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# Socio-economic analysis of 2015 postcode data

Summary of results

Research document

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## About this document

This report details the socio-economic status of people living in areas that do not have a connection which can deliver a predicted speed of 10Mbit/s. Ofcom commissioned Experian to append demographic and financial classifications to premises within such postcodes. The analysis is based on the 2015 Connected Nations data- which was the most current available coverage data at that time.

The document details an overview of the analysis and reports on the age profile of the postcode residents, household income, financial stress<sup>1</sup>, the urban: rural profile, household structure; and tenure.

Comparisons have been made between premises (that do not receive 10Mbit/s) and the total UK population throughout the analysis to indicate how premises within these postcodes compare to the national average. Comparisons have also been made between results for premises within these postcodes and across UK nations.

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<sup>1</sup> Experian's Financial Stress Indicator identifies an individual's potential to become financially over-stretched and struggle with further payments. It is calculated using the following data sources which are used as base data: 1) Experian consumer survey information on the number of credit cards, personal loans and payment behaviour. 2) Publicly available information on previous bad debt (e.g. County Court Judgments). A model is developed to rank individuals on their level of debt commitment.

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## Annex 1

# Background and methodology

- A1.1 In order to understand the socio-economic status of people living in areas that do not have a connection which can deliver a predicted speed of 10Mbit/s in 2015, Ofcom commissioned Experian to append demographic and financial classifications to premises within such postcodes.
- A1.2 Experian uses its database to provide a view of the UK adult population including contact information across postal, email, mobile and display channels, linking to a broad range of demographic, socio- economic and behavioural characteristics on each adult and household in the UK. Experian gathers as much information as possible, clustering postcodes into segment types and then extrapolating from areas with known data to those where data is missing.
- A1.3 The criterion for the postcodes selected for analysis was that 50% plus of connections within the postcode area do not have a connection which is delivering a speed of 10Mbit/s or more.
- A1.4 Using this criterion to select postcodes from the 2015 Connected Nations data, Ofcom supplied Experian with 382,614 postcodes. The Connected Nations dataset is based on information from BT Openreach that outlines every broadband connection in the UK and the average predicted speed that each line can achieve.
- A1.5 Please note that due to the timing of this analysis, the 2015 Connected Nations data was the most current available coverage data at that time. This analysis, relating to 2015, would need to be repeated nearer implementation of a policy, using the latest data in order to provide updated insights on affordability and socio-economic aspects of the profile of postcodes in areas with premises that have a connection that at that time does not meet the technical specification. The analysis here provides helpful illustrative insights as they relate to (and as they are referred to in this report) 'premises that are not receiving 10Mbit/s (Scenario 1)', or the 'total 2015 cohort' as they are alternatively defined in this note.
- A1.6 Analysis was conducted at the full postcode level. Full postcodes in the UK provide a very detailed and precise geographical breakdown. The median size of a residential postcode is just 13 premises and 31 residents. While the size of postcodes does vary significantly, only 1% of residential postcodes have more than 64 premises and 154 residents.
- A1.7 Experian provided both premises level data and an aggregated score (which is the 'dominant' score selected from the mode) for each variable.<sup>2</sup>

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<sup>2</sup> Dominant values have been calculated for all UK postcodes. The most frequently occurring class in each postcode is allocated as the dominant value.

A1.8 The document details an overview of the analysis and reports on:

- Age profile of the postcode residents
- Household income
- Financial stress<sup>3</sup>
- Urban: rural profile
- Household structure; and
- Tenure

A1.9 Comparisons have been made between premises (that do not receive 10Mbit/s) and the total UK population throughout the analysis to indicate how premises within these postcodes compare to the national average. Comparisons have also been made between results for premises within these postcodes and across UK nations.

A1.10 Due to the large sample sizes (all over 0.25million and most over 1.5 million) significance testing would have shown that all differences between the populations analysed were significant. In order to focus on the most marked differences, only those differences which are greater than plus or minus 2.5% are commented on.

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<sup>3</sup> Experian's Financial Stress Indicator identifies an individual's potential to become financially over-stretched and struggle with further payments. It is calculated using the following data sources which are used as base data: 1) Experian consumer survey information on the number of credit cards, personal loans and payment behaviour. 2) Publicly available information on previous bad debt (e.g. County Court Judgments). A model is developed to rank individuals on their level of debt commitment.

## Annex 2

# Key findings

A2.1 The results suggest that, compared with the UK population as a whole, people living in premises that in 2015 do not receive 10Mbit/s (Scenario 1) are more likely to:

- be older- 38% aged over 65 compared to 27% across the UK
- have higher household incomes- 56% earned £50k or more a year compared to 23% across the UK; 2% earned less than £20k compared to 28% across the UK
- have less potential to become over-stretched and struggle with further payments compared to the UK population as a whole- 91% recorded low or very low financial stress indicators compared to 79% among the UK population
- be classified as rural than urban- 34% rural compared to 13% across the UK, 66% urban compared to 87% across the UK.

A2.2 However, the results suggest that a small proportion of individuals in premises that in 2015 do not receive 10Mbit/s are likely to:

- have high or very high Experian financial stress indicators (8%)- suggesting the potential to become financially over-stretched and struggle with payments, and:
- these individuals are predominantly situated in urban areas and of those with high or very high financial stress indicators, 12% had a household income of under £20,000, and 82% are in social housing.

