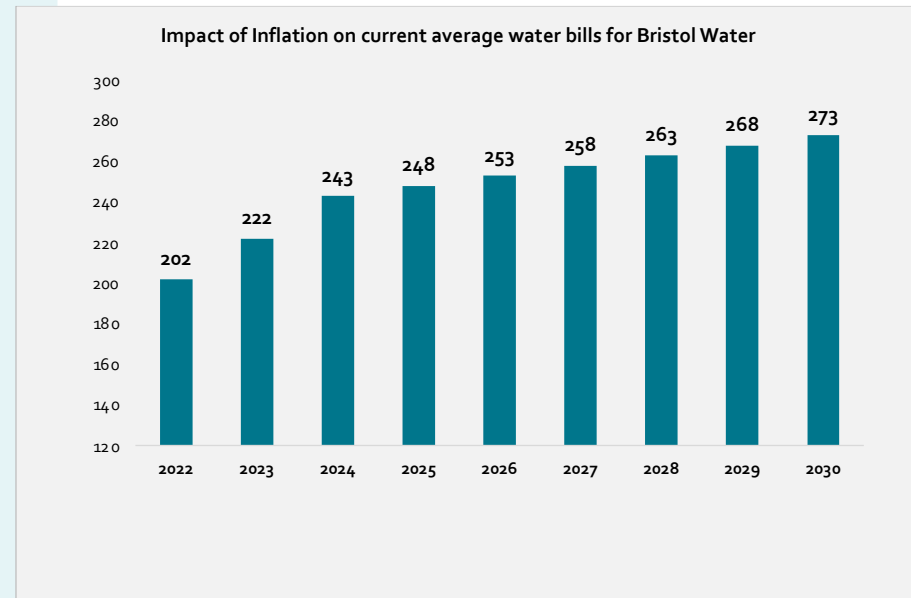
EFFECTS OF INFLATION ON WATER BILLS

Your annual water bill will increase with inflation every year.

Although bill changes you will see are presented in "today's prices", in reality, future bills will increase with inflation every year. This is before any other factors like changes in investment.

The current average bill for Bristol Water is £202 per year.

Based on the latest figures from the Bank of England, projected annual inflation over the next few years could see bills rise to £273 per year by 2030.



You will be asked to pick the option that you prefer -
OPTION A or **OPTION B** or **OPTION C**

	Option A	Option B	Option C
Leakage Percentage of water lost due to leakage each year	NO CHANGE 13% (65 litres per property per day)	BETTER 6% (30 litres per property per day)	WORSE 17% (85 litres per property per day)
Supply Interruptions Number of properties affected by unexpected interruptions to water supply each year	NO CHANGE 4030 properties (73 in every 10,000 properties)	WORSE 6000 properties (108 litres per property per day)	NO CHANGE 4030 properties (73 in every 10,000 properties)
Tap Water Appearance Number of customer contacts about appearance of tap water each year	NO CHANGE 1400 contacts (25 in every 10,000 properties)	NO CHANGE 1400 contacts (25 in every 10,000 properties)	BETTER 2000 contacts (36 in every 10,000 properties)
Low Water Pressure Properties at risk of receiving low pressure	NO CHANGE 11 properties (0.2 in every 10,000 properties)	NO CHANGE 5 properties (0.1 in every 10,000 properties)	BETTER 0 properties (0.0 in every 10,000 properties)
Water Bill Change in annual bill from 2025	No change	£5 increase (41p more per month)	£10 decrease (83p less per month)

Which option do you prefer?

