

The census and future provision of population statistics in England and Wales

Themes for responses to the ONS Beyond 2011 public consultation

Beyond 2011 Independent Working Group (IWG), 29 November 2013.

ONS requires a response by the end of the consultation period, on 13 December 2013, online at <http://www.surveymonkey.com/s/XY3SK3W>. This report is aimed at helping those who have not yet provided a response and are looking for guidance following the meeting organised by the Independent Working Group on October 21st at the Royal Geographical Society.

The Beyond 2011 independent working group on the future of population and social statistics was established in June 2013 “to supply reports and evidence when these are needed; to consider the value of population and social statistics for national and small areas; to collaborate with ONS in developing the very best methods for estimation.”

We are aware that some individuals and organisations have already submitted or have drafted major responses to the Consultation, with detailed consideration of the options from the submitter’s perspective. Members of the IWG are not collectively promoting particular answers to the Consultation questions but, recognising the importance of these issues for future population statistics in the UK, we strongly encourage such responses. We offer the thoughts below, ordered according to the questions in the consultation document, simply to stimulate the reader’s own consideration of the options.

ONS strongly encourage online responses to the consultation, but if responses do not exactly fit the survey questions, the survey allows free responses that allow cases to be made under whichever question the responder may choose.

We welcome continued contact with interested individuals and organisations, who can contact us on AreaStatistics@gmail.com. Our members are:

Piers Elias, Tees Valley Unlimited, and co-chair of Local Authorities’ liaison with central government on population statistics (CLIP)

David Martin, Professor of Geography, University of Southampton, Deputy Director ESRC UK Data Service and National Centre for Research Methods

Paul Norman, Lecturer in Human Geography, University of Leeds

Phil Rees, Emeritus Professor of Population Geography, University of Leeds

Ludi Simpson, Professor of Population Studies, University of Manchester, immediate past President of the British Society for Population Studies

After two introductory pages, the [consultation survey](#) lists the questions that it asks, then asks for your details, before giving space for responses to each question:

1. What are your views of the different census approaches described in the consultation document?

2. Please specify any significant uses of population and housing statistics that we have not already identified.
3. Please specify any significant additional benefits of population and housing statistics that we have not already identified.
4. What would the impact be if the most detailed statistics for very small geographic areas and small population groups were no longer available? High, medium, low or no impact?
 - 4.1. If medium or high impact, please give further information.
5. What would the additional benefit be if more frequent (i.e. annual) statistics about population characteristics were available for areas like local authorities and electoral wards? High, medium, low or no additional benefit?
 - 5.1. If medium or high, please give further information.
6. Please specify any significant uses of census information for historical research that we have not already identified.
7. What advantages or disadvantages for genealogical or historical research can you see from a move to a solution based on archiving administrative sources?
8. What are your views of the risks of each census approach and how they might be managed?
9. Are there any other issues that you believe we should be taking into account?

We repeat the ONS questions in italics with their preamble, and provide our thoughts on each.

***ONS Q1:** What are your views of the different census approaches described in this document?*

The two options on the table have been fairly characterised by ONS as “great statistics once every ten years, or good statistics more frequently”. Under the survey option, basic population counts by age and sex could be provided annually to a fair quality standard, even for the smallest current census output areas (OAs – mean 300 persons). Under the survey option social characteristics would no longer be available for units of this size, but would be available as three-year and five-year averages in restricted form for neighbourhoods (LSOAs approx 1,500 population and MSOAs approx 5,000 population), and annually with limited detail for local authorities. ONS provide detail of the types of data that could be available, for example a small count of 800 in an average LA from would be known from one year’s survey as between 480 and 1120 with 95% confidence.

We consider the different approaches to represent a possible major shift in the provision of statistics which would end the decennial census of population statistics begun in its modern form in 1841, which underpins the whole conduct of population estimation and social surveys. The options being offered for consultation are a modernised census, intended to be conducted online as far as possible, or an option combining systematic use of linked administrative data to provide annual population estimates and a 4% annual survey to provide sub-national social characteristics (attributes) with greater regularity but less accuracy and less detail. We refer to this as the administrative data and attributes survey option, although ONS rather confusingly refer to both as census options.

Our comments below suggest that neither option is optimal. There is too much lost in the administrative data and attributes survey option and significant risk associated with the new legislation and new methods involved in that option. Yet the clear promise of administrative records for improved population statistics should be pursued. The online census option suffers, as with all censuses, from decreasing accuracy over the decade after the census and when used census statistics are, on average, 5 to 7 years out of date.

More detail is given in response to other questions.

Uses and benefits of population and housing statistics

A good understanding of uses and benefits is critical to understanding the relative merits of each method. These questions ask you to tell us about any uses or benefits of census statistics that we have not yet fully understood.

In your answers, please provide as much evidence as possible. Uses that fulfil a regulatory or legal requirement are also of particular interest.

ONS Q2: *Please specify any significant uses of population and housing statistics that we have not already identified.*

Cost effectiveness is a major driver in the political decisions to be made. If the decision is not to be made simply on overall cost, information on specific uses and benefits must be provided to ONS. Some examples are provided under Q4 and Q5 below, but each response to the consultation will usefully attempt to add its own further example or examples.

