**Customer valuations for service improvements results**

Ahead of Ofwat's work to set ODI rates for the industry, we conducted an updated review of our service valuation research we conducted at PR19[1]. We did this, to understand what our customers were telling us about their priorities and valuations were against the package of measures being proposed.

We created a paper version of our PR19 online tool to ask customers to value different service improvements, across the whole package of measures – including the common measures and a small selection of possible bespoke measures. This was important as we wanted customers to have as fuller picture as possible against the service measure package. Using a paper version allowed the research to be conducted face to face; allowing the use of actual denominations of plastic money and providing the opportunity for respondents to easily play around with their choices. To make sure we had a representative sample we conducted 2,000 tests across the North East (1,000), Essex (648) and Suffolk (352). Full details of how this research was conducted is available in our Appendix A7 Customer and Stakeholder Engagement Appendix.

**Results**

High proportion of customers not willing to pay for improvements to service.

The output of this research provided customer valuations (in £) for a set level of performance improvement. The responses by measure generally followed the same pattern with a large number of customers not wanting an improvement, by showing no value for the improvement (£0). There was a descending number of customers as the overall value increased for the performance improvement. This created a downward curve against increasing customer valuations.

Shown below is the overall percentage of participants against each measure that indicated they were not willing to pay for improvements to service.

FIGURE 1: Percentage of customers not willing to fund performance improvements.

| | % of participants not willing to fund improvement |
|---|---|
| Interruptions to Supply 1- 3hrs | 85.6% |
| Business Demand | 84.0% |
| Interruptions to supply over three hours | 82.8% |
| Interruptions to Supply 12hrs | 80.2% |
| Unplanned Outage | 76.3% |
| PCC | 75.1% |
| Biodiversity | 72.6% |
| River Water Quality | 70.3% |
| Storm Overflows | 69.0% |
| Repeat Sewer Flooding | 68.8% |
| Greenhouse Gases | 68.8% |
| Visible Leakage | 67.7% |
| Water Quality Contacts | 67.1% |
| Pollutions (all) | 66.1% |
| Internal Sewer Flooding | 65.3% |

[1] NES PR24 Copperleaf Service Valuation – Appendix A7 Customer and Stakeholder Engagement

| | |
|---|---|
| Bathing Water Quality | 65.1% |
| Discharge Compliance | 64.8% |
| Sewer Collapses | 64.7% |
| Bluespaces | 64.7% |
| External Sewer Flooding | 64.3% |
| Sewer Blockages | 64.1% |
| Mains Bursts | 63.7% |
| Leakage | 63.2% |
| Serious Pollutions | 58.2% |

Source: NWL

The data also indicated that approximately 30% of respondents in NW and 20% in ESW that indicated £0 against all measures (therefore total £0) potentially reflects the ongoing affordability crisis within the country at the time of survey.

Calculating the mean of customer valuations across the measures

The service valuation research conducted had two separate sets of results, set a, where customers were asked to provide a valuation by measure, and set b where customers were asked if they wanted to make any changes to their original allocation.

To calculate results, set b were used as they were considered the final valuations from customers.

We took the mean valuation of all customer valuations by measure; this included the large proportion of customers that indicated they would not be willing to pay to improve the performance (an unadjusted dataset).

These valuations were then tested against the overall range, and we determined that these means were higher than the 75$^{th}$ percentile valuation. This occurred as the research results showed a small number of customers who were willing to pay a relatively large amount per measure in comparison to the overall value of their bill (often 100% of their bill). This occurred as we had not set any upper limit on the value customers could place on any given measure.

Setting the maximum valuation by measure

This small number of customers willing to pay relatively large amounts for service improvements was skewing the results higher than the core group.

A review of the maximum valuations by measure was conducted and the range of upper valuations by measure was between £50 and £333 per measure.

Several cuts of the data were conducted, which included:

- Full unadjusted data set
- Two and three standard deviations
- Maximum 10% of customer average bill per measure.

After review of these data sets, the final cut of data applied was that of two standard deviations from the mean. This gave the following advantages:

- It included all the £0 valuations from customers who did not want to pay for improvements. These were legitimate responses by customers, especially at the time of the ongoing affordability crisis.

- It removed the upper valuations from each measure, where it could be considered the customer had not either understood the exercise or had not potentially read the whole instructions. The range of maximum valuations by measure moved to between £5 and £30 (only one measure at £30).
- This moved the mean valuation for most measures below the mean.

**Converting the customer mean valuations to marginal benefits and outcome delivery incentives.**

Customer valuations were then converted to a marginal benefit by measure (the valuation per unit of the measure improved) by dividing the value respondents allocated in the research by the number of units of service improvement.