OPTION A is always the level at which each service is currently provided or the no-change option

	Option A	Option B	Option C
Leakage Percentage of water lost due to leakage each year	NO CHANGE 13% (65 litres per property per day)	BETTER 6% (30 litres per property per day)	WORSE 17% (85 litres per property per day)
Supply Interruptions Number of properties affected by unexpected interruptions to water supply each year	NO CHANGE 4030 properties (73 in every 10,000 properties)	WORSE 6000 properties (108 litres per property per day)	NO CHANGE 4030 properties (73 in every 10,000 properties)
Tap Water Appearance Number of customer contacts about appearance of tap water each year	NO CHANGE 1400 contacts (25 in every 10,000 properties)	NO CHANGE 1400 contacts (25 in every 10,000 properties)	BETTER 2000 contacts (36 in every 10,000 properties)
Low Water Pressure Properties at risk of receiving low pressure	NO CHANGE 11 properties (0.2 in every 10,000 properties)	NO CHANGE 5 properties (0.1 in every 10,000 properties)	BETTER 0 properties (0.0 in every 10,000 properties)
Water Bill Change in annual bill from 2025	No change	£5 increase (41p more per month)	£10 decrease (83p less per month)

Which option do you prefer?

OPTION B and OPTION C show alternative levels of service that could be provided. These will change for each choice.

	Option A	Option B	Option C
Leakage Percentage of water lost due to leakage each year	NO CHANGE 13% (65 litres per property per day)	BETTER 6% (30 litres per property per day)	WORSE 17% (85 litres per property per day)
Supply Interruptions Number of properties affected by unexpected interruptions to water supply each year	NO CHANGE 4030 properties (73 in every 10,000 properties)	WORSE 6000 properties (108 litres per property per day)	NO CHANGE 4030 properties (73 in every 10,000 properties)
Tap Water Appearance Number of customer contacts about appearance of tap water each year	NO CHANGE 1400 contacts (25 in every 10,000 properties)	NO CHANGE 1400 contacts (25 in every 10,000 properties)	BETTER 2000 contacts (36 in every 10,000 properties)
Low Water Pressure Properties at risk of receiving low pressure	NO CHANGE 11 properties (0.2 in every 10,000 properties)	NO CHANGE 5 properties (0.1 in every 10,000 properties)	BETTER 0 properties (0.0 in every 10,000 properties)
Water Bill Change in annual bill from 2025	No change	£5 increase (41p more per month)	£10 decrease (83p less per month)

Which option do you prefer?



OPTION B and OPTION C show alternative levels of service that could be provided. These will change for each choice.

	Option A	Option B	Option C
Leakage Percentage of water lost due to leakage each year	NO CHANGE 13% (65 litres per property per day)	BETTER 6% (30 litres per property per day)	WORSE 17% (85 litres per property per day)
Supply Interruptions Number of properties affected by unexpected interruptions to water supply each year	NO CHANGE 4030 properties (73 in every 10,000 properties)	WORSE 6000 properties (108 litres per property per day)	NO CHANGE 4030 properties (73 in every 10,000 properties)
Tap Water Appearance Number of customer contacts about appearance of tap water each year	NO CHANGE 1400 contacts (25 in every 10,000 properties)	NO CHANGE 1400 contacts (25 in every 10,000 properties)	BETTER 2000 contacts (36 in every 10,000 properties)
Low Water Pressure Properties at risk of receiving low pressure	NO CHANGE 11 properties (0.2 in every 10,000 properties)	NO CHANGE 5 properties (0.1 in every 10,000 properties)	BETTER 0 properties (0.0 in every 10,000 properties)
Water Bill Change in annual bill from 2025	No change	£5 increase (41p more per month)	£10 decrease (83p less per month)
Which option do you prefer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OPTION B and OPTION C show alternative levels of service that could be provided. These will change for each choice.

	Option A	Option B	Option C
Leakage Percentage of water lost due to leakage each year	NO CHANGE 13% (65 litres per property per day)	BETTER 6% (30 litres per property per day)	WORSE 17% (85 litres per property per day)
Supply Interruptions Number of properties affected by unexpected interruptions to water supply each year	NO CHANGE 4030 properties (73 in every 10,000 properties)	WORSE 6000 properties (108 litres per property per day)	NO CHANGE 4030 properties (73 in every 10,000 properties)
Tap Water Appearance Number of customer contacts about appearance of tap water each year	NO CHANGE 1400 contacts (25 in every 10,000 properties)	NO CHANGE 1400 contacts (25 in every 10,000 properties)	BETTER 2000 contacts (36 in every 10,000 properties)
Low Water Pressure Properties at risk of receiving low pressure	NO CHANGE 11 properties (0.2 in every 10,000 properties)	NO CHANGE 5 properties (0.1 in every 10,000 properties)	BETTER 0 properties (0.0 in every 10,000 properties)
Water Bill Change in annual bill from 2025	No change	£5 increase	£10 decrease

Which option do you prefer?



