

Summary of the uses of census information

September 2013

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About this document

This paper summarises the uses of census information. It is one of a series of reports that support a public consultation by ONS on the census and the future provision of population statistics in England and Wales.

Other reports accompanying this are:

C1 - [The census and future provision of population statistics in England and Wales – Public consultation, September 2013](#)

C3 – [Summary of the benefits of census information, September 2013.](#)

For more information

Go to www.ons.gov.uk and search on Beyond 2011

Email us at beyond2011@ons.gov.uk

1. Introduction

This paper provides a high-level summary of users' ongoing requirements for census information.

The Office for National Statistics (ONS) has been working to understand the requirements of our users in England and Wales, to determine what information is needed. In particular, we have identified specific topics and geographic levels that are required, and the ways in which the statistics are used to support organisations' activities. We have recorded the requirements of different sectors in a series of 'User statements, and these are summarised in this document.

Research is ongoing and we would be pleased to receive further information – **particularly from organisations or agencies not already covered in this paper.** In particular, we are interested in your requirements for statistics for small geographic areas (below local authorities), and the types of cross-tabulations used.

Please note that the following statements are a condensed overview of the detailed requirements that users have given to us.

How the summaries in this paper were developed

Central Government departments	Statements prepared through research and discussion with nominated departmental representatives. Summary statements used in this report have been submitted for comment to relevant departments, and comments received have been taken into account.
Welsh Government	Statement prepared through meetings and correspondence with Welsh Government.
Local government	Statements developed through local authority experts, workshops, presentations, correspondence as detailed in Appendix B. Statements were also published on our website for comment and on StatsUserNet in June 2013.
Commercial	Statement drafted and cleared following discussions with the Demographics User Group (DUG)

How the summaries in this paper were developed - *continued*

Emergency services	Statement drafted through research and correspondence.
Genealogy	Draft statement discussed with The National Archives and our Genealogy Advisory Group. Statement also published on our website for comment and StatsUserNet in August 2013.
Third sector (charities and voluntary)	Statement drafted through research and presentations at voluntary sector event held at Royal Statistical Society in June 2013. Statement was also published on our website for comment and on StatsUserNet in June 2013. An article asking specific questions was placed in the Small Charities Coalition Newsletter and on RSS E News. Further expert contacts were identified and their comments incorporated.
Third sector (policy research)	Statement drafted through desk research. Further engagement planned with this sector.
Eurostat (The Statistical Office of the European Union)	Statement drafted and cleared by internal Eurostat liaison lead and sent to Eurostat for comment.
Research and academic sector	Statement drafted through research and correspondence.
Utility companies (gas, electricity, etc)	Statement drafted through research and correspondence, drawing on contacts supplied through the DUG.
Housing sector	Statement drafted through research and correspondence.
Internal ONS	Statements drafted in discussion with internal departments.
Longitudinal Study	Statement drafted through research and correspondence.

2. Summary of user statements

2.1 Central government

Central government departments

Department for Communities and Local Government (DCLG)
Department for Business, Innovation & Skills (BIS)
Department for Education (DfE)
Department for Transport (DfT)
Department for Work and Pensions (DWP)
Home Office
Ministry of Justice (MOJ)
Department of Energy and Climate Change (DECC)
Department for the Environment, Food and Rural Affairs (DEFRA)
Department for Health and the Health and Social Care Information Centre
Bank of England
HM Treasury (HMT)
HM Revenue and Customs (HMRC)
Department for Culture, Media and Sport (DCMS)

The following pages describe how central government uses census data, by department.

Department for Communities and Local Government

DCLG works to move decision-making power from central government to local councils; help put communities in charge of planning; and encourage regeneration and local economic growth.

Census data, mid-year population estimates and other household estimates are used in the following areas:

- **Resource allocation** - the allocation of funding to local authorities through the Local Government Finance Settlement as well as the calculation of a range of other special grants.
- **Policy development/monitoring/review** - the formulation of strategies such as the National Strategy for Housing in an Ageing Society, development of policies (eg National Planning Policy Framework), programmes and plans, including those associated with encouraging regeneration, economic growth and risk management for fire and rescue authorities. In addition to supporting informed decision making the data are used to evaluate the effectiveness of specific interventions such as the success of equal opportunities policies.

