



MOPAC

MAYOR OF LONDON
OFFICE FOR POLICING AND CRIME

Public Attitude Survey 2015-16

Technical Report | Quarter 42 October 2015



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1. Introducing the Survey

Project overview and background to the survey

Introduction

- 1.1 The Public Attitude Survey (PAS) is a well-established survey that was first conducted in 1983 to give the Metropolitan Police Service (MPS) an understanding of the views of residents across London. From April 2014 the Mayor’s Office for Policing and Crime (MOPAC) took responsibility for the survey, which measures Londoners’ confidence in the police and provides information that helps to set the strategic direction for policing and support continuous improvement at borough level.
- 1.2 The PAS is a continuous survey, based on a random sample of respondents at pre-selected addresses with a total of 3,200 Londoners normally interviewed face-to-face each quarter to yield an annual sample of 12,800 interviews. The survey is designed to achieve 100 interviews each quarter in the 32 London Boroughs (excluding the City of London) in order to provide a borough-level sample of 400 interviews in any 12-month rolling period.
- 1.3 Evidence shows that it is not just crime that drives Londoners’ confidence with police and policing. The PAS asks about people’s experiences of crime and Anti-Social Behaviour (ASB). However the survey also includes a range of questions across a number of identified driver areas. Figure 1 (below) shows the MPS confidence model.

Figure 1: Public Confidence in the MPS: What the Evidence Shows (Source: MPS Confidence Model)



- 1.4 Some of the questions that the PAS asks are the same as those used on the Crime Survey for England and Wales (CSEW) so that Londoners' experiences of crime and Anti-Social Behaviour can be compared to experiences across England and Wales as a whole, as well as experiences of those who live in other police force areas.
- 1.5 Survey interviews are administered through CAPI (Computer Aided Personal Interviewing) and average around 23 minutes. Survey analysis and reporting is undertaken at the end of each quarter as well as at the end of each financial year, and data is weighted to take account of survey design and ensure that it is representative of the population of London.

Survey management

- 1.6 Opinion Research Services (ORS) was appointed to undertake the survey on behalf of MOPAC from April 2014. This was the sixth quarter of interviews for ORS, and the borough target of 100 interviews was met or exceeded in all boroughs, with 3,204 interviews achieved between July and September 2015.
- 1.7 The quarterly data is representative of the London population and the achieved sample provides a suitable basis for London-wide analysis, with a confidence interval of $\pm 2\%$ points at 95% confidence. Borough-level estimates based on data from this quarter will typically have a confidence interval of up to $\pm 10\%$ points at 95% confidence.

Structure of the Technical Report

- 1.8 This report documents the technical aspects of the 2015-16 PAS. The report chapters include:
 - » Chapter 2: Sample design
 - » Chapter 3: Survey questionnaire
 - » Chapter 4: Fieldwork
 - » Chapter 5: Weighting
- 1.9 The analysis in the report relates to the total sample for the financial year 2015-16 and the sample addresses that were issued and visited during the second quarter (the period July to September 2015).

2. Sample Design

Key features of the sample framework

Introduction

- 2.1 The 2015-16 sample is based on an unclustered random sample stratified by Basic Operational Command Unit (BOCU). The key features of the sample design are:
- » An achieved sample size of 12,800 interviews across the year with adults aged 16 and over resident in private households in Greater London (excluding the City of London)
 - » A target of 400 interviews per year in each of the 32 BOCUs
 - » A completely unclustered sample in each BOCU over the year
 - » Fieldwork conducted on a continuous basis with the sample being allocated to provide London-wide representative estimates on a quarterly basis

Sample size and structure

- 2.2 The target sample size for the 2015-16 survey is 12,800 interviews with adults aged 16 and over living in private households in London. The overall size of the 2015-16 survey is the same as that conducted annually since 2011. Within the overall target of 12,800 adult interviews, a second requirement of the survey is to achieve 400 adult interviews in every London borough (excluding the City of London).
- 2.3 The amount of sample issued in each borough was based on the 2014-15 response rate achieved in each BOCU, with a reserve sample also selected which could be issued to mitigate any substantial variation in response over the year.

Sample design

- 2.4 The sample design is based on a completely unclustered sample in each BOCU over the year. This avoids cluster effects that would reduce the precision of the survey for both London-wide and borough-level area estimates.
- 2.5 Whilst the sample is unclustered, the selected sample addresses are grouped geographically into work allocations which are assigned to specific quarters of the survey over the year. However, before being allocated to time periods it is necessary to stratify the allocations to ensure that each sample quarter in each borough achieved a broad geographic spread. This was done by using the latitude and longitude values for the 'centroid' address in each work allocation, sorted within Safer Neighbourhood Team areas.
- 2.6 Work allocations were assigned to one of four quarters with equal probability by applying the sequence 1-2-3-4 repeatedly down the sorted list of clusters based on a random start. Within each quarter, sample clusters were allocated to month with equal probability using the sequence 1-2-3 repeatedly down the sorted list based on a random start.

Sampling households and individuals within households

- 2.7 Figure 2 shows the number of addresses estimated for each BOCU at the start of the year based on the Royal Mail Postal Address File (PAF). The PAF forms the basis of the sampling population, on the basis that each residential address will typically represent a household, and we can subsequently sample an individual within each selected household to participate in the survey.