Tip: For each level of service we will tell you if it is 'better', 'worse' or 'no change' from the current level.

OPTION B and OPTION C show alternative levels of service that could be provided. These will change for each choice.

	Option A	Option B	Option C
Leakage Percentage of water lost due to leakage each year	NO CHANGE 13% (65 litres per property per day)	BETTER 6% (30 litres per property per day)	WORSE 17% (85 litres per property per day)
Supply Interruptions Number of properties affected by unexpected interruptions to water supply each year	Water supply may be lost without any warning due to burst pipes, or equipment or power supply failures. Around 4,000 properties are currently affected each year across the Bristol Water region and performance in this area is currently improving. The average length of expected interruptions is about 6 hrs.		
Tap Water Appearance Number of customer contacts about appearance of tap water each year	1400 contacts (25 in every 10,000 properties)	1400 contacts (25 in every 10,000 properties)	BETTER 2000 contacts (36 in every 10,000 properties)
Low Water Pressure Properties at risk of receiving low pressure	NO CHANGE 11 properties (0.2 in every 10,000 properties)	NO CHANGE 5 properties (0.1 in every 10,000 properties)	BETTER 0 properties (0.0 in every 10,000 properties)
Water Bill Change in annual bill from 2025	No change	£5 increase	£10 decrease

Which option do you prefer?

Tip: Scroll over the text in the first column for a reminder of the service descriptions.

The final row for each option shows the change in your water bill.
Some options will have an increase, some a decrease, and others no change.

	Option A	Option B	Option C
Leakage Percentage of water lost due to leakage each year	NO CHANGE 13% (65 litres per property per day)	BETTER 6% (30 litres per property per day)	WORSE 17% (85 litres per property per day)
Supply Interruptions Number of properties affected by unexpected interruptions to water supply each year	NO CHANGE 4030 properties (73 in every 10,000 properties)	WORSE 6000 properties (108 litres per property per day)	NO CHANGE 4030 properties (73 in every 10,000 properties)
Tap Water Appearance Number of customer contacts about appearance of tap water each year	NO CHANGE 1400 contacts (25 in every 10,000 properties)	NO CHANGE 1400 contacts (25 in every 10,000 properties)	BETTER 2000 contacts (36 in every 10,000 properties)
Low Water Pressure Properties at risk of receiving low pressure	NO CHANGE 11 properties (0.2 in every 10,000 properties)	NO CHANGE 5 properties (0.1 in every 10,000 properties)	BETTER 0 properties (0.0 in every 10,000 properties)
Water Bill Change in annual bill from 2025	No change	£5 increase (41p more per month)	£10 decrease (83p less per month)

Which option do you prefer?

You will be asked to make 5 choices in total, each time choosing between OPTION A (NO CHANGE), OPTION B or OPTION C.

	Option A	Option B	Option C
Leakage Percentage of water lost due to leakage each year	NO CHANGE 13% (65 litres per property per day)	BETTER 6% (30 litres per property per day)	WORSE 17% (85 litres per property per day)
Supply Interruptions Number of properties affected by unexpected interruptions to water supply each year	NO CHANGE 4030 properties (73 in every 10,000 properties)	WORSE 6000 properties (108 litres per property per day)	NO CHANGE 4030 properties (73 in every 10,000 properties)
Tap Water Appearance Number of customer contacts about appearance of tap water each year	NO CHANGE 1400 contacts (25 in every 10,000 properties)	NO CHANGE 1400 contacts (25 in every 10,000 properties)	BETTER 2000 contacts (36 in every 10,000 properties)
Low Water Pressure Properties at risk of receiving low pressure	NO CHANGE 11 properties (0.2 in every 10,000 properties)	NO CHANGE 5 properties (0.1 in every 10,000 properties)	BETTER 0 properties (0.0 in every 10,000 properties)
Water Bill Change in annual bill from 2025	No change	£5 increase (41p more per month)	£10 decrease (83p less per month)

Which option do you prefer?