**Annex 3**

# Overview of postcodes with premises that do not receive 10Mbit/s (Scenario 1) compared to the UK average

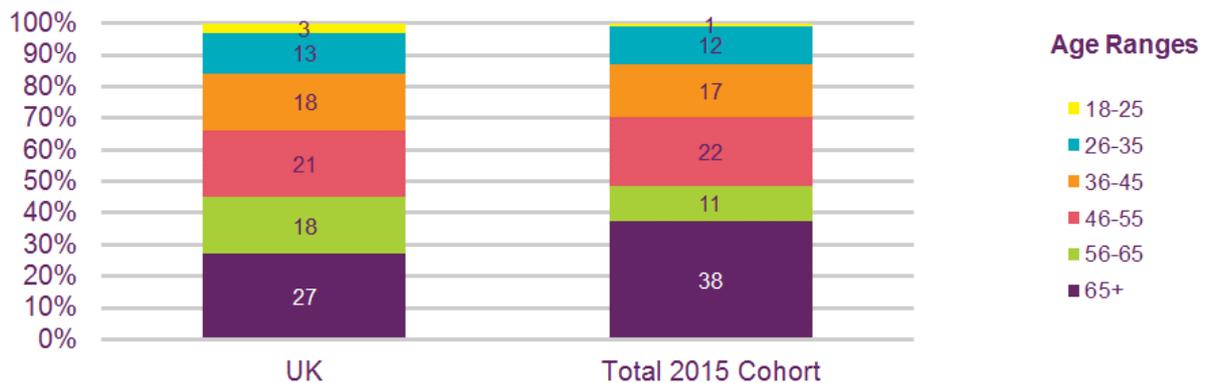
A3.1 People living in premises that do not receive 10Mbit/s (Scenario 1), i.e. the ‘total 2015 cohort’, tend to be older than the UK population as a whole. They tend to have higher household incomes and suffer less financial stress than the UK as a whole. In terms of geography, postcodes in the total 2015 cohort are more likely to be classified as rural than urban.

A3.2 Further details on each variable are given below:

### Age profile of UK population vs total 2015 cohort

A3.3 People in the total 2015 cohort tend to be older than the UK population as a whole (38% aged over 65 compared to 27% across the UK).

**Figure 1: Age profile- UK population vs total 2015 cohort**

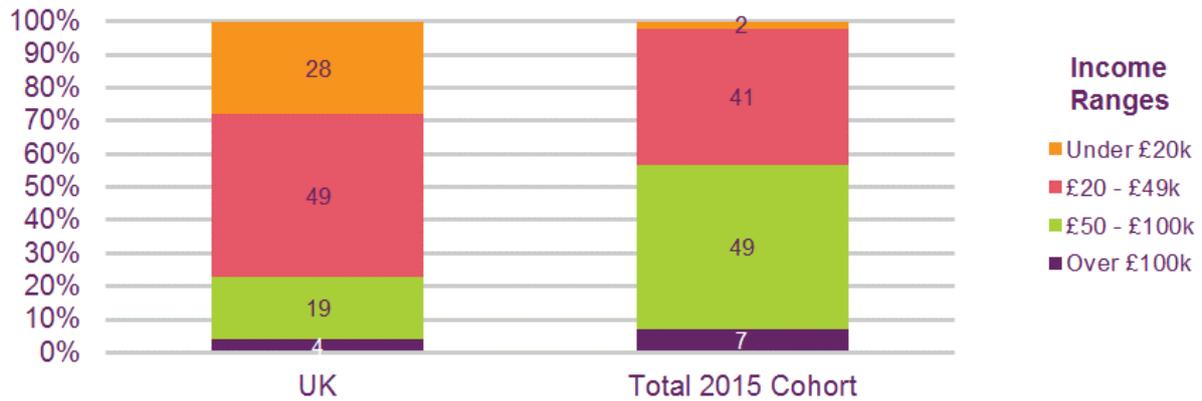


*Experian data 2016: 16,623,681 people (aged 18+) live in premises which do not receive 10Mbit/s (Scenario 1).*

### Income profile of UK population vs total 2015 cohort

A3.4 People in the total 2015 cohort tend to have higher household incomes than those for the UK as a whole. 56% earn £50k or more a year compared to 23% across the UK. 2% earned less than £20k which compares to 28% for the UK as a whole.

**Figure 2: Household income - UK population vs total 2015 cohort**

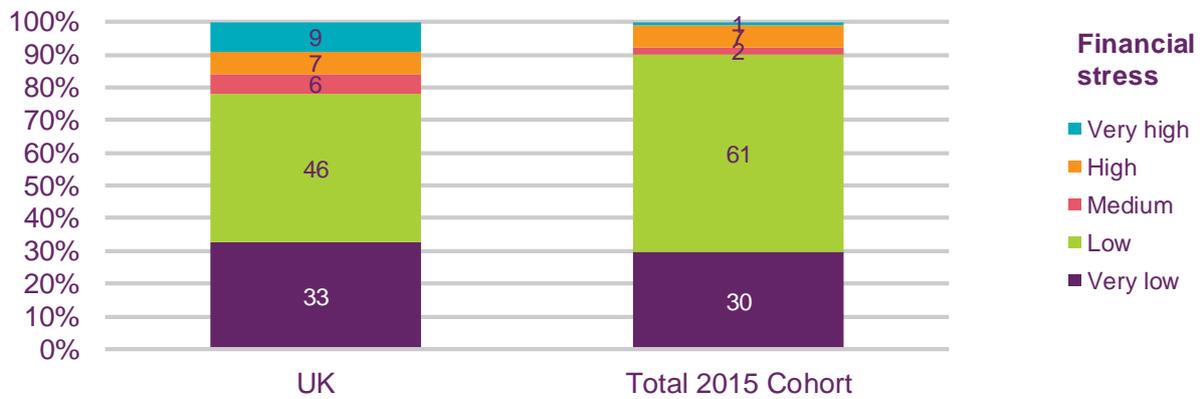


Experian data 2016: 16,623,681 people (aged 18+) live in premises which do not receive 10Mbit/s (Scenario 1). Based on inferred household income

**Financial stress profile of UK population vs total 2015 cohort**

A3.5 Experian’s Financial Stress indicator<sup>4</sup> identifies an individual’s potential to become financially over-stretched and struggle with payments. Using this variable, we see that those in the total 2015 cohort were significantly different when compared to the UK average. Generally, people in the total 2015 cohort have less potential to become over-stretched and struggle with further payments when compared to the UK population as a whole. 91% of the total 2015 cohort record low or very low financial stress indicators compared to 79% among the UK population.