As the results were with household customers only our values will be the minimum, as non-household respondents have higher valuations. This would have driven the overall marginal benefit figures higher.

We provide the average customer valuation by measure and per unit of improvement. To obtain the marginal benefit, the value below require multiplying by the final property counts. To obtain the ODI valuation we would apply the formula within Ofwat's methodology, where ODI = MB x 70%.

FIGURE 2: Mean Customer valuation per unit of improvement.

| Measure | Unit of measurement | Mean valuation NW £ | Mean Valuation ESW £ |
|---|---|---|---|
| Serious Pollutions | per serious pollution | 0.98645833 | 2.66129032 |
| Treatment Works Compliance | per 1% | 1.00833333 | n/a |
| Unplanned Outage | Per % | 0.30874732 | 0.74465858 |
| ITS 1 - 3 hrs | per min over 1 hr (less than 3) | 0.34057222 | 0.34228428 |
| Visible Leaks | per day | 0.16958641 | 0.42189204 |
| ITS 3 hrs | per min over three hours | 0.17785340 | 0.26923077 |
| Bathing Water Quality | per bathing water improved to excellent | 0.19228363 | n/a |
| Storm Overflows | per average overflow | 0.16738906 | n/a |
| Repeat Flooding | per repeat | 0.14663712 | n/a |
| Leakage NW | per MLD | 0.03125433 | n/a |
| Biodiversity | Per BU | 0.04630593 | 0.09578834 |
| Leakage (ESW) | Per % reduction | n/a | 0.16094421 |
| Business Demand | Per MLD | 0.03665284 | 0.03210678 |
| PCC | Per litre/ person / day | 0.01598721 | 0.03271871 |
| Pollutions | per pollution | 0.03379575 | n/a |
| River Water Quality | per kg P | 0.03296794 | n/a |
| Sewer Collapse | per collapse | 0.02637022 | n/a |
| GHG | Per 1% reduction | 0.00765738 | 0.01396146 |
| Internal Flooding | Per incident | 0.01598969 | n/a |
| ITS 12 hrs | Per property | 0.00422008 | 0.00763562 |
| Mains Burst | per mains repair | 0.00478395 | 0.00375404 |
| Blue Spaces | Per KM | 0.00294050 | 0.00621137 |
| Water Quality | per contact | 0.00172435 | 0.00443337 |
| External Flooding | Per incident | 0.00260331 | n/a |

| Measure | Unit of measurement | Mean valuation NW £ | Mean Valuation ESW £ |
|---|---|---|---|
| Sewer Blockages | per blockage | 0.00051506 | n/a |

Source: NWL analysis

**Creating a priority ranking based on our service valuation research.**

To determine a priority ranking of measures based on the service valuation results that could be used in the wider customer engagement triangulation exercise, a composite ranking was created which consider the two key results from the results shown above.

- The percentage of customers that did not want to pay for service improvements.
- The overall mean that customers placed on each measure. (we used the mean as it was felt customers were unlikely to have taken an mental assessment of how much they were paying per unit of improvement when allocating their amounts of money in the assessment).

A rank was assigned for each measure under the two criteria, which was then averaged across the two to give the final rank. Below provides the results of this assessment which is fed into the customer engagement triangulation database.

FIGURE 3: Service Valuation – Priority ranking of measures by respondents.

| | NW and ESW | NW Only | ESW Only |
|---|---|---|---|
| Serious Pollutions | 1 | 6 | 1 |
| Mains Burst | 2 | 1 | 5 |
| Sewer Blockages | 3 | 2 | |
| External Flooding | 3 | 2 | |
| Leakage NW | 3 | 11 | 2 |
| Sewer Collapse | 6 | 4 | |
| Internal Flooding | 7 | 5 | |
| Blue Spaces | 8 | 16 | 2 |
| Water Quality | 9 | 15 | 2 |
| Treatment Works Compliance | 10 | 7 | |
| Pollutions | 11 | 8 | |
| Bathing Water Quality | 12 | 10 | |
| Repeat Flooding | 13 | 8 | |
| GHG | 14 | 13 | 7 |
| Visible Leaks | 15 | 17 | 6 |
| Storm Overflows | 16 | 12 | |
| River Water Quality | 17 | 13 | |
| Biodiversity | 18 | 18 | 8 |
| Unplanned Outage | 19 | 20 | 9 |
| PCC | 19 | 19 | 10 |
| ITS 12 hrs | 21 | 21 | 11 |
| ITS 3 hrs | 22 | 22 | 12 |
| Business Demand | 23 | 22 | 13 |
| ITS 1 - 3 hrs | 24 | 24 | 13 |

Source: NW Analysis on Copperleaf Service Valuation Research

The above results were provided for the customer and stakeholder engagement triangulation.