Please just choose the option that you think has the best combination of service levels and change in bill for you. There is no right or wrong answer.

	Option A	Option B	Option C
Leakage Percentage of water lost due to leakage each year	NO CHANGE 13% (65 litres per property per day)	BETTER 6% (30 litres per property per day)	WORSE 17% (85 litres per property per day)
Supply Interruptions Number of properties affected by unexpected interruptions to water supply each year	NO CHANGE 4030 properties (73 in every 10,000 properties)	WORSE 6000 properties (108 litres per property per day)	NO CHANGE 4030 properties (73 in every 10,000 properties)
Tap Water Appearance Number of customer contacts about appearance of tap water each year	NO CHANGE 1400 contacts (25 in every 10,000 properties)	NO CHANGE 1400 contacts (25 in every 10,000 properties)	BETTER 2000 contacts (36 in every 10,000 properties)
Low Water Pressure Properties at risk of receiving low water pressure			
Water Bill Change in annual bill from 2025	No change	£5 increase (41p more per month)	£10 decrease (83p less per month)

Which option do you prefer?

Tip: Click one of the circles to make your choice. The chosen option and the circle underneath is highlighted.

Annex 3: Econometric outputs

- Household
- Non-household

Household – DCE Block 1

MXL model							
Number of obs:	8,820						
Loglikelihood:	-2746.8						
LR chi2(5)	326.35						
Prob > chi2	0.0000						
Model Pseudo R2	0.150						
Model estimation	Coeff.	Robust Std. Err.	z	P> z 	95% CI		
SQ	1.086	0.07	15.27	0.00	0.95	1.23	
Leakage	-0.109	0.01	-10.75	0.00	-0.13	-0.09	
Interruptions	-0.004	0.00	-3.25	0.00	-0.01	0.00	
Discolouration	-0.005	0.00	-7.02	0.00	-0.01	0.00	
Low Pressure	-0.001	0.00	-3.57	0.00	0.00	0.00	
Change in Bill	-0.026	0.00	-5.96	0.00	-0.03	-0.02	
s.d Leakage	0.11	0.02	7.42	0.00	0.08	0.14	
s.d Interruptions	0.00	0.00	-0.71	0.48	-0.01	0.01	
s.d Discolouration	0.01	0.00	4.04	0.00	0.00	0.01	
s.d Low PressureLeakage	0.00	0.00	8.01	0.00	0.00	0.00	
s.d Change in Bill	0.04	0.01	5.31	0.00	0.03	0.06	
Marginal WTP estimates	Coeff.	Robust Std. Err.	z	P> z 	95% CI		Units
Leakage	4.25	0.80	5.29	0.00	2.68	5.83	1% change
Interruptions	0.14	0.04	3.80	0.00	0.07	0.21	1% change
Discolouration	0.19	0.04	4.58	0.00	0.11	0.27	1% change
Low Pressure	0.03	0.01	2.99	0.00	0.01	0.05	1% change