ONS Q3: *Please specify any significant additional benefits of population and housing statistics that we have not already identified.*

As for Q2

Impact of different census approaches on statistical uses

These questions ask for your views on the real impact the different census approaches would have on operational or business decisions.

ONS Q4: *What would the impact be if the most detailed statistics for very small geographic areas and small population groups were no longer available? High, medium, low, or no impact?*

ONS Q4.1 *If medium or high, please give further information.*

Realistic examples are likely to include more than one characteristic, for example age as well as caring. They are likely to involve monitoring change over time. And may involve comparing one area with another, or one or more areas with a national average.

Examples that have been given are included in the presentations at <http://www.rgs.org/OurWork/Advocacy+and+Policy/Environment+and+Society+Forum/The+future+of+small+area+population+statistics.htm>

- Identifying neighbourhoods with significant numbers of household in multiple occupation (Mark Fransham presentation).
- Planning cultural diversity within funeral services (Nissa Finney presentation)

The IWG has received examples of use of detailed small area population characteristics across a wide range of activities including: flood management and assessment; emergency planning; local housing management and planning; market research; retail site location; definition of travel to work areas and multiple public health uses. Those uses which would be most adversely affected by the administrative data and attributes survey option are those which require a combination of population characteristics (e.g. ethnicity, car ownership, tenure) with small and ad hoc geographical units.

Although ONS stresses the need for specific examples, more general points about loss of information may be made here, or these comments may suggest specific examples:

Quality criteria for statistics from a survey require debate with specific examples. The suggested acceptable quality criterion is a 95% confidence interval of at most 40% of the estimate. This means that in ONS examples of what could be provided from a 4% survey, an estimate is acceptable with a confidence interval as wide as 60%-140% of the estimated value. In such a situation, it may not be possible to identify a significant difference between two areas even though one was more than four times the other. Confidently distinguishing a narrowing from a widening inequality or ranking areas reliably on key indicators under such a system are major issues which have not been resolved. The impact of accepting such quality criteria needs to be tested with specific examples, but responses may suggest examples where a 10% confidence interval around an estimate would be more appropriate.

The lost capacity to target populations for marketing or for sampling, when data for smaller areas are not available. The loss depends on how clustered a population is in smaller and larger areas, and this varies for each population. (examples for ethnic group were quantified in Nissa Finney's presentation on 21st October, and further quantified by Chris Lloyd of Liverpool University)

It does not appear that interaction datasets could be provided at all under the administrative data and survey-based option (migration and commuting, currently

available at small area level from the census). ONS consultation offers no solutions to this loss, particularly of significance to transport planners, local government and migration researchers. The debates of the mid-2000s about 'white flight' and 'affluent flight' would have had no data to draw on.

The Census may be the only solution for small parishes or small villages. Parishes need information for their Neighbourhood Plans – LAs need robust evidence to support Local Plans but without a Census, local surveys will be needed which is costly and we would lose national consistency and authority.

The reduced ability to define new areas for analysis. The loss of the smallest areas greatly reduces the flexibility to assemble statistics for analytical areas to describe service catchment areas (e.g. schools, shops), areas prone to environmental hazards (e.g. flooding), or future administrative units (e.g. ward boundary reviews).

ONS Q5: *What would the additional benefit be if more frequent (ie annual) statistics about population characteristics were available for areas like Local Authorities and Electoral Wards? High, medium, low, or no impact?*

ONS Q5.1 *If medium or high, please give further information.*

More regular local statistics are needed to govern the UK in the 21st Century. The pace of social change and the fragmentation of local service management demand more rather than fewer local statistics, *and* more frequently. Various examples were presented on October 21st from the perspectives of health service resource allocation (Phil Rees), cultural integration (Nissa Finney), and land use planning (Mark Fransham).

The Localism Act has demanded more regular monitoring of local areas. While indicating benefit from more frequent statistics, the administrative data and attributes survey option does not provide more than age-sex structure or univariate characteristics for local areas, while the Census option provides the detail but not the frequency desired.

Impact of different census approaches on historical research

ONS has worked with The National Archives and genealogists to understand how census information is used in historical research. These questions ask you to tell us about any uses or benefits of census information that we have not yet fully understood and to share your views on the potential impact of the different census approaches.

ONS Q6: *Please specify any significant uses of census information for historical research that we have not already identified.*

ONS Q7: *What advantages or disadvantages for genealogical or historical research can you see from a move to a solution based on archiving administrative data sources?*

We have not considered these questions.

Managing risks

As described in section 3, there are risks and opportunities with both census approaches. These questions give an opportunity to comment on these and to raise any other issues.