**Figure 3: Financial stress indicator - UK population vs total 2015 cohort**



Experian data 2016: 16,623,681 people live at premises which do not receive 10Mbit/s (Scenario 1). Financial stress is based on the financial situation of the head of household unlike age and income which are based on all residents aged over 18.

**Urban: rural profile of UK population vs total 2015 cohort**

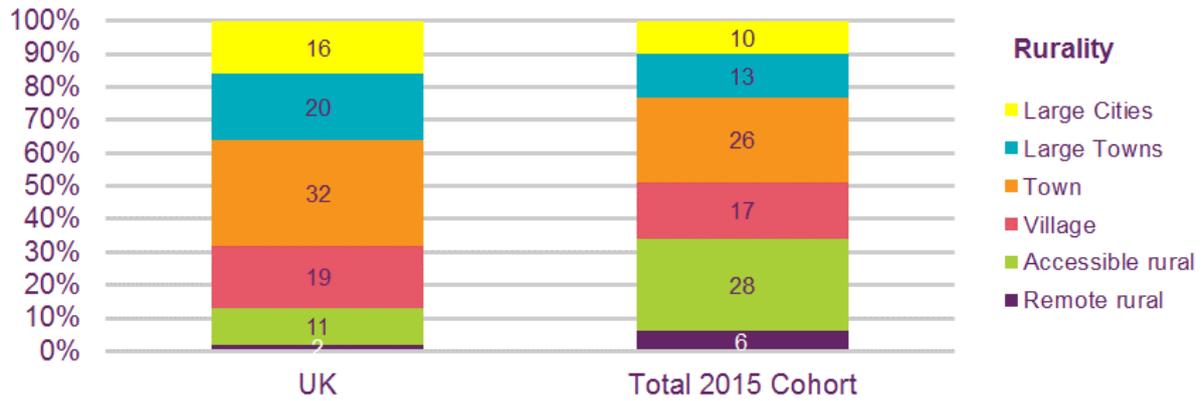
A3.6 The postcodes in the total 2015 cohort are more rural than across the UK (34% rural compared to 13% for the UK), and less urban (66% urban compared to 87% for the UK).<sup>5</sup>

<sup>4</sup> Ibid. Footnote 1.

<sup>5</sup> Urban includes cities, large towns, towns and villages. Rural includes accessible rural and remote rural. The rural classification (accessible rural/remote rural) includes settlements smaller than 2,000 people. Remote rural means that there is no larger settlement within 10 miles.

A3.7 Within the rural bands, postcodes in the total 2015 cohort are more likely than the UK average to be classified as ‘accessible rural’ (28% compared to 11% for the UK) and ‘remote rural’ (6% compared to 2% for the UK), and less likely to be ‘large cities/large towns/towns’ (49% compared to 68% for the UK). 10% of postcodes in the total 2015 cohort are ‘large city’ postcodes.

**Figure 4: Rurality – All UK vs total 2015 cohort**



*Experian data 2016: 16,623, 591 live in premises which do not receive 10Mbit/s (Scenario 1) and which have a urban-rural classification. Rural definitions – Bluewave Geographics: Locale. Note: not all postcodes could be matched to a nation or rurality so the rural and urban figures are slightly lower than the total 2015 cohort*

## Annex 4

# Further analysis of the urban: rural split within the total 2015 cohort

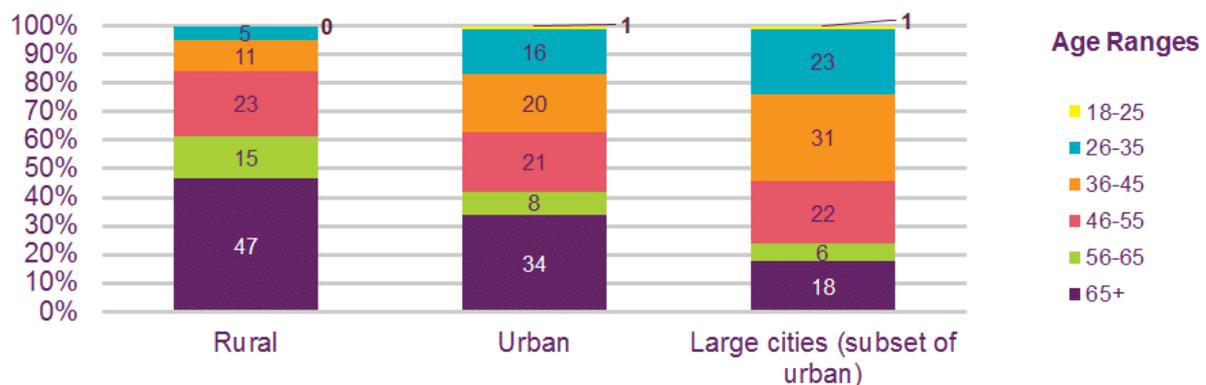
A4.1 This section looks in more detail at the urban: rural split within the total 2015 cohort detailed in the previous section. Postcodes in the total 2015 cohort classify as 34% rural and 66% urban. 10% of these postcodes are classified as 'large city' which is a subset of the urban classification.