Figure 2: Royal Mail Postal Address File records by London Borough

London Borough	Royal Mail Postal Address File			
	Total Addresses	Large Users	Small Users	
			Non-residential	Residential
Barking & Dagenham	74,681	162	2,483	72,036
Barnet	144,985	906	6,497	137,582
Bexley	100,144	315	3,743	96,086
Brent	106,641	482	6,109	100,050
Bromley	142,157	662	5,336	136,159
Camden	95,049	2,094	10,781	82,174
Croydon	153,739	797	5,763	147,179
Ealing	130,114	870	6,445	122,799
Enfield	125,398	493	5,027	119,878
Greenwich	107,913	336	3,745	103,832
Hackney	104,027	277	7,483	96,267
Hammersmith & Fulham	76,459	521	5,306	70,632
Haringey	94,403	360	4,507	89,536
Harrow	92,066	593	3,715	87,758
Havering	105,755	446	3,774	101,535
Hillingdon	113,147	686	5,239	107,222
Hounslow	100,355	458	4,885	95,012
Islington	95,906	2,053	7,186	86,667
Kensington & Chelsea	70,878	504	4,997	65,377
Kingston upon Thames	67,970	412	2,948	64,610
Lambeth	125,165	465	5,004	119,696
Lewisham	120,526	313	4,401	115,812
Merton	85,307	399	3,792	81,116
Newham	108,125	314	4,952	102,859
Redbridge	104,789	404	3,767	100,618
Richmond Upon Thames	85,000	485	4,216	80,299
Southwark	135,368	1,322	7,931	126,115
Sutton	83,986	339	3,133	80,514
Tower Hamlets	121,851	672	6,481	114,698
Waltham Forest	100,571	408	4,467	95,696
Wandsworth	131,949	1,249	6,114	124,586
Westminster	116,242	1,966	17,890	96,386
TOTAL	3,420,666	21,763	178,117	3,320,786

- ^{2.8} To identify residential addresses, addresses for “Large Users” that are identified in the PAF are excluded from the population. Within the addresses for “Small Users” an algorithm is applied that identifies likely non-residential addresses based on relevant key words such as “Business”, “Enterprise”, “Industrial” or “Unit” appearing in database fields for building name. Similarly, any address records that include an organisation or department name are also identified, together with all PO Box addresses. Where any of these likely non-residential addresses are randomly selected for the sample, they are manually reviewed and any address that is clearly non-residential is excluded from the sample and replaced with another randomly selected address.
- ^{2.9} At multi-dwelling units, the number of dwelling units at each address was recorded by interviewers and interviews were attempted at every dwelling at the address. This replaced the system used previously when interviewers had to randomly select one dwelling at the address. Whilst this new approach did introduce a clustering effect at multi-dwelling addresses, it was decided that this was preferable to such dwellings being under-represented in the final achieved sample.
- ^{2.10} Finally, at each eligible household one adult was randomly selected for interview based on a standard selection algorithm built into the computer interview script. This replaced the system used previously when interviewers had to randomly select an adult in each household.

3. Survey questionnaire

Overview of the interview script and CAPI software

Structure and coverage of the questionnaire

- 3.1 The 2015-16 PAS questionnaire was based on the 2014-15 questionnaire, with only a small number of questions added, removed, or modified. The questionnaire script consisted of the following sections:
- » Local area and community;
 - » Fear of crime and local crime problems;
 - » Terrorism;
 - » Attitudes to policing;
 - » Victimisation;
 - » Contact with the police; and
 - » Communication with the police.
- 3.2 The questionnaire script also included questions about the respondent and their household, as well as information about the survey administration.
- 3.3 The questionnaire was administered through a computer interview script on a tablet computer, and questions were presented in order depending upon answers given to previous questions. The computer interview script automatically progressed through the questionnaire as questions were answered, however the interviewer had the option to navigate back to questions previously asked if the respondent subsequently wanted to change any of their answers.
- 3.4 The complete questionnaire is documented in Appendix A of this report. In the paper questionnaire, square brackets are used to denote the existence of text substitution in a question. Text substitution is where alternative text is used in a question based on answers given to previous questions.

Different question types

- 3.5 The vast majority of questions were pre-coded, meaning that a list of answer categories appeared on the computer tablet screen and the interviewers selected the appropriate code.
- 3.6 Questions were either single response (i.e. only one code could be entered) or multi-response (i.e. more than one code could be entered). Many pre-coded questions had an *Other – please specify* option, and where respondents selected this option, the interviewer would simply type in the answer given. In all these questions, the answers were later reviewed to see if the *Other* answer could be back coded into one of the original pre-coded options.
- 3.7 In multi-response questions, the following codes were always single coded: *None of these*, *Don't Know* and *Refused*.

- ^{3.8} In the case of numeric questions (where an actual value was required) the interviewer typed in the appropriate number. Similarly, for open-ended text responses (where the response was recorded verbatim) the interviewer typed in the answer given. For both question types, separate codes were also available for *Don't Know* and *Refused*.

Don't know and refusal options

- ^{3.9} Almost every question had a *Don't Know* and *Refused* option that the interviewer could use, but at most questions they did not appear on show cards to try to ensure that respondents did not over-use these options. In the computer interview script, *Don't Know* and *Refused* options were separated from other response options and shown at the bottom of screen.

4. Fieldwork

Interview management and quality control

- 4.1 This chapter documents all aspects of the data collection process for the second quarter of the year, focusing in particular on fieldwork procedures, the management of interviewers, quality control procedures and response rates achieved across the different samples.

Interviewer briefing

- 4.2 All interviewers working on the Public Attitude Survey attended a full day face-to-face briefing before undertaking any interviews, regardless of whether or not they had previously worked on the survey. The briefing covered:
- » Introduction to Opinion Research Services (ORS)
 - » Overview of the survey
 - Information about the sampling, fieldwork approach and work allocations
 - Details about within household respondent selection process
 - Managing appointments, including details about the pre-alert letter and unique property code
 - Address outcome codes and required evening and weekend visits
 - Process for recording and interviewing at multi-dwelling addresses
 - » CAPI system
 - Introduction to the computer tablet hardware
 - Survey management system, including process for recording visits and booking appointments
 - Overview of the within household respondent selection process
 - Interview script questions and responses
 - » Interviewing standards
 - Market Research Society (MRS) and Interviewer Quality Control Scheme (IQCS) requirements
 - Survey documentation and photographic identification cards, including use of show cards
 - Quality control processes and associated information to be recorded
 - Personal safety when interviewing
 - » Full questionnaire script review on a question-by-question basis
- 4.3 An initial full day briefing was held on 31 March 2015 with a total of 24 interviewers attending. Two further full day briefings were held between April and June, and one further full day briefing was held in August 2015. A total of 9 interviewers attended these sessions.

Police vetting

- 4.4 Only interviewers that passed Non-Police Personnel Vetting (NPPV) were allowed to work on the survey.

Supervision and quality control

- 4.5 During the second quarter, 28 of the interviewers that had been trained, briefed and vetted worked on the project. Several methods were used to ensure the quality and validity of the interviewer fieldwork.
- 4.6 Interviewers new to random probability sample surveys were accompanied on the first day of their PAS work allocation by a supervisor. All interviewers working on the PAS will be supervised for at least one work allocation during the year; however supervision continued to focus on less experienced interviewers during this second quarter.
- 4.7 Of those addresses where an interview was achieved, 1,457 were re-contacted to verify that the interviewer had contacted someone at the address and confirm whether or not an interview had taken place. Addresses for this quality control process were selected on the basis of ORS's standard field quality procedures, whereby telephone checks are attempted on all work undertaken by new interviewers and at least 10% of experienced interviewers' work is checked in each work allocation.

Fieldwork dates and fieldwork management

- 4.8 As outlined in Chapter 2, the sample design is an unclustered sample in each BOCU over the year, with work allocations assigned to specific quarters of the survey over the year. The sample is managed on a monthly basis, with an even number of work allocations normally issued each month (approximately 128 work allocations, 4 in each of the 32 BOCUs).
- 4.9 A total of 3,204 interviews were achieved between July and September 2015 (with a target of 3,200 interviews over this period).

Survey management system

- 4.10 Interviewers were issued with the addresses that they were required to visit via ORS's Survey Management System (SMS) on their tablet computer. Through the SMS, interviewers can record details about each of the individual addresses issued and the calls made to the address. The SMS is a critical part of the survey management, both for individual work allocations and the survey overall.
- » To allow interviewers to record the days and times that they called at an address. Additionally, there is the function for interviewers to record details or comments that may be useful should the address be re-issued to another interviewer.
 - » To collect some basic information about all selected addresses (i.e. property type for residential addresses, and usage details for non-residential addresses). This information was collected by interviewers on the first visit to every property, based on their own observations. Such information is highly associated with non-response and is used in the weighting process.
 - » To allow the interviewer to identify multi-dwelling addresses and record the outcomes achieved at each separate dwelling at the address.
 - » To provide a record of all the outcomes achieved at the address at every visit. The SMS also allows the outcome at each re-issue stage to be recorded separately, so that there is a complete record of outcomes for each address. Information from the SMS is transferred securely to ORS servers in near real time, so that overall progress can be monitored and managed.
 - » To randomly select the person for interview in households with more than one person aged 16 or over, and record details about the selected person where an appointment is required.

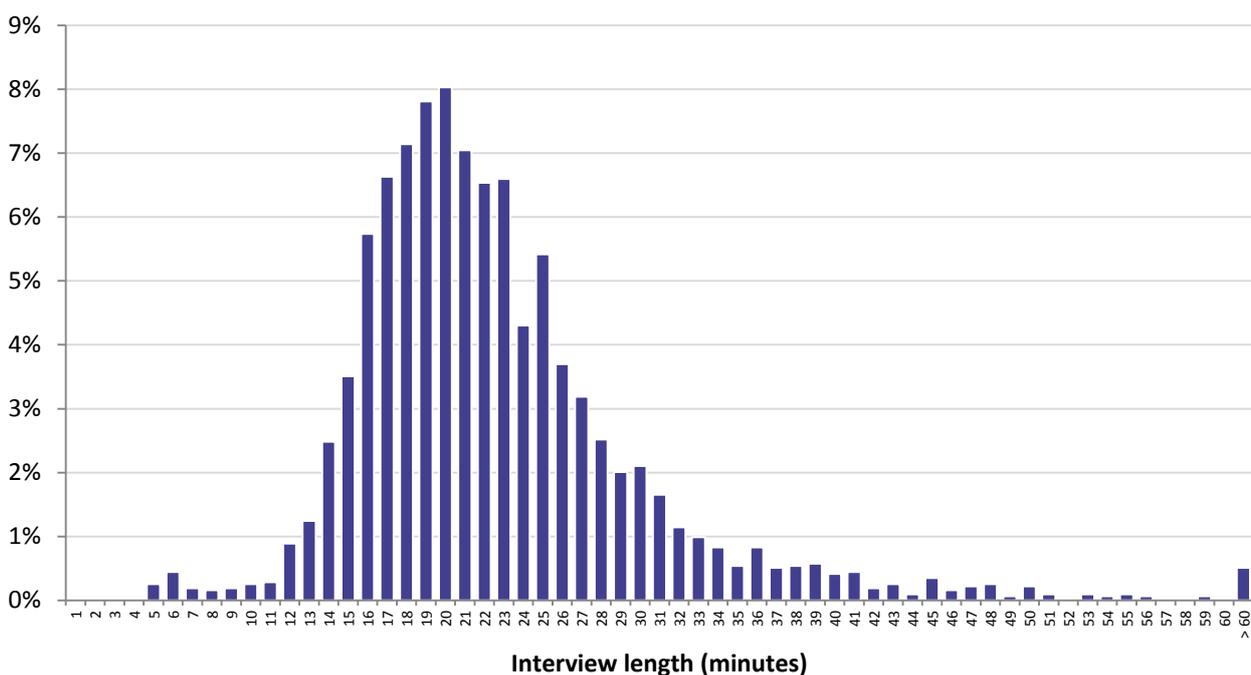
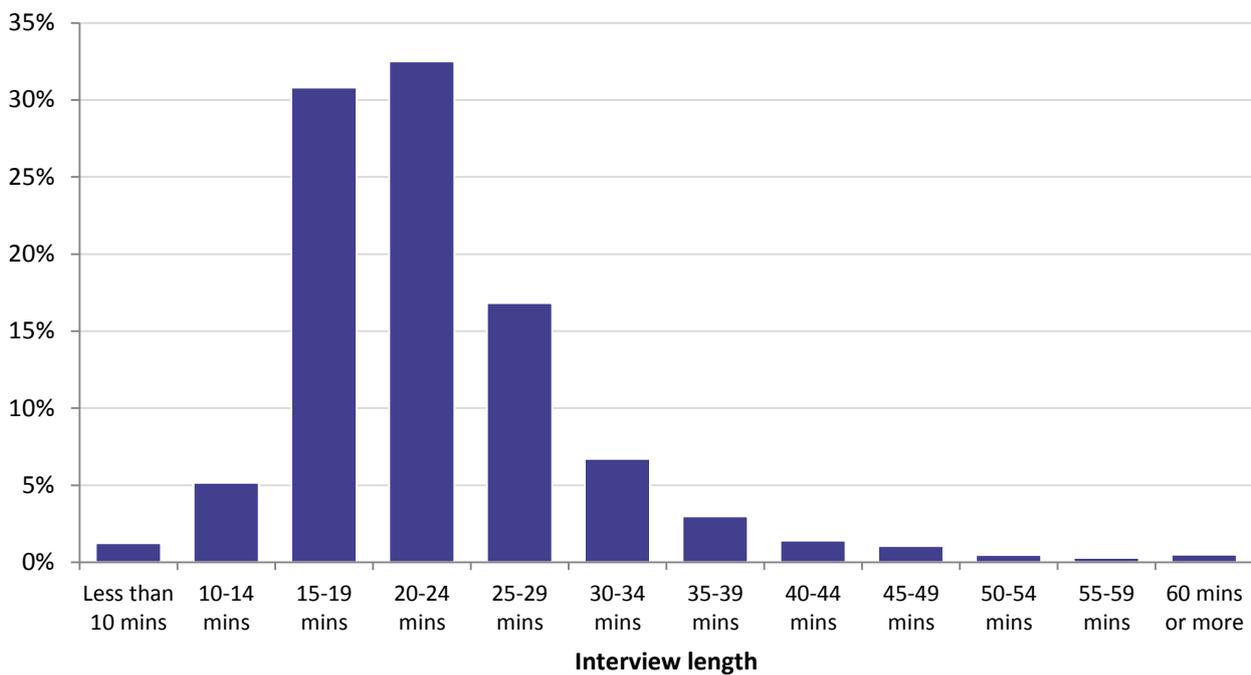
Advance letter and leaflet

- 4.11 For the 2015-16 survey, an advance letter and leaflet was used. All selected addresses were sent a letter from MOPAC before an interviewer called at the address. The letter explained a little about the survey, why this particular address had been selected and telling the occupiers that an interviewer from ORS would be calling in the next few weeks. The letter also provided a telephone number and an email address for people to contact to find out more about the survey, to make an appointment for an interviewer to call, or to opt out of the survey.
- 4.12 During the quarter only 110 people (representing around 1% of addresses issued) opted out of the survey by contacting either ORS or MOPAC, but equally only 92 appointments were made.
- 4.13 Included with the advance letter was a leaflet from MOPAC which provided people with some more details about the survey and tried to answer some questions that potential respondents might have, such as issues relating to confidentiality. An example of the advance letter can be found in Appendix B and an example of the leaflet can be found in Appendix C.
- 4.14 Questions about the advance letter and leaflet were also asked as part of the follow-up quality checks. Of those re-contacted, two thirds (67%) confirmed that they had received the letter and a further 11% couldn't recall whether or not a letter had been received. In the majority of these households (76%), someone had read the letter before the interviewer called and their feedback showed that:
- » 97% considered the information to be helpful;
 - » 97% were reassured that the survey was genuine; and
 - » 83% were encouraged to take part in the survey.
- 4.15 Despite this, only 5% said that they contacted the Freephone number to make an appointment for an interviewer to visit. This is consistent with a relatively low number of calls recorded on the survey management system. Reasons for not contacting the Freephone number included lack of time, believing that it wasn't really necessary, and simply forgetting to do so.

Length of interview

- 4.16 Timing stamps were placed throughout the questionnaire to allow timing of individual sections. In a small number of cases the time stamps were invalid although valid times were available for most.
- 4.17 The average (mean) interview length for the quarter was just over 23 minutes. Four fifths (80%) of all interviews took between 15 and 30 minutes whilst just over a tenth (11%) took between 30 and 45 minutes and 2% took 45 minutes or more. 6% of interviews took less than 15 minutes to complete. A full distribution of interview lengths is shown below.

Figure 3: Interview length (Source: PAS 2015-16, Quarter 2)



Interview language

- 4.18 During the quarter, a total of 40 interviews (1.2%) were conducted in languages other than English, including Amharic, Arabic, Gujarati, Hindi, Italian, Japanese, Polish, Portuguese, Punjabi, Romanian, Somalian, Tamil, Tigrinya, Turkish, and Urdu. For these interviews:
- » The interviewer administered the survey in another language for 6 respondents; and
 - » Another household member or neighbour translated for 34 respondents.

Presence of others during the interview

- 4.19 Given the nature of the survey, it is preferable for the interview to be conducted with no-one else present; but in some cases it isn't possible for the interview to be conducted without others present in the room. Therefore, at the end of the interview, the interviewer recorded whether anyone else was present. Figure 4 provides details on others present in the room for interviews conducted this quarter.

Figure 4: Presence of others during the interview (Source: PAS 2015-16, Quarter 2. Note: Percentages may sum to more than 100% as more than one answer could be coded when someone else was present during the interview)

Presence of Others	Number of Interviews	% of Interviews
No one else present during the interview	2,108	65.8%
Someone else present during the interview:	1,096	34.2%
TOTAL	3,204	100.0%
<i>Others present during the interview:</i>		
Spouse, partner, girlfriend or boyfriend	453	14.1%
Children aged under 16	380	11.9%
Other household member (adult)	325	10.1%
Someone else	140	4.4%

Overall response rates

- 4.20 During the quarter, a total of 7,860 addresses were issued and visited. A total of 2.8% of the addresses issued were identified as not being an eligible residential address (known as deadwood). The most common type of deadwood was empty or vacant residential properties, although these only accounted for 1.2% of all addresses visited. When this deadwood is excluded from the sample, there are a total of 7,643 eligible residential addresses remaining.
- 4.21 Interviewers made contact with either the selected respondent or a responsible adult at over half (53.4%) of these eligible addresses, with no contact made at the remaining 3,565 eligible addresses (46.6%). The proportion of addresses where no contact was made is notably higher than in the Crime Survey for England and Wales, however the fieldwork resources available are much more limited on the Public Attitude Survey and the amount of time available for revisits is more limited.
- 4.22 Full interviews were achieved at 3,204 addresses. This represents 40.8% of all eligible residential addresses (40.8% of all addresses) visited during the quarter. For an interview to be regarded as valid, respondents had to answer to the end of the questionnaire. Any interview which was abandoned before the end of the script was not regarded as useable and was not put on the data file. Interviews that were stopped before the end of the script were coded as a partial interview, and partial interviews were achieved at 25 addresses during the quarter.

4.23 Of the other final outcome codes:

- » 9.7% refused to take part in the interview:
 - 1.2% being office refusals,
 - 3.0% refusing to provide any information to select the person to take part, and
 - 5.5% where the person selected refused the interview;
- » There was no contact with the household at almost half (46.6%) of addresses; and
- » 1.7% were otherwise unable to participate.

4.24 Figure 5 provides a full breakdown of the response analysis for all sample addresses issued (or reissued) and visited during the quarter.

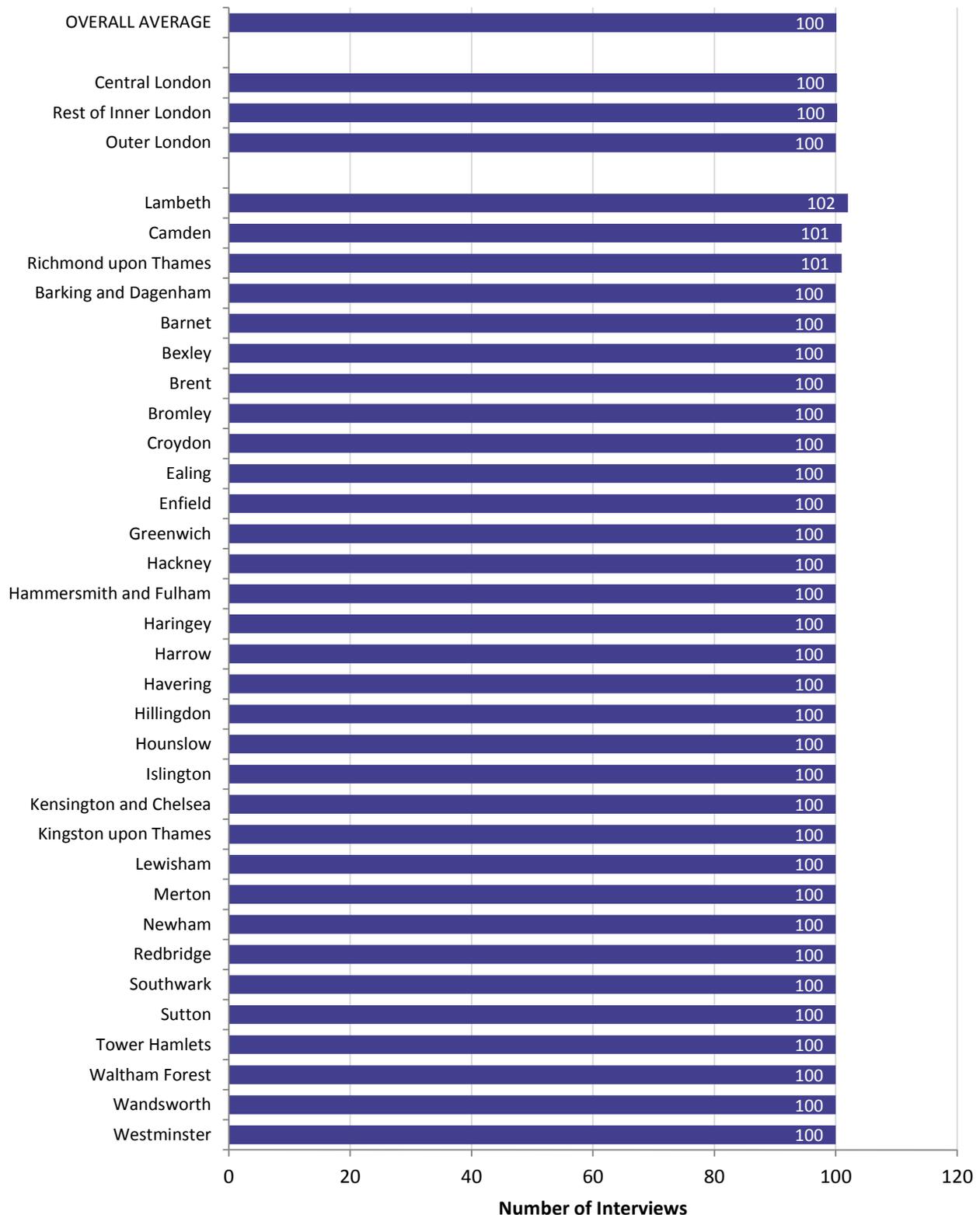
Figure 5: Response analysis of final outcomes (Source: PAS 2015-16, Quarter 2)

Achieved Outcome		N	% of visited addresses	% of final outcomes
TOTAL ADDRESSES ISSUED AND VISITED		7,860	100.0%	-
DEADWOOD	Addresses not traced/accessible	28	0.4%	-
	Not built/does not exist	5	0.1%	-
	Derelict/demolished	17	0.2%	-
	Empty/vacant	92	1.2%	-
	Second home/not main residence	13	0.2%	-
	Business/industrial	45	0.6%	-
	Institution	4	0.1%	-
	Other deadwood	13	0.2%	-
	TOTAL DEADWOOD	217	2.8%	-
TOTAL ELIGIBLE ADDRESSES		7,643	97.2%	-
NON-CONTACT	3 or more visits recorded	535	6.8%	7.0%
	Fewer than 3 visits recorded	3,030	38.5%	39.6%
	TOTAL NON-CONTACT	3,565	45.4%	46.6%
REFUSAL	Office refusal	94	1.2%	1.2%
	Refused all information	229	2.9%	3.0%
	Other refusals	422	5.4%	5.5%
	TOTAL REFUSAL	745	9.5%	9.7%
OTHER UNPRODUCTIVE	Temporarily ill/incapacitated	47	0.6%	0.6%
	Physically or mentally unable	5	0.1%	0.1%
	Away/in hospital	22	0.3%	0.3%
	Previously taken part in the survey	5	0.1%	0.1%
	Other unsuccessful	50	0.6%	0.7%
	TOTAL OTHER UNPRODUCTIVE	129	1.6%	1.7%
TOTAL UNPRODUCTIVE		4,439	56.5%	58.1%
INTERVIEWS	Full interviews	3,204	40.8%	41.9%
	Partial interviews	25	0.3%	0.3%
TOTAL INTERVIEWS		3,204	40.8%	41.9%

Borough response rates

4.25 An average of 100 interviews were achieved in each borough, with overall interview numbers consistent across Inner London and Outer London and all boroughs having at least 100 interviews. Figure shows the survey outcome for all boroughs, ranked by the number of interviews achieved during the quarter.

Figure 6: Number of interviews achieved by BOCU (Source: PAS 2015-16, Quarter 2)



5. Weighting

Compensating for sample design and non-response bias

- 5.1 The following weights have been calculated for the 2015-16 PAS data:
- » An individual adult weight for the quarter July to September 2015; and
 - » An individual adult weight for the 12-month period October 2014 to September 2015, where each quarter is given equal weight.
- 5.2 There are three main reasons for computing weights on the PAS:
- » To compensate for unequal selection probabilities:
 - Addresses in boroughs with smaller populations have a greater chance of selection than addresses in boroughs with larger populations; and
 - People living in households with many adults aged 16+ have less chance of selection than those living as single person households.
 - » To compensate for differential response rates:
 - Rates differ between London boroughs, with parts of Inner London in particular having larger proportions of deadwood addresses and higher rates of refusal and non-contact;
 - Rates differ between property types, with residents in houses being more likely to be contacted and take part than residents living in flats (especially those with locked communal entrances); and
 - Rates differ depending on whether the person that answers the initial questions to decide who to interview is selected for interview, or if another household member is selected.
 - » To ensure that quarters are equally weighted for analyses that combine data over longer periods.
- 5.3 Both of the calculated weights include a component to compensate for unequal selection probabilities and differential response rates. Furthermore, the weight for the most recent 12-month period includes a component to weight the quarters equally.

Component weights

- 5.4 The weights constructed for the sample were based on a number of key component weights. The following conventions were used for the components that made up the final weights:
- » w1: weight to compensate for unequal address selection probabilities;
 - » w2: non-response weight to compensate for differential response rates at different property types;
 - » w3: individual selection weight to account for different sized households; and
 - » w4: non-response weight to compensate for differential response rates for the person that first spoke to the interviewer and other people in the household.

Address selection weight (w1)

- 5.5 Under the survey design, the address sampling probability varies between BOCUs. Furthermore, given the need to actively manage the sample, there is a small variation in the address sampling probability for addresses in different work allocations.
- 5.6 The Address Selection weight (w1) is proportional to one divided by the address sampling probability.

Property type non-response weight (w2)

- 5.7 As noted in chapter 4, interviewers recorded the property type for all residential addresses that were visited in the issued sample, including properties where an interview wasn't achieved. This allowed response rates to be calculated for each of the following property types:
- » Whole house that is:
 - Detached
 - Semi-detached
 - Terraced
 - » Flat in purpose built block or part of a converted house that:
 - Has its own entrance
 - Has a non-lockable communal entrance
 - Has a lockable communal entrance

- 5.8 The Property Type non-response weight (w2) corrects for differential response rates at each of the above property types. It is the reciprocal of the interview conversion rate (i.e. the proportion of all sample addresses which yield a full interview) at each property type, after weighting by w1.

Individual weight (w3)

- 5.9 At dwellings with more than one eligible adult aged 16 or over, one adult was selected at random by a computer algorithm built into the Survey Management System. This means that the probability of any one individual being selected was inversely proportional to the number of eligible adults in the household.
- 5.10 The individual weight is proportional to one divided by the individual selection probability, which itself is inversely proportional to the number of eligible adults in the household – so the Individual weight (w3) is simply the number of adults in the household.

Selected person non-response weight (w4)

- 5.11 Where the computer algorithm built into the Survey Management System selects the person that first spoke to the interviewer to participate in the survey and undertake the main questionnaire, the response rate is marginally higher than when another household member is selected (especially when this requires an appointment and revisit to the address).
- 5.12 The Selected Person non-response weight (w4) corrects for this differential response rate. It is the reciprocal of the observed response rates for the different groups, after weighting by w1, w2 and w3.

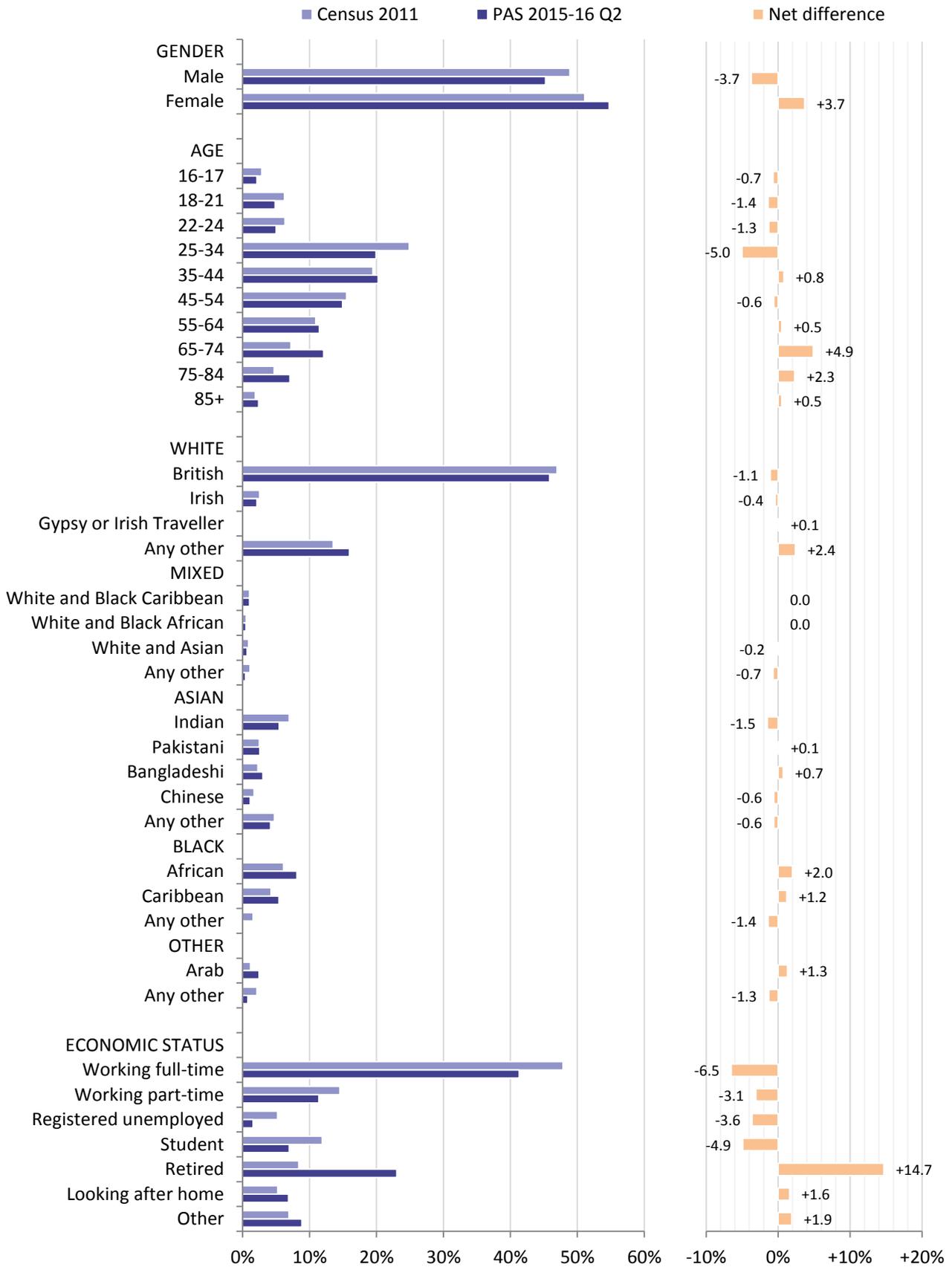
Initial sample weights

- 5.13 The initial sample weight takes account of all four component weights that compensate for unequal probability of selection in the sample design and differential non-response rates. The weight is initially calculated as the product of $w_1 * w_2 * w_3 * w_4$.
- 5.14 A final post-stratification weight is then applied to ensure that the proportion of respondents in each London borough is consistent with the adult population aged 16 or over from the latest Office for National Statistics (ONS) Mid-Year Population Estimate.

Representativeness of the achieved sample

- 5.15 In order to assess the representativeness of the achieved sample this chapter compares the profile of the survey data (weighted to compensate for sample design and differential non-response) with population estimates for a range of socio-demographic variables from the 2011 Census.
- 5.16 Figure shows the survey profile with the initial sample design and non-response weight applied (including post-stratification by London borough) but without the application of any calibration weighting. Results are based only on the achieved sample for quarter 2 (i.e. from July to September 2015).
- 5.17 The survey data is broadly consistent with the 2011 Census, although we would note:
- » A higher proportion of female survey respondents and lower proportion of males;
 - » A lower proportion of survey respondents aged under 44, and a higher proportion of respondents over this age;
 - » Whilst there are some differences on ethnicity, most notably more White Other than recorded at the time of the Census, this is a continuation of trends seen from 2001 to 2011 and probably represents a real change in the population over the period 2011-15; and
 - » There are some differences on economic status: the interviews during the quarter included a notably higher percentage of retired people than identified by the 2011 Census, with lower proportions of economically active respondents.

Figure 7: Profile of achieved sample without calibration weighting (Source: PAS 2015-16, Quarter 2)



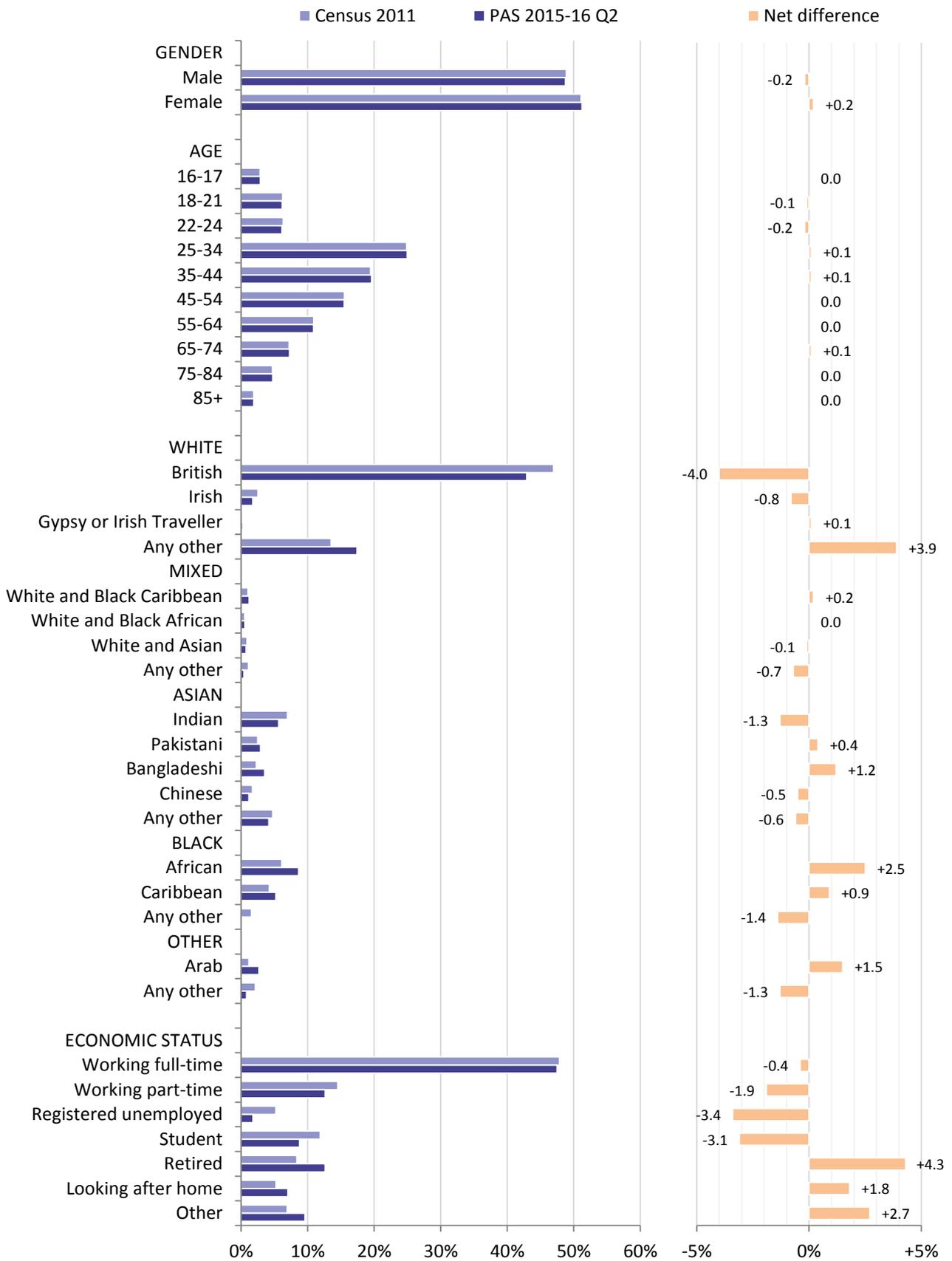
Final sample weights

- 5.18 Given the response bias identified on gender, age, and the high proportion of retired respondents, calibration weights have been derived and applied to the survey data.
- 5.19 The final sample weight therefore takes account of all four component weights derived for the initial weighting process (compensating for unequal probabilities of selection in the sample design and differential non-response rates, calculated as the product of $w_1 * w_2 * w_3 * w_4$), together with post stratification weights to ensure that:
- » The proportion of respondents in each age-gender category is consistent with the adult population aged 16 or over; and
 - » The proportion of respondents in each London borough is consistent with the adult population aged 16 or over from the latest Office for National Statistics (ONS) Mid-Year Population Estimate.
- 5.20 Figure shows the adjusted survey profile with the final weights applied, including sample design and non-response weights together with post-stratification weights to calibrate the age-gender profile and stratification by London borough. Results are once again based only on the achieved sample for quarter 2 (i.e. from July to September 2015).
- 5.21 The calibrated survey data is more consistent with the 2011 Census:
- » The calibration weights ensure that the survey is representative by age and gender;
 - » Some of the differences previously noted about ethnicity remain evident and there is a reduction in the proportion of White British and White Irish ethnic groups, but this is consistent with findings from previous quarters and likely to be associated with changes in the population since 2011; and
 - » Economic activity is now broadly in line with the Census, although there is a lower proportion of unemployed respondents and students (again likely to be associated with changes in the population since 2011) and whilst the proportion of retired respondents remains higher than the Census figure, the calibration weights have substantially improved any possible response bias.
- 5.22 The survey data would appear to be broadly representative of the London population and, following weighting, the achieved sample provides a suitable basis for analysis.

Design effect and design factor

- 5.23 The design effect (DEFF) of the sample is primarily influenced by stratification, probability of selection and differential response. DEFF can be estimated by taking the sum of the squared weights divided by the sum of the weights, and the design factor (DEFT) obtained by taking the square root of this estimate. Therefore, based on the final survey weights for quarter 2, we can calculate an estimate for DEFF to be 1.35 and consequently DEFT will be 1.16.
- 5.24 On the basis of a simple random sample of 3,204 interviews being accurate to within $\pm 1.7\%$ points at 95% confidence, a design factor of 1.16 implies that the achieved sample is actually accurate to within $\pm 2.0\%$ points at 95% confidence ($\pm 1.7\% \times 1.16$). Furthermore, based on a design effect of 1.35 we can establish that the achieved sample is comparable to a simple random sample of 2,367 individuals aged 16 or over ($3,204 \div 1.35$); assuming that they were selected purely at random from across the whole of London, based on everyone having equal probability of selection and without any response bias.

Figure 8: Profile of achieved sample with final sample weights (Source: PAS 2015-16, Quarter 2)



Appendix A:
Questionnaire script

Appendix B:
Advance letter

Appendix C:

Frequently Asked Questions leaflet