ONS Q8: *What are your views of the risks of each census method and how they might be managed?*

The risks of moving away from a Census without alternative methodology and legislation in place are too great. In 2014 Parliament will be making its biggest ever decision on the UK statistical system. For a decision to be made in this parliament, as census-taking or an alternative requires, the UK Statistics Authority will need to make a recommendation in spring 2014 for a parliamentary decision perhaps in September 2014. While the administrative data plus 4% survey promises a great deal, it loses key statistical products (small areas, longitudinal and flow data) while carrying substantial risks of losing quality for other products because:

- a. Legislation is not in place to ensure sharing of attribute data from administrative records, nor the submission of administrative data developments to statistical quality priorities, nor the compulsory nature of survey replacements to the census.
- b. The adequacy of quality assurance of the population estimates from administrative data and surveys has been questioned by the methodological review commissioned by ONS. It will take time and experience to reach reliable methods to replace the Census.

There are likely to be increased challenges for both options of public resistance to government enquiries, low response rates, increased need for expensive follow-up of non-respondents, all risking social and geographical bias in the resulting data. The methods to deal with these challenges in the 2011 Census are widely viewed as very successful and are likely to be needed for any options in the future.

- a. In the longer term, comprehensive use of administrative data may help fill gaps in local population estimates. But this is unlikely in the short-term: administrative data sets were used as part of the quality assurance of 2011 Census but could not directly fill gaps because of their own unreliable completeness. A programme to use and improve administrative data for population estimation would be clearly welcome.
- b. Readers may also wish to consult the Royal Statistical Society's independent review of methodology associated with the two Beyond 2011 options, available at <http://www.ons.gov.uk/ons/about-ons/who-ons-are/programmes-and-projects/beyond-2011/reports-and-publications/methods-and-policies-reports/beyond-2011--independent-review-of-methodology.pdf>

A high quality register of addresses underlies positive developments in both options. The address register developed for the 2011 Census allowed targeted enumeration and was key to both quality assurance of the results and their final acceptance. There is a concern that a maintained address register be stipulated as part of the options, along with a clear articulation of whether and how individuals would be grouped into households and whether household-based statistics could be produced. Households are currently an important focus of policy but are not easily or accurately captured by lists of matched individuals.

The use of statistics for small areas sourced from surveys raises serious challenges for statistical education and analysis. The survey option produces statistics with different time frames (single years and various multiple-year averages), accuracy differing between areas (dependent on the area's population size), and for political boundaries that change on a frequent basis in Britain.

- a. These challenges risk losing or confusing a large section of those who use census products transparently, and would require an extensive new suite of analytical approaches that have not yet been developed.
- b. Users of local 'neighbourhood' statistics are not usually trained analysts, and will use central estimates with little or no regard to confidence intervals. The resulting confusion, or alternatively suppression of results with wide confidence intervals, would be damaging for official statistics.
- c. Evidence from the USA where the American Community Survey (ACS) has been implemented since census 2000 and shares the important feature of pooling estimates across multiple years, suggests serious difficulties even for trained analysts.

The maintenance of a census without taking advantage of administrative records risks losing increased efficiency for population estimation.

- a. The research preceding the Beyond 2011 consultation highlights the potential gains to population and household estimates from intelligent processing of administrative records. It would be unreasonable not to implement the lessons from this research.
- b. These gains are especially clear for small areas, as already demonstrated by the annual small area population estimates produced by ONS using administrative data counts, though currently within a system anchored by a decennial Census.
- c. There is far greater potential for the generation of social characteristics from administrative data sources than has yet been explored. While legislation is not in place to ensure the quality of attribute statistics from administrative data, it would not be proper to rely on them, and they are not part of the current proposals. But their exploitation should be a priority within the future of official statistics.

ONS Q9: *Are there any other issues that you believe we should be taking into account?*

What has emerged from discussions and meetings in the Consultation period is a recognition that we should think about improving the Population and Social Statistics System as a whole, not just maintaining one particular instrument, the census.

The option to maintain a census could be developed much further than has been so far discussed. By 2021 a census designed to be online might be the basis for regular sample follow-ups to provide more regular social statistics. This would be one hybrid solution, combining both of the consultation proposals. Another might legislate for a personal record based on the census returns to be updated by the respondent for statistical purposes, with compulsory updates each five years.

- a. Far from being unchanged for centuries, the dynamic nature of the census should not be underestimated. Its development over the past 40 years has focused on the identification of groups that are otherwise hard to count – ethnicity and other cultural characteristics, illness and disability, and smaller areas. These characteristics are difficult to measure through administrative records and the smaller areas are not provided well by surveys.

The risks to moving from the census before 2021 are large but do not rule out a planned transition to other options in which the Census may or may not feature.

- a. Support for a census in 2021 and the development of administrative record statistics is not on the basis of “we want everything”, which is accepted as unrealistic and inefficient. Rather there is widespread concern that the work done by ONS to date, although promising, simply does not deliver sufficient evidence that the proposed options could be delivered as planned without major risks, nor does it provide sufficient information on which to evaluate the quality of the likely outputs. There is reasonable concern that the proposed survey option implemented for 2021 will not have the appropriate environment and that the optimum result may be a hybrid or transition solution that could only emerge from a continued census.
- b. European countries that have moved from a census have done so over a twenty year period. Most European countries without a Census have the advantage of a pre-existing population register; thus data linkage starts from a much stronger base than it would in the UK.