Household – DCE Block 2

MXL model							
Number of obs:	8,820						
Loglikelihood:	-2865.6						
LR chiz(6)	189.36						
Prob > chiz	0.0000						
Model Pseudo R2	0.113						
Model estimation	Coeff.	Robust Std. Err.	z	P> z 	95% CI		
SQ	0.81	0.08	9.54	0.00	0.64	0.98	
Severe Water Restrictions	-0.41	0.08	-5.06	0.00	-0.56	-0.25	
Biodiversity	0.02	0.01	2.17	0.03	0.00	0.03	
Customer Water Use	-0.02	0.00	-8.78	0.00	-0.02	-0.01	
Customer Complaints	-0.02	0.00	-5.81	0.00	-0.03	-0.01	
Change in Bill	-0.04	0.00	-8.56	0.00	-0.05	-0.03	
s.d Severe Water Restrictions	0.71	0.13	5.34	0.00	0.45	0.98	
s.d Biodiversity	0.11	0.01	11.57	0.00	0.09	0.13	
s.d Customer Water Use	0.02	0.00	4.57	0.00	0.01	0.03	
s.d Customer Complaints	0.00	0.02	-0.13	0.90	-0.04	0.04	
s.d Change in Bill	0.06	0.01	8.14	0.00	0.04	0.07	
Marginal WTP estimates	Coeff.	Robust Std. Err.	z	P> z 	95% CI		Units
Severe Water Restrictions	9.75	1.93	5.04	0.000	5.96	13.54	nr per 100 years
Biodiversity	0.38	0.17	2.28	0.023	0.05	0.70	Score per 10,000 population
Customer Water Use	0.41	0.06	6.45	0.000	0.29	0.54	l/p/d
Customer Complaints	0.48	0.10	4.87	0.000	0.29	0.68	nr per 10,000 properties

Household – Package Exercise

Parametric Models

Overall Package WTP

Logistic regression Number of obs = 588
 Wald chi2(1) = 7.30
 Prob > chi2 = 0.0069
 Log pseudolikelihood = -393.59107 Pseudo R2 = 0.0103

choice	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
bill	-.0171481	.0063484	-2.70	0.007	-.0295907	-.0047055
_cons	.0102185	.164027	0.06	0.950	-.3112685	.3317055

packwtp1g: - (_b[_cons]/_b[bill])

choice	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
packwtp1g	.5958983	9.379216	0.06	0.949	-17.78703	18.97882

With segmentation by SEG

Logistic regression Number of obs = 588
 Wald chi2(3) = 13.95
 Prob > chi2 = 0.0030
 Log pseudolikelihood = -390.24627 Pseudo R2 = 0.0187

choice	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
bill	-.0177178	.0063412	-2.79	0.005	-.0301464	-.0052892
segAB	.5883632	.2535487	2.32	0.020	.0914169	1.085309
segC1C2	.2979353	.2621533	1.14	0.256	-.2158757	.8117462
_cons	-.3434862	.2574796	-1.33	0.182	-.8481369	.1611645

packwtpseg: - ((_b[_cons]+_b[segAB])/_b[bill])

choice	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
packwtpseg	13.65758	7.891951	1.73	0.084	-1.810362	29.12552

Non-Parametric Models

Overall Package WTP

Bid	Nj	Tj	Fj	Nj*	Turnbull Tj*	Estimates Fj*	fj*	Elb	V(Elb)	Eub
0			0.000			0.000		0.000		2.536
5	35.000	69.000	0.507	35.000	69.000	0.507	0.507	0.178	0.091	0.356
10	38.000	70.000	0.543	38.000	70.000	0.543	0.036	0.399	0.089	0.598
15p	42.000	69.000	0.609	81.000	139.000	0.583	0.040	0.045	0.044	0.075
20p	39.000	70.000	0.557							
25	41.000	70.000	0.586	41.000	70.000	0.586	0.003	2.264	0.347	3.169
35p	48.000	70.000	0.686	94.000	139.000	0.676	0.091	11.331	0.158	48.561
50p	46.000	69.000	0.667							
150			1.000			1.000	0.324			
Total	289.000	487.000		289.000	487.000			14.216	0.727	55.295

Note: (p) pooled category. Last bid value was arbitrarily chosen. Pval(Elb) = 0.00000.

SEG = AB

Bid	Nj	Tj	Fj	Nj*	Turnbull Tj*	Estimates Fj*	fj*	Elb	V(Elb)	Eub
0			0.000			0.000		0.000		2.750
5p	20.000	36.000	0.556	44.000	80.000	0.550	0.550	0.033	0.077	0.098
10p	24.000	44.000	0.545							
15p	23.000	39.000	0.590	64.000	115.000	0.557	0.007	0.196	0.215	0.458
20p	22.000	39.000	0.564							
25p	19.000	37.000	0.514							
35p	25.000	39.000	0.641	45.000	79.000	0.570	0.013	15.063	1.241	64.557
50p	20.000	40.000	0.500							
150			1.000			1.000	0.430			
Total	153.000	274.000		153.000	274.000			15.292	1.533	67.863

Note: (p) pooled category. Last bid value was arbitrarily chosen. Pval(Elb) = 0.00012.

Non-Household – DCE Block 1

MXL model							
Number of obs:	3,030						
Loglikelihood:	-995.0						
LR chiz(5)	31.06						
Prob > chi2	0.0000						
Model Pseudo R2	0.103						
Model estimation	Coeff.	Robust Std. Err.	z	P> z 	95% CI		
SQ	0.91	0.09	10.44	0.00	0.74	1.08	
Leakage	-0.09	0.01	-6.32	0.00	-0.12	-0.06	
Interruptions	-0.01	0.00	-2.81	0.01	-0.01	0.00	
Discolouration	0.00	0.00	-4.35	0.00	-0.01	0.00	
Low Pressure	0.00	0.00	-1.60	0.11	0.00	0.00	
Change in Bill	-0.13	0.08	-1.57	0.12	-0.28	0.03	
s.d Leakage	0.09	0.02	3.92	0.00	0.04	0.13	
s.d Interruptions	-0.01	0.00	-2.75	0.01	-0.01	0.00	
s.d Discolouration	0.00	0.00	2.22	0.03	0.00	0.01	
s.d Low PressureLeakage	0.00	0.00	-5.24	0.00	0.00	0.00	
s.d Change in Bill	-0.32	0.14	-2.21	0.03	-0.60	-0.04	
Marginal WTP estimates (% change in bill)	Coeff.	Robust Std. Err.	z	P> z 	95% CI		Units
Leakage	0.707	0.4710	1.5000	0.134	-0.2165	1.6296	1% change
Interruptions	0.040	0.0210	1.93	0.054	-0.0007	0.0815	1% change
Discolouration	0.035	0.023	1.53	0.127	-0.0099	0.0797	1% change
Low Pressure	0.005	0.0042	1.10	0.271	-0.0036	0.0128	1% change

Non-Household – DCE Block 2

MXL model							
Number of obs:	3,030						
Loglikelihood:	-1029.5						
LR chiz(5)	67.93						
Prob > chiz	0.0000						
Model Pseudo R2	0.072						
Model estimation	Coeff.	Robust Std. Err.	z	P> z 	95% CI		
SQ	0.66	0.11	6.15	0.00	0.45	0.88	
Severe Water Restrictions	-0.45	0.13	-3.39	0.00	-0.71	-0.19	
Biodiversity	0.02	0.01	1.49	0.14	-0.01	0.04	
Customer Water Use	-0.01	0.00	-4.87	0.00	-0.02	-0.01	
Customer Complaints	-0.02	0.01	-3.96	0.00	-0.03	-0.01	
Change in Bill	-0.20	0.08	-2.47	0.01	-0.35	-0.04	
s.d Severe Water Restrictions	0.81	0.22	3.66	0.00	0.38	1.25	
s.d Biodiversity	0.08	0.01	6.37	0.00	0.06	0.11	
s.d Customer Water Use	0.01	0.01	1.16	0.24	-0.01	0.03	
s.d Customer Complaints	-0.02	0.01	-1.35	0.18	-0.04	0.01	
s.d Change in Bill	0.65	0.11	5.69	0.00	0.43	0.87	
Marginal WTP estimates	Coeff.	Robust Std. Err.	z	P> z 	95% CI		Units
Severe Water Restrictions	2.32	1.09	2.13	0.033	0.184	4.447	nr per 100 years
Biodiversity	0.09	0.06	1.52	0.129	-0.027	0.211	Score per 10,000 population
Customer Water Use	0.07	0.03	2.21	0.027	0.008	0.133	l/p/d
Customer Complaints	0.11	0.05	2.03	0.043	0.004	0.208	nr per 10,000 properties

Thank You

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