- **Service planning and delivery** - understanding of area needs and characteristics which support the design of appropriate responses and targeting of specific interventions. These include ensuring that housing needs are being met and that all groups have access to suitable accommodation, as well as tackling deprivation, improving community integration and encouraging local participation.
- **Research and analysis** - social and public policy research, the modelling of policy impacts and calculation of key statistics (eg denominators for the proportion of households who are homeless). In addition census variables are used as direct inputs to the Indices of Deprivation which inform projects across government. Census and population data underpin the methodology of the English Housing Survey which supports much of the department's housing related work as well as the derivation of urban/rural classifications.

Data requirements

DCLG uses a great deal of census data. Population estimates at local authority level are critical for funding allocation and policy review, but data at small area level are required for policy research and development in several areas of the department.

Department for Business, Innovation & Skills

BIS supports economic growth, invests in skills and education to promote trade, boost innovation and help people to start and grow a business. It also works to protect consumers and reduce the impact of regulation.

Census, population and survey data are used for:

- **Policy development** - a strong evidence base is vital for the Government's economic strategy most notably plans to achieve sustainable and balanced growth that is evenly distributed across the country. The department is coordinating work associated with the determination of new Assisted Areas. Census data underpin many of the criteria or suggested metrics (eg employment, qualifications and migration) that will be used to identify and prioritise areas. Moreover, in accordance with EU guidance, data for wards will be the building blocks for some of this work. Data on socio-economic status from the census and surveys such as the Labour Force Survey support work designed to create a more educated workforce, extend participation and ensure that support is targeted appropriately.
- **Research and analysis** - the department's extensive programme of research is designed to provide the insights and evidence base to support the Government's growth agenda. For example, detailed work undertaken by the Spatial Economics Research Centre provides the basis for understanding disparities in economic prosperity at all spatial levels (including regional, city region, local and neighbourhood levels). In addition, census data are the basis for the derivation of the mid-year population estimates and for weighting and grossing surveys such as the Labour Force Survey which are used to calculate measures such as higher education participation rates, provide regional economic performance indicators as well as information on employment, skills and travel to work.

Data requirements

A range of population estimates data, from national to neighbourhood level, are critical to understanding change.

Department for Education

The DfE is responsible for education and children's services in England and is working to drive up standards, ensuring that all children and young people can succeed, and support families on low incomes.

Census and related population data are used for:

- **Resource allocation** - both capital and resource expenditure, including bids for investment in new schools as well as spending on improving the condition of existing buildings, making special provision for 2- and 3-year-olds and supporting economically disadvantaged young people aged 16 to 19.
- **Policy development** - informing decision making and planning as well as monitoring the impact and progress of key policies (eg the Ten Year Strategy for Childcare). At the same time these data enable the department to better understand the issues affecting attainment, participation and social mobility and to target interventions more effectively.
- **Research and analysis** - uses cover research design and the evaluation of outcomes, including the identification of test or pilot areas, comparative analysis and the interpretation of results. In addition, the information provides inputs to the analytical models which underpin essential work on pupil projections and post-16 participation.

The department relies directly or indirectly on census data to provide denominators for the derivation of indicators (eg take-up rates for free early education and the proportion of children in need). Other analyses depend on the availability of survey data or specific products such as area classifications or the Indices of Deprivation, which in turn depend directly or indirectly on data from the census.

Data requirements

Key requirements are for data at national and local authority level.

Department for Transport

The DfT provides a modern, efficient transport infrastructure that is essential for economic growth, well-being and quality of life. Economic and statistical analysis, appraisal, evaluation, modelling and research are integral to the work of the department.

Census and related population data are vital for:

- **Resource allocation/funding** - appraisal and decision making processes including the assessment of social and distributional impacts for funding transport schemes and major infrastructure investment as well as the allocation of resources via the

Integrated Transport block grant.

- **Policy development/monitoring/review** - the National Transport Model and other related models are used to support a range of policy and decision making processes, departmental strategies and strategic reviews (eg national road traffic forecasts, carbon reduction strategy and the Eddington Transport Study).
- **Other analytical requirements** - a range of social and operational research, economic advice and other analyses including the design and implementation of the National Travel Survey, defining catchment areas, calculating access times and measuring access to services.

Data requirements

The continued availability, and in-built flexibility, of small area data are vital for the work of the department. Data are used at all levels, with some local studies using OA level. Again, up to date population estimates are critical.

Department for Work and Pensions

The DWP is responsible for welfare and pension policy. This includes understanding and tackling the root causes of poverty, encouraging people to work and making work pay, encouraging disabled people and those with ill health to work and be independent, and providing a decent income for people of pension age and promoting saving for retirement.

Census, population and survey data are used for:

- **Resource allocation** - to secure money from the European Social Fund to provide employment related support and places on work programmes for those most in need.
- **Policy development** - decision making processes including reviews to assess and understand the effect of policy changes. In addition these data provide key inputs to models which are used to support policy development and evaluation, to estimate the effect of specific reforms, understand change over time and the associated expenditure implications. The department's twice yearly benefit forecasts (over the medium and longer term) draw on these models which in turn rely on accurate demographic and household information.
- **Research and analysis** - the department has an extensive programme of social research to provide the evidence base to inform strategy, policy making and delivery. Data taken from the census or based on it are used to select areas in which to conduct research, as control variables for statistical/econometric analysis, and for weighting/grossing surveys. The latter is especially important as the department relies on its Family Resources Survey and ONS's Labour Force Survey, for example, for policy development, monitoring and evaluation. In addition, census population and household counts are used as denominators for deriving a range of indicators as well as for National Statistics outputs.

Data requirements

A range of population and social statistics is used at national, regional and local authority levels. Smaller geographies are used in some areas of research.

The Ministry of Justice

The MOJ works to protect the public, reduce re-offending and to provide a more effective, transparent and responsive criminal justice system. The department is also responsible for making new laws, strengthening democracy and safeguarding human rights.

Census data and the mid-year population estimates are used for:

- **Policy development** - to support decision making processes and improve public trust and confidence in the criminal justice system, including understanding sentencing and the sentencing process. For example the census provides information both on area and neighbourhood factors, including socio-demographic characteristics which in conjunction with survey data can be used to predict attitudes and levels of trust. Census information also contributes to work on assessing the impact of specific policies (eg take-up of legal aid by ethnic groups).
- **Research and analysis** - these contribute to the department's programme of research by providing contextual information and a better basis for understanding attitudes to the criminal justice system as well as the impact of court closures by examining factors such as socio-demographic characteristics, and journey times. Extensive use is made of the Indices of Deprivation, area classifications and other geo-demographic indicators, which rely directly or indirectly on data from the census to understand the characteristics and circumstances of specific client groups and to develop a range of forecasting tools. The re-based mid year population estimates which rely on the census are used for weighting and grossing the Crime Survey for England and Wales. Similarly, population counts provide denominators for the calculation of a range of key measures including crime rates, rates of stop and search as well as arrests analysed by ethnic group.

Data requirements

Up to date population estimates are critical. Data are used at all geographies but information about change and ethnicity are important.

Home Office

The Home Office's responsibilities include reducing and preventing crime, controlling immigration and keeping the UK safe from the threat of terrorism.

Census and related population statistics enable:

- **Resource allocation** - supporting funding decisions, most notably the money distributed to police authorities via the Police Main Grant.
- **Policy development** - data from the census is critical for the development of strategies as well as the design and evaluation of policies including those on migration and integration. The Home Office makes extensive use of census data to understand the needs of specific communities and to promote community cohesion.

- **Research and analysis** – data from the census support methodological work including ‘Most Similar Groups’ analysis, which is used for comparing crime and police performance between areas. At the same time the new migration-related questions will support work to understand the impact of migration and assess, at local level, the extent and speed of integration.

Data requirements

Data are required for a range of geographies.

Department of Energy & Climate Change

DECC is working to ensure that the UK has secure, clean, affordable energy supplies, and promotes international action to mitigate climate change.

Census data are used directly and indirectly for:

- **Policy development** - to develop, focus and target policies, most notably those associated with fuel poverty. Better information on households and people helps understanding of those susceptible to fuel poverty, as well as the role and impact of energy efficiency measures, and contribute to wider work on improving the thermal efficiency of the housing stock and assessing trends in energy consumption.
- **Research and analysis** - data from the census support analysis of sub-national energy consumption and contribute to the model used to derive sub-regional estimates of fuel poverty as well as ongoing methodological and analytical work to improve fuel poverty modelling, develop new and improved indicators. Small area data may be used to impute household characteristics as part of work to develop a new National Household Model. The department makes extensive use of the English Housing Survey as well as the Indices of Deprivation and household projections, all of which depend directly or indirectly on the census.

Data requirements

The department has an increasing need for up to date data at local authority and small area level because new models rely more and more on small area data. Population and household size characteristics are key.

Department for the Environment, Food & Rural Affairs

Defra's responsibilities include supporting a strong and sustainable green economