Affordability of Communications Services

Consumer Research Technical Annex

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Background

A1.1   We have been tracking consumers' attitudes and behaviours during the pandemic through Ofcom's Communications Affordability Tracker (formerly named the Covid-19 Affordability Tracker). Ofcom commissioned monthly telephone interviews among c.1,100 UK households from June 2020. The research focuses on affordability issues that consumers in the communications market may be facing and asks about any actions they have taken to help afford communications services in the month prior to interview. Following data collection in April 2021, we switched to bi-monthly research. Resultingly, the following data collection period after April 2021 was June 2021.

A1.2   Analysis in the 'February 2022 Affordability Report' uses data from individual waves of research where sample sizes allow. It also uses combined data from waves of research in June, August and October 2021 to understand affordability issues among sub-groups. This represents fewer waves of data than have been considered in our previous affordability reports published in July 2021 and December 2020. In some instances, this prevents us from replicating previous analysis as the base sizes for subgroups are below 100. Full data tables are available on the Ofcom website.

Caveats to analysis

A1.3   **Income analysis**: Analysis by income (e.g., the lowest household income category) is indicative only as a relatively high proportion (38%) of respondents did not answer this question. Non-response is skewed towards lower socio-economic groups. Therefore, it is possible that affordability issues among the lowest income category are understated.

A1.4   **Age, ethnicity and working status:** These data points are based on the decision-maker for communications services in the household and do not reflect the make-up of the household. We do not collect these data for all members of the household.

A1.5   **Comparison with DWP data**: The proportion of the sample allocated to individual benefits categories[1] in the Communications Affordability Tracker (June to October 2021 waves) is lower than expected when compared to Ofcom analysis of data reported by the Department for Work and Pensions ("DWP").

A1.6   However, indications suggest these respondents are reflected in the overall sample. For example, socio-economic group E is well-represented in the data among both older (65+) and younger (under 65) age groups; the non-response rate to this question was low (5%); and 8% of respondents stated they were only in receipt of an 'other' benefit not listed – potentially a means-tested benefit. It is also possible that some respondents in receipt of

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[1] Respondents are asked the following question: Could you please tell us whether you or anyone in your household currently receives any of the following benefits? Codes include 'none of these' as an option.

benefits may have been reluctant to share this information with interviewers, given the sensitivities.

Statistical significance testing

A1.7 When comparing results between demographic groups or between a group and the total population, we conduct two-tailed statistical tests[2] and only report significant differences at the 95% confidence level.[3] When comparing results between one wave of research and another, or between the first reporting period of June to October 2020 data, the second reporting period of November 2020 to April 2021 data and this latest reporting period of June to October 2021 data, we conduct two-tailed statistical tests and only report significant differences at the 99% confidence level. Wave on wave comparisons are tested at the 99% level to account for any slight differences in methodology across waves.

Overview of methodology

A1.8 **Methodology**: CATIbus (telephone) survey run by Ipsos MORI.

A1.9 **Core objective**: To provide Ofcom with continued understanding of consumer affordability issues in the UK communications markets (covering mobile, landline, fixed broadband, pay TV and on-demand TV services).

A1.10 **Sample size**: 3269 (rolled across 3 waves).

A1.11 **Fieldwork period**: The fieldwork for the rolled data referenced in this report was carried out during June (4th-9th) 2021, August (6th-11th) 2021 and October (1st-6th) 2021. The previous waves of fieldwork were conducted on a monthly basis between June 2020 and April 2021. Fieldwork generally takes place in the first week of each month and therefore experiences largely reflect those of the previous month e.g., October fieldwork will largely reflect experiences in September.

A1.12 **Sample definition**: UK adults aged 18+, identifying those who are either the sole or joint decision-maker for communications services in their household and/or those who personally use a mobile phone, for the main survey. Quotas are set on age, gender, working status and geographical regions. This sample also included a Northern Ireland boost.

A1.13 The respondent base by service includes those who currently have the service in their household and those who said that they cancelled that service in the month prior to interview.

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[2] If we compare whether one demographic group is significantly different from another, two-tailed tests indicate whether the demographic group is significantly higher or lower than the comparison group. This differs from one-tailed tests, which explicitly test for differences in one direction. Therefore, if we hypothesised one group was significantly higher than the comparison and used a one-tailed test to assess this, if it turns out that group was significantly lower than the comparison, this would not be flagged.

[3] The confidence interval represents a range in which, if we repeated the survey 100 times, we would expect 95 of 100 samples' confidence intervals to contain a value that is equal to the actual number of households experiencing this issue.

A1.14 The overall sample is based on and weighted to be representative of all UK adults. While the profile of the UK adult population is distinct from the profile of UK households, the questions were answered by a single person in the household and largely relate to what they, or anyone in their household has done or experienced. Therefore, we did not consider it necessary to reweight the data to be representative of UK households as we expect the decision maker sample to be representative of UK households.

A1.15 **Sampling process**: Respondents were identified using random digit dialing. Mobile numbers have a selection probability proportional to mobile network market share, while landline numbers have a selection probability proportional to their population distribution across government office regions. On average, the unweighted split between mobile and landline interviews from June to October 2021 was 59% mobile and 41% landline; however, the exact mobile to landline split varied each month. The unweighted proportion of mobile is significantly higher this research period than last (53% mobile in November 2020 to April 2021). However, when weighted, both research periods have 60% mobile respondents and 40% landline, and resultingly the unweighted difference should not affect findings.

A1.16 **Weighting**: The overall data have been post-weighted to ensure they are representative of the UK adult population. This sample was weighted to be representative of UK profile (including non-telephone owning households) for the key demographic variables of; gender by age, region, social grade and working status. Full details of the sampled and weighted profile (i.e., June to October 2021) of the sole or joint decision-maker for communications services in their household and/or those who personally use a mobile phone are included below.

Full sample and weighting for combined dataset

	Interviews achieved	Weighted
Total[4]	3269	3264
Gender		
Male	1607 (49%)	1587 (49%)
Female	1645 (50%)	1660 (51%)
Age groups		
18-24	296 (9%)	344 (11%)
25-34	461 (14%)	562 (17%)
35-44	494 (15%)	526 (16%)
45-54	603 (18%)	558 (17%)
55-64	569 (17%)	508 (16%)
65-74	460 (14%)	425 (13%)
75+	382 (12%)	339 (10%)
Regions		

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[4] When totals in these categories do not sum to 3269/100%, this is because some respondents chose not to answer this question, or a non-standard answer was provided. We omitted this category from this section as less than 100 people gave this answer. Data based on latest Office for National Statistics ("ONS") population estimates.

North East	128 (4%)	133 (4%)
Yorkshire and Humberside	215 (7%)	266 (8%)
East Midlands	193 (6%)	232 (7%)
Eastern	277 (8%)	305 (9%)
Greater London	394 (12%)	426 (13%)
South East	381 (12%)	445 (14%)
South West	252 (8%)	285 (9%)
West Midlands	256 (8%)	286 (9%)
North West	312 (10%)	358 (11%)
Wales	174 (5%)	155 (5%)
Scotland	391 (12%)	277 (9%)
Northern Ireland	296 (9%)	97 (3%)
Socio-economic group		
A	175 (5%)	182 (6%)
B	593 (18%)	679 (21%)
C1	1171 (36%)	796 (24%)
C2	456 (14%)	677 (21%)
D	282 (9%)	464 (14%)
E	366 (11%)	302 (9%)
Other	226 (7%)	164 (5%)
Working status		
Any working	1910 (58%)	1927 (59%)
Any not working	1351 (41%)	1330 (41%)

Population estimates quoted in the report

A1.17 In this report we have included population estimates based on percentages from the *Communications Affordability Tracker* and Office for National Statistics ("ONS") estimates on the number of households in the UK.

A1.18 These population estimates from the *Communications Affordability Tracker* are:

a) the number of households that experienced an affordability issue with any communications services 'in the last month' (18% of total UK households in October – table A12);

b) the number of households that experienced an affordability issue with fixed broadband 'in the last month' (5% of households that own/recently owned fixed broadband in October 2021, which equates to 4% of total UK households – table A13);

c) the number of households that had an affordability issue with their smartphone mobile service in the last month (4% of smartphone owning households in October 2021, which equates to 4% of total UK households – table A14);

d) the number of households that had a fixed broadband affordability issue and/or a smartphone mobile affordability issue in the last month (8% of smartphone or fixed broadband owning households in October 2021 which equates to 7% of total UK households in October – table A15).

A1.19   The population estimates based on the *Communications Affordability Tracker* data quoted in the report are from the October 2021 wave (n=1089), as it is not possible to calculate a robust population estimate for the combined total number of households that had an affordability issue over the duration of the rolled data (i.e., June to October 2021). Our survey data suggests some households have continuing affordability issues, and others have only experienced these for a number of months over the full survey period. Therefore, adding monthly totals would include some double counting, and the survey data cannot reliably establish to what extent this is the case.

A1.20   As we cannot know exactly how many households in the UK are experiencing an issue, alongside each population estimate, we provide a 95% confidence interval. Confidence intervals indicate the range within which we are 95% sure contains the 'real' number of households in the UK in a particular group[5]. These confidence intervals are given in the form of a range around the midpoint value (e.g., +/- 500,000 households) in the main report footnotes, and as an estimate of the upper or lower bound number of households in a particular group in the tables below.

A1.21   We generate these by calculating a confidence interval around the estimated number of households that are in our population of interest, and then multiplying these upper and lower bounds by the number of households in the UK.

A1.22   All generated household estimates and confidence intervals are reported to the nearest 100,000 and use the latest ONS population estimates. This is the standard rounding that Ofcom use in producing population estimates from survey data with a sample size of around 1100. Larger samples sizes are required in order to provide more precision.

Updates to Population Estimates Calculation Methodology

A1.23   Since our July 2021 affordability report, we have updated our methodology for calculating the confidence intervals around our population estimates. This updated methodology accounts for variability in the proportion of each base group of interest to provide a wider confidence interval. However, the midpoint estimates are calculated in the same way and remain directly comparable to those given in previous affordability reports. A comparison of the steps taken for the two different methodologies and their output is given below in table A10. Table A11 then shows a comparison between how the 'Any fixed broadband affordability issue in the last month' household estimate from our July 2021 publication (calculated using data from April 2021) was calculated using the previous method, vs how it would be calculated now, to indicate how this methodology change affects the confidence intervals.

A1.24   Before describing our updated methodology of calculating population estimates, it is helpful to distinguish between the sample, the subgroup and the group of interest:

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[5] A 95% confidence interval indicates that 19/20 samples (95%) from the sample population will produce confidence intervals that contain the 'real' proportion of households in a particular group.

- **Sample:** The overall population that took part in the survey (e.g., 18+ Adults)

- **Subgroup:** The smaller group of respondents within the survey population that are eligible to be in the population of interest (e.g., respondents to the survey that own or recently cancelled their fixed broadband contract)

- **The population of interest:** Those within the subgroup that complete the behaviour you want to generate the population estimate for (e.g., within the subgroup of those who own/recently owned fixed broadband, the proportion that had an affordability issue with this service)

A1.25   Below describes our updated method of calculating population estimates that accounts for the variability in the size of the subgroup as a proportion of the overall sample and the variability in the prevalence of the population of interest within the subgroup. This is given in comparison to our prior method.

Table A10: Methodology Comparison - Previous vs Updated methods of calculating 95% confidence intervals around population estimates

	Previous Method	Updated Method
1	Rebase the percentage of interest so that it becomes the percentage of the UK households facing a specific issue, rather than the percentage of a specific subgroup facing this issue	Calculate the midpoint, upper, and lower-bound for the percentage of the subgroup in the overall sample.
2		Multiply these percentages by the overall sample size to convert them to estimates of the number in the sample that belongs to the subgroup
3		Calculate the midpoint, upper, and lower bounds for the percentage of the subgroup that belongs to the population of interest
4		Combine these two sets of confidence intervals by multiplying the upper-bound estimate of the number of individuals in the subgroup by the upper-bound percentage of individuals of the subgroup in the population of interest. This creates an overall upper-bound estimate of the number of respondents in the population of interest. Repeat for the midpoint and lower-bound estimates.
5	Calculate upper, mid and lower-bound estimates of the percentage of the	Divide the combined upper, mid and lower-bound estimates of the number of respondents in the population of interest by

	population of interest in the overall sample.	the overall sample size to create upper, midpoint and lower-bound estimates of the percentage of the population of interest in the sample.
6	To finally generate the population estimates and their confidence intervals, multiply the confidence intervals and midpoint percentages of the population of interest in the sample by the ONS estimates of the sample's number of people/households, and round these figures to the nearest 100,000.	To finally generate the population estimates and their confidence intervals, multiply the confidence intervals and midpoint percentages of the population of interest in the sample by the ONS estimates of the sample's number of people/households, and round these figures to the nearest 100,000.
7	To get the range around the midpoint, get the exact distance between the midpoint and the upper or lower bound (it doesn't matter which as they are an equal distance) and round this value to the nearest 100,000.	To get the range around the midpoint, get the exact distance between the midpoint and the upper or lower bound (it doesn't matter which as they are an equal distance) and round this value to the nearest 100,000.