### Age profile of total 2015 cohort: urban vs rural

A4.2 People living in rural premises which do not receive 10Mbit/s (Scenario 1) tend to be older than those living in premises which do not receive 10Mbit/s in urban areas: 47% are aged over 65 in rural areas compared to 34% in urban areas. By contrast, only 16% of rural residents are aged 18-45 compared to 37% of residents in urban areas.

A4.3 People who live in large cities tend to be younger than other urban and rural dwellers. 55% are aged between 18-45, compared with 37% for the wider urban definition and 16% in rural areas.

**Figure 5: Age profile: Urban postcodes with premises that do not receive 10Mbit/s (Scenario 1) compared to rural postcodes and those in large cities**

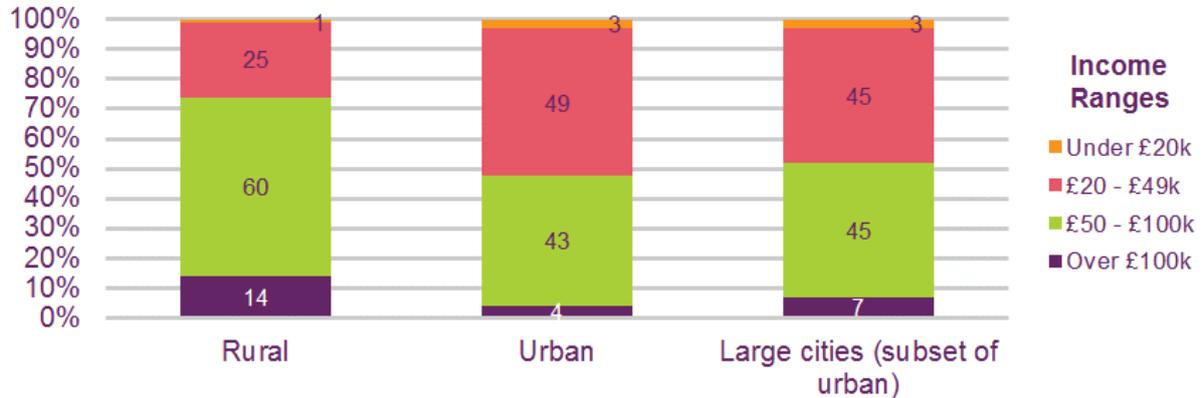


*Experian data 2016: Urban 11,002,601 (66%); Rural 5,620,990 (34%); Large city 1,608,377 (10%) Note: not all postcodes could be matched to a nation or rurality so the rural and urban figures are slightly lower than the total number of postcodes. Urban-rural definitions from Bluewave Geographics.*

### Income profile of total 2015 cohort: urban vs rural

A4.4 Rural dwellers who live in premises which do not receive 10Mbit/s tend to have higher incomes than their urban counterparts. 74% earn £50k or more and 14% earn more than £100k. This compares to 47% and 4% for urban dwellers. Large city dwellers who live in premises which do not receive 10Mbit/s have a similar, albeit slightly higher income profile to other urban dwellers (52% earn £50k or more and 7% earn more than £100k).

**Figure 6: Household income: Urban postcodes with premises that do not receive 10Mbit/s (Scenario 1) compared to rural postcodes and those in large cities**

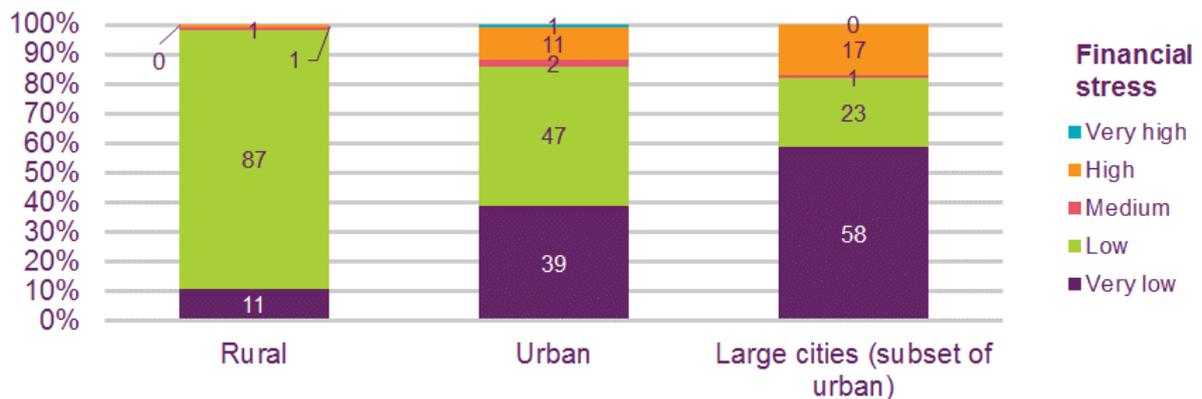


Experian data 2016: Urban 11,002,601 (66%); Rural 5,620,990 (34%); Large city 1,608,377 (10%) Note: not all postcodes could be matched to a nation or rurality so the rural and urban figures are slightly lower than the total number of postcodes. Urban-rural definitions from Bluewave Geographics.

**Financial stress profile of total 2015 cohort: urban vs rural**

- A4.5 Urban dwellers suffer more financial stress than their rural counterparts. 12% have high or very high financial stress indicators compared to 1% of rural dwellers. However, 39% of urban dwellers also have very low financial stress indicators whereas 11% of rural dwellers fall into this category.
- A4.6 Within large cities, financial stress is even more polarized with 58% having very low stress indicators and 17% having high or very high stress indicators.

**Figure 7: Financial stress indicator: Urban postcodes with premises that do not receive 10Mbit/s compared to rural postcodes and those in large cities (Scenario 1)**



Experian data 2016: Urban 11,002,601 (66%); Rural 5,620,990 (34%); Large city 1,608,377 (10%) Note: not all postcodes could be matched to a nation or rurality so the rural and urban figures are slightly lower than the total number of postcodes. Urban-rural definitions from Bluewave Geographics.

**Tenure status of total 2015 cohort: urban vs rural**

- A4.7 People living in rural postcodes with premises that do not receive 10Mbit/s (Scenario 1) tend to own their houses either outright or with a mortgage (92%). This compares to 70% in urban areas and 48% in large cities. People in large cities are more likely to privately rent (12%) or obtain their housing from the council or

housing association (40%). This compares to 2% and 6% in rural areas respectively and 5% and 25% for urban areas as a whole.

**Figure 8: Type of tenure: Urban postcodes with premises that do not receive 10Mbit/s (Scenario 1) compared to rural postcodes and those in large cities**



*Experian data 2016: Urban 11,002,601 (66%); Rural 5,620,990 (34%); Large city 1,608,377 (10%). Note: not all postcodes could be matched to a nation or rurality so the rural and urban figures are slightly lower than the total number of postcodes. Urban-rural definitions from Bluewave Geographics.*

## Annex 5

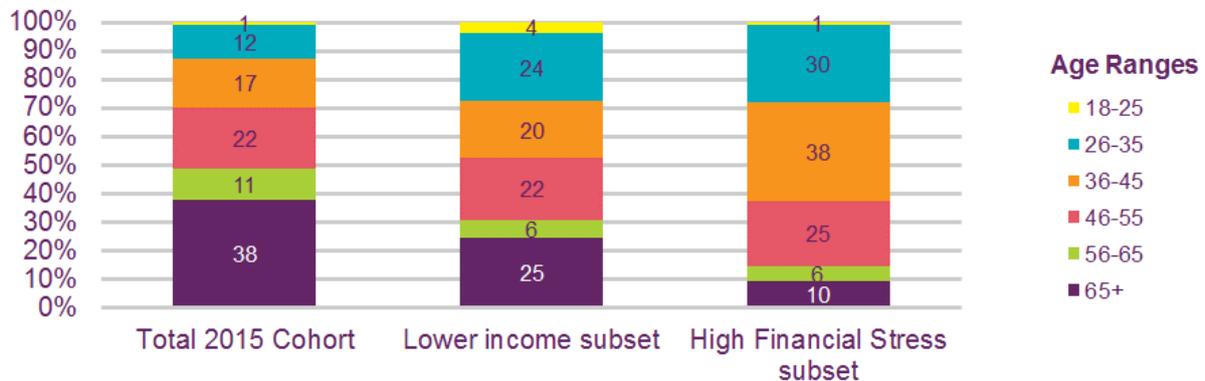
# Further analysis of lower income and high financial stress households within the total 2015 cohort

A5.1 This section takes a more detailed look at households within the total 2015 cohort who have either lower incomes or high financial stress. Lower income households are defined as those with an annual household income of less than £20,000. High financial stress households are defined as those heads of households which have Experian’s ‘very high’ or ‘high’ financial stress indicator.<sup>6</sup>

### Age profile of residents in total 2015 cohort compared to lower income and high financial stress subsets

A5.2 People experiencing high financial stress or on lower incomes tend to be younger than people in the total 2015 cohort. 48% of those with lower incomes and 69% of those with high financial stress are aged 45 or under compared to 30% across the total 2015 cohort.

**Figure 9: Age profile: Total 2015 cohort compared to those living in a household with lower income or in one where the head of household has high financial stress**



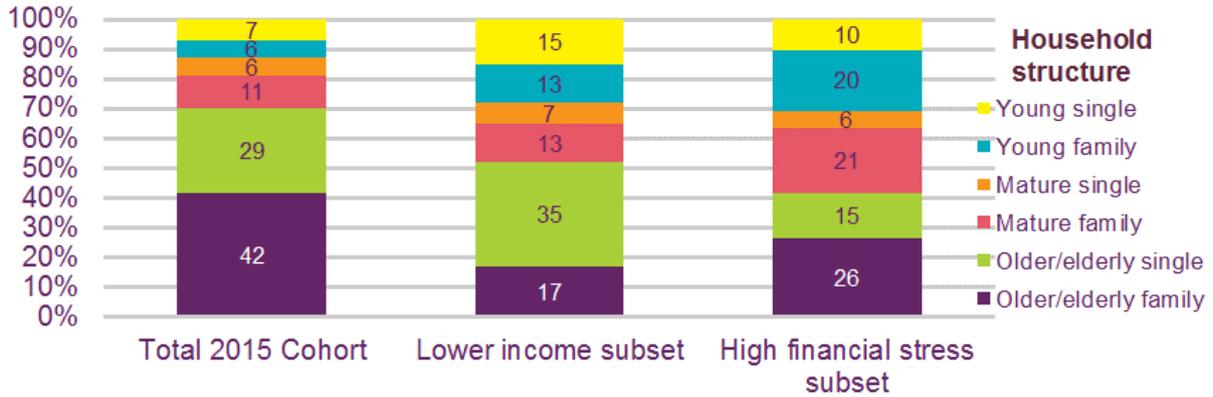
*Experian data 2016; all – 16,623,681; High financial stress 1,298,829 (8%); Lower income 376,297 (2%). Financial stress is defined by the financial situation of the head of household and income by the overall household income.*

### Household structure of total 2015 cohort compared to lower income and high financial stress subsets

A5.3 Residents from lower income households are most likely to be young and single, or young with a family (28%), or older/elderly single people (35%). The majority (67%) of those facing high financial stress have a family (young family 20%, mature family 21% and older/elderly family 26%). Across the total 2015 cohort, 42% live in households comprised of older/elderly families and a further 29% are older/elderly single people.