Previous vs Updated method example – Household estimate April 2021 Fixed Broadband Affordability issues

Table A11: Methodology Comparison: Any fixed broadband affordability issue, in the last month – April 2021

Number of Households[6]	27,792,000			
	Previous Method		**Updated method**	
	% in group	Population estimate	% in group	Population estimate
Midpoint	**2.9%**	800,000	**2.9%**	800,000
Upper bound	**3.7 %**	1,000,000	**3.8%**	1,100,000
Lower bound	**2.1%**	600,000	**2.1%**	600,000
Household Estimate				

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[6] Office for National Statistics, March 2021. Families and households in the UK: 2020.

Range around midpoint	800,000 +/- 200,000	800,000 +/- 300,000

A1.26   This approach taken to calculate the population estimates referenced in the report is shown in the tables below. Data in **bold** and red illustrate the %s used in the population calculation and the population estimate.

Communications Affordability Tracker population estimates

Table A12: Any communications affordability issue, in the last month

	% quoted in report (rolled waves 12-14)		October 2021 data (used in population estimates)
	UK Households		UK Households
	June to October 2021	October 2021	October 2021[7]
Weighted Base	3264	1089	1089
Percentage of base that experienced any type of affordability issue	17%	18%	**18% (n=200)**

	Average	Upper Bound	Lower Bound
1. % of Decision Maker subgroup in October sample	100%	100%	100%
2. Estimated number of subgroup in October sample	1089	1089	1089
3. % of subgroup in population of interest	18%	21%	16%
4. Combined population estimate – number of individuals in population of interest in subgroup of interest	200	225	175
Overall Sample Size	1089		
5. Combined population estimate – percentage of individuals in population of interest in overall sample	**18%**	**21%**	**16%**

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[7] Rounded to represent the % quoted in the main report.

	Average	Upper Bound	Lower Bound
% in population	**18%**	**21%**	**16%**
ONS estimate number in group	27,792,000		
6. Population Estimate	**5,100,000**	5,700,000	4,500,000
7. Range around Midpoint	5,100,000 +- 600,000		

Table A13: Any fixed broadband affordability issue, in the last month

	% quoted in report (rolled waves 12-14)		October 2021 data (used in population estimates)
	Fixed Broadband Households		**UK Households**
	June to October 2021	October 2021	October 2021
Weighted Base	2636	875	1089
Percentage of base that experienced a broadband affordability issue	3%	5%	**4% (n=45)**

	Average	Upper Bound	Lower Bound
1. % of Fixed Broadband owning subgroup in October sample	80%	83%	78%
2. Estimated number of subgroup in October sample	875	901	849
3. % of subgroup in population of interest	5%	7%	4%
4. Combined population estimate – number of individuals in population of interest in subgroup of interest	45	60	31
Overall Sample Size	1089		
5. Combined population estimate – percentage of individuals in population of interest in overall sample	**4%**	**5%**	**3%**

	Average	Upper Bound	Lower Bound
% in population	**4%**	**5%**	**3%**
ONS estimate number in group		27,792,000	
6. Population Estimate	**1,100,000**	1,500,000	800,000
7. Range around midpoint		1,100,000 +- 400,000	

Table A14: Any mobile affordability issue in the last month among those that own a <u>smartphone</u>[8]

	% quoted in report (rolled waves 12-14)		October 2021 data (used in population estimates)
	Smartphone owning households		UK Households
	June to October 2021	October 2021	October 2021
Weighted Base	2758	916	1089
Percentage of base that experienced a mobile affordability issue	6%	4%	**4% (n=40)**

	Average	Upper Bound	Lower Bound
1. % of Smartphone owning subgroup in October sample	84%	86%	82%
2. Estimated number of subgroup in October sample	916	940	892
3. % of subgroup in population of interest	4%	6%	3%
4. Combined population estimate – number of individuals in population of interest in subgroup of interest	40	53	27
Overall Sample Size		1089	
5. Combined population estimate – percentage of individuals in population of interest in overall sample	**4%**	**5%**	**2%**

	Average	Upper Bound	Lower Bound
% in population	**4%**	**5%**	**2%**

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[8] **Note**: this estimate assumes mobile affordability issues among smartphone owners at least in part relates to affordability of mobile internet services.

ONS estimate number in group	27,792,000		
6. Population Estimate	**1,000,000**	1,400,000	700,000
7. Range around Midpoint	1,000,000 +- 300,000		

Table A15: Any fixed broadband and/or mobile affordability issue (in those that own a smartphone), in the last month

	% quoted in report (rolled waves 12-14)		October 2021 data (used in population estimate)
	% quoted in report (rolled waves 12-14)	October 2021 data (used in population estimates)	
	Smartphone or Fixed broadband owning households		UK Households
	June to October 2021	October 2021	October 2021
Weighted Base	3002	998	1089
Percentage of base that experienced any affordability issue with their fixed broadband or mobile (in those that own a smartphone)	8%	8%	**7% (n=78)**

		Average	Upper Bound	Lower Bound
1.	% of Smartphone or Fixed Broadband owning subgroup in October sample	92%	93%	90%
2.	Estimated number of subgroup in October sample	998	1016	980
3.	% of subgroup in population of interest	8%	9%	6%
4.	Combined population estimate – number of individuals in population of interest in subgroup of interest	78	96	60
	Overall Sample Size	1089		
5.	Combined population estimate – percentage of individuals in population of interest in overall sample	**7%**	**9%**	**6%**

	Average	Upper Bound	Lower Bound
% in population	7%	9%	6%
ONS estimate number in group	27,792,000		
6. Population Estimate	2,000,000	2,500,000	1,500,000
7. Range around Midpoint	2,000,000 +- 500,000		

Definitions

Any affordability issue: Households who experienced at least one affordability issue with a communications service. Some households experienced more than one affordability issue either with a given service and/or across multiple services. The nets for 'any affordability issue' only count multiple issues/services once to avoid double counting.

Multiple affordability issues: This includes those who have had the same type of affordability issue with more than one service or those who have experienced more than one type of affordability issue with either the same or different services. Those households who had more than one affordability issue are only counted once.

Mobile internet-only: Defined as those whose only method of accessing the internet is through a mobile phone or other mobile broadband device (for example a dongle or USB device). This includes households who do not own a fixed broadband service but either have access to a smartphone or a mobile broadband device.

Impacting or limiting conditions: These are households with a resident that has any conditions that impact or limit their use of communication services. These can include, but are not restricted to, problems with hearing, eyesight, mobility, mental abilities or mental health.

Lowest household income category: Household income up to £10,399 per year. This is the standard category used in Ipsos Mori's CATIbus demographic questions.

Currently unemployed and looking for work: These are respondents who when asked about their current work status, answered that they are currently unemployed and seeking work.

Receive at least one benefit: These are households who receive one or more of the following benefits: income support, income-based job seeker's allowance, pensions credit (guaranteed credit), pensions credit (no guaranteed credit), employment and support allowance (ESA), universal credit (both with and without earnings in addition to this), personal independence payment (PIP), carer's allowance, or 'other' form of benefit. Those who receive more than one form of benefit are not double counted.

Receive means tested benefits, zero earnings: These are households who receive one or more of the following benefits: income support, income-based job seeker's allowance, employment and support allowance (ESA), universal credit (without earnings in addition to this). Those who receive more than one form of these benefits are not double counted.

Receive means tested benefits: These are households who receive one or more of the following benefits: income support, income-based job seeker's allowance, employment and support allowance (ESA), universal credit (both with and without earnings in addition to this). Those who receive more than one form of these benefits are not double counted.

DE socio-economic group: Households where the chief income earner (CIE) falls within one of the following categories: semi-skilled and unskilled manual workers, state pensioners, casual and lowest grade workers, unemployed with state benefits only[9].

White Decision Maker: These are decision makers for a household who stated that their ethnicity fell into one of the following categories: White British, White Irish, White Gypsy/Traveler, White other.

Asian Decision Maker: These are decision makers for a household who stated that their ethnicity fell into one of the following categories: Asian Pakistani, Asian Bangladeshi, Asian Chinese, Asian other.

Black Decision Maker: These are decision makers for a household who stated that their ethnicity fell into one of the following categories: Black African, Black Caribbean, Black other.

Mixed Decision Maker: These are decision makers for a household who stated that their ethnicity fell into one of the following categories: Mixed White and Asian, Mixed White/Black Caribbean, Mixed White/Black African, Mixed other.

Other ethnicity Decision Maker: These are decision makers for a household who stated that their ethnicity fell into one of the following categories: Other, Mixed other, Arab (n.b. this group was included here as there were not enough respondents in this group to consider individually).

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[9] This definition is provided by the National Readership Survey.