<sup>6</sup> Ibid. Footnote 1.

**Figure 10: Household structure: Total 2015 cohort compared to those living in a household with lower income or in one where the head of household has high financial stress**



Experian data 2016; all – 16,623,681; High financial stress 1,298,829 (8%); Lower income 376,297 (2%). Financial stress is defined by the financial situation of the head of household and income by the overall household income.

**Income profile of residents in total 2015 cohort compared to the high financial stress subset**

- A5.4 Note: By definition here, a lower income household is one with an income of less than £20k. The figure below therefore only details the high financial stress indicator.
- A5.5 Households facing high financial stress are most likely to have a household income within the range of £20k-£49k (80% compared to 41% for the total 2015 cohort). They are also more likely to have a lower household income (i.e. under £20k) when compared to the total 2015 cohort (12% compared to 2%), and less likely to have a higher income of £50k or above (8% compared to 56%).

**Figure 11: Household income: Total 2015 cohort compared to those living in a household where the head of household has high financial stress**



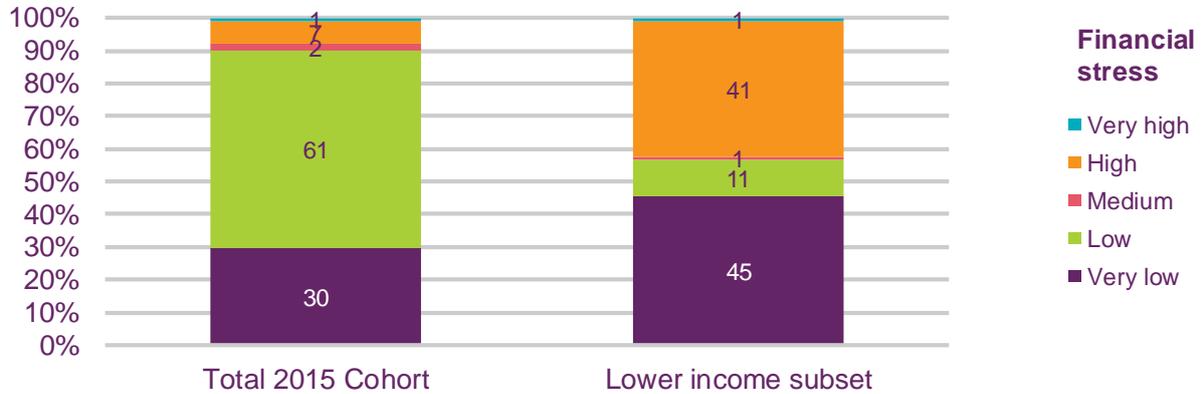
Experian data 2016; all – 16,623,681; High financial stress 1,298,829 (8%). Financial stress is defined by the financial situation of the head of household.

**Financial stress profile of residents in the total 2015 cohort compared to the lower income subset**

- A5.6 Note: By definition here, a high financial stress household is defined as those households which fall into the Experian’s ‘very high’ or ‘high’ financial stress indicator. The figure below therefore only details the lower income subset.

A5.7 Having a lower income does not always mean that you face high financial stress. 56% of such households have 'low' or 'very low' financial stress. However, 42% have 'high' or 'very high' financial stress. This compares to 91% (low/very low) and 8% (high/very high) respectively for the total 2015 cohort.

**Figure 12: Financial stress indicator: Total 2015 cohort compared to those living in a household with lower income.**



Experian data 2016; all – 16,623,681; High financial stress 1,298,829 (8%); Lower income 376,297 (2%). Financial stress is defined by the financial situation of the head of household and income by the overall household income.

**Tenure status of the total 2015 cohort compared to those with lower incomes or high financial stress**

A5.8 The majority of people with lower incomes in postcodes which have premises that do not receive 10Mbit/s rent their house from the council or a housing association (73%), as do those with high financial stress (82%). Across the total 2015 cohort the majority of residents own their home either outright or with a mortgage (78%).

**Figure 13: Type of tenure: Total 2015 cohort compared to those living in a household with lower income or in one where the head of household has high financial stress**



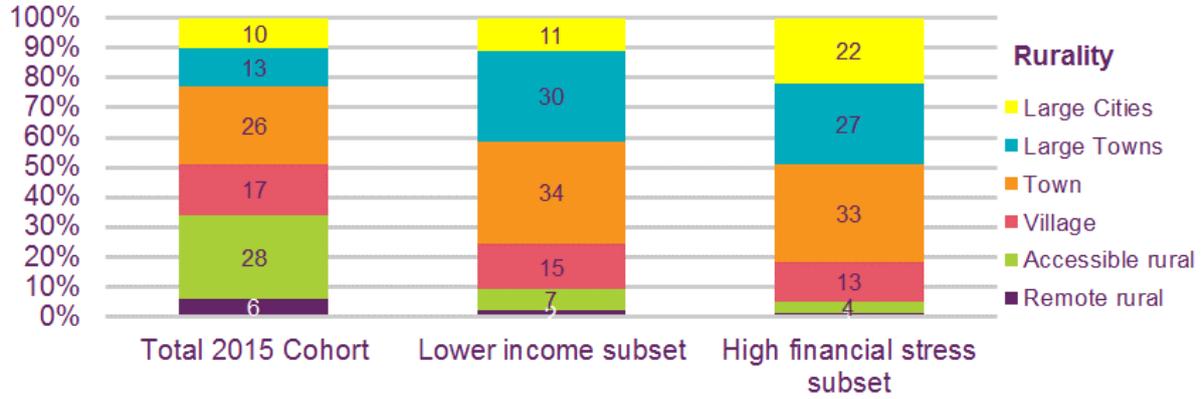
Experian data 2016; all – 16,623,681; High financial stress 1,298,829 (8%); Lower income 376,297 (2%). Financial stress is defined by the financial situation of the head of household and income by the overall household income.

**Urban: rural profile of total 2015 cohort compared to those with lower incomes or high financial stress**

A5.9 People living in premises that do not receive 10Mbit/s (Scenario 1) from lower income households or those with levels of high financial stress are more urban than

the total 2015 cohort. 41% of lower income households are based in large cities or large towns, compared to 23% for the total 2015 cohort. The figure is higher for those facing high financial stress, where 49% are based in cities or large towns.

**Figure 14: Rurality: Total 2015 cohort compared to those living in a household with lower income or in one where the head of household has high financial stress**



*Experian data 2016; all – 16,623,681; High financial stress 1,298,829 (8%); Lower income 376,297 (2%). Financial stress is defined by the financial situation of the head of household and income by the overall household income. Rural definitions – Bluewave Geographics, Locale*

## Annex 6

# Further nations based analysis of the total 2015 cohort

## Further nations based analysis of the total 2015 cohort

A6.1 This section takes a more detailed look at households within postcodes with premises that do not receive 10Mbit/s (the total 2015 cohort) by nation.

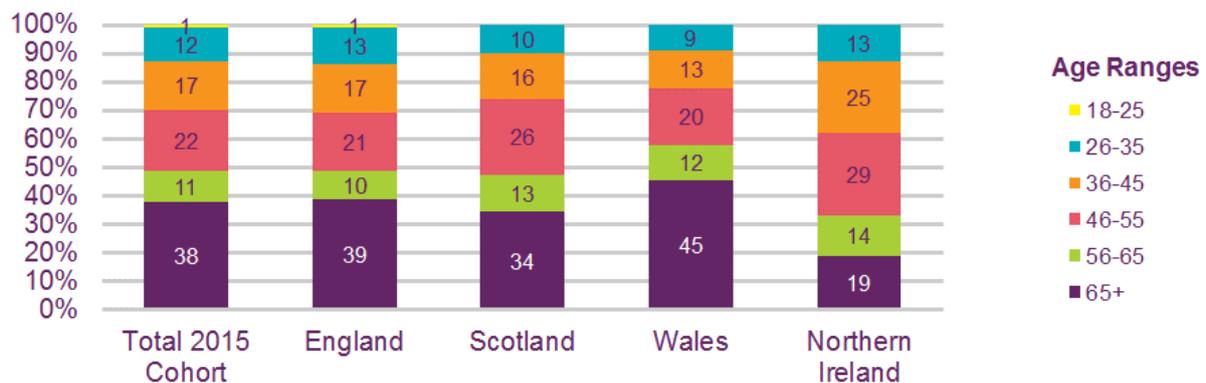
### Age profile of total 2015 cohort by nation

A6.2 A greater percentage of people living in Scottish postcodes where 50% or more of premises do not receive 10Mbit/s are aged 36-55 years of age (42% compared to 39% for the total 2015 cohort) and a smaller percentage are aged 65 or over (34% compared to 38% for the total 2015 cohort).

A6.3 A greater percentage of people in Northern Irish postcodes where 50% or more of premises do not receive 10Mbit/s are aged 36 to 55 (54% compared to 39% for the total 2015 cohort) and a smaller percentage is aged over 65 (19% compared to 38%).

A6.4 A greater percentage of people in Welsh postcodes where 50% or more of premises do not receive 10Mbit/s are aged 65 or over (45% compared to 38% for the total 2015 cohort).

**Figure 15: Age profile: Total 2015 cohort compared to nations**

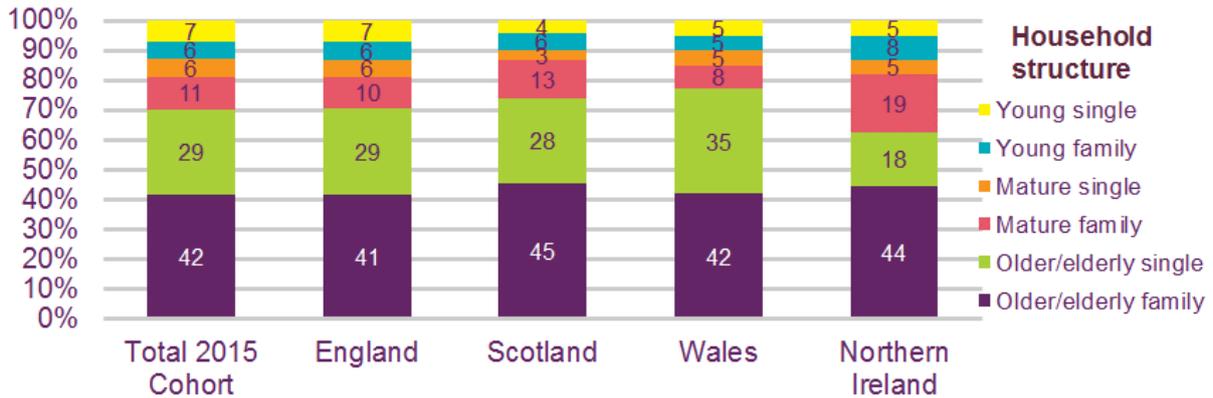


*Experian data 2016: Total 2015 Cohort 16,623,681; England 13,226,799 (80%); Scotland 1,693,799 (10%); Wales 1,219,642 (7%) and Northern Ireland 483,201 (3%). Not all postcodes could be matched to a nation therefore the summation of the nations is slightly lower at 16,623,441 than the number of residents in the total 2015 cohort.*

### Household structure of total 2015 cohort by nation

A6.5 27% of families in Northern Ireland who live in postcodes where 50% or more of premises do not receive 10Mbit/s are defined as young or mature families. This compares to 19% in Scotland, 16% in England, and 13% in Wales. 45% of Scottish households who live in postcodes where 50% or more of premises do not receive 10Mbit/s are defined as older/elderly families and 35% of such households in Wales are older/elderly single people.

**Figure 16: Household structure: Total 2015 cohort compared to nations**



Experian data 2016: Total 2015 Cohort 16,623,681; England 13,226,799 (80%); Scotland 1,693,799 (10%); Wales 1,219,642 (7%) and Northern Ireland 483,201 (3%). Not all postcodes could be matched to a nation therefore the summation of the nations is slightly lower at 16,623,441 than the number of residents in the total 2015 cohort.

**Income profile of total 2015 cohort by nation**

A6.6 A higher percentage of people in Wales and Northern Ireland who live in a postcode where 50% of premises do not receive 10Mbit/s (Scenario 1) have an income under £50k. 55% of such Welsh people and 58% of such Northern Irish people fall into this category compared to 42% and 43% for their equivalents in England and Scotland respectively. There are similar percentage of people across the nations with household income under £20k.

**Figure 17: Household income: Total 2015 cohort compared to nations**



Experian data 2016: Total 2015 Cohort 16,623,681; England 13,226,799 (80%); Scotland 1,693,799 (10%); Wales 1,219,642 (7%) and Northern Ireland 483,201 (3%). Not all postcodes could be matched to a nation therefore the summation of the nations is slightly lower at 16,623,441 than the number of residents in the total 2015 cohort.

**Financial stress profile of the total 2015 cohort by nation**

A6.7 10% of people who live in Scottish postcodes where 50% of premises do not receive 10Mbit/s (Scenario 1) have high or very high financial stress indicators. This compares to 9% for Northern Ireland, 8% for England and 6% for Wales.

**Figure 18: Financial stress indicator: Total 2015 cohort compared to nations**



Experian data 2016: Total 2015 Cohort 16,623,681; England 13,226,799 (80%); Scotland 1,693,799 (10%); Wales 1,219,642 (7%) and Northern Ireland 483,201 (3%). Not all postcodes could be matched to a nation therefore the summation of the nations is slightly lower at 16,623,441 than the number of residents in the total 2015 cohort.

**Tenure status of total 2015 cohort by nation**

A6.8 More houses in postcodes where 50% of premises do not receive 10Mbit/s (Scenario 1) are owned outright or on mortgage in Northern Ireland (83%) and Wales (81%) than in England (77%) and Scotland (76%). Such Scottish postcodes have a greater proportion of council or housing association properties (21%) than in the other nations (15-18%).

**Figure 19: Type of tenure: Total 2015 cohort compared to nations**



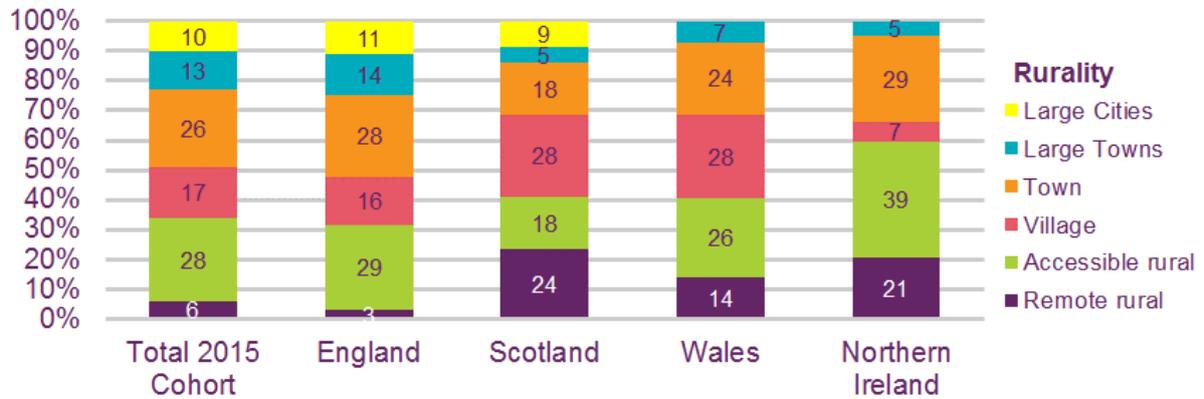
Experian data 2016: Total 2015 Cohort 16,623,681; England 13,226,799 (80%); Scotland 1,693,799 (10%); Wales 1,219,642 (7%) and Northern Ireland 483,201 (3%). Not all postcodes could be matched to a nation therefore the summation of the nations is slightly lower at 16,623,441 than the number of residents in the total 2015 cohort.

**Urban: rural profile of postcodes with premises that do not receive 10Mbit/s (Scenario 1) by nation**

A6.9 In this analysis there are no large cities in Wales or Northern Ireland with premises that do not receive 10Mbit/s (Scenario 1). There are fewer postcodes with premises that do not receive 10Mbit/s (Scenario 1) in large towns in the devolved nations compared to England (5% for Scotland, 7% for Wales, 5% for Northern Ireland compared to 14% in England). Almost a quarter of households are in remote rural areas in Scotland (24%). Across the devolved nations, 42% of such Scottish

households are in rural areas, 40% of Welsh households and 60% of Northern Irish households. This compares to 32% of English comparable households.

**Figure 20: Rurality: Total 2015 cohort compared to nations**



Experian data 2016: Total 2015 Cohort 16,623,681; England 13,226,799 (80%); Scotland 1,693,799 (10%); Wales 1,219,642 (7%) and Northern Ireland 483,201 (3%). Not all postcodes could be matched to a nation therefore the summation of the nations is slightly lower at 16,623,441 than the number of residents in the total 2015 cohort. Rural-urban definitions: Bluewave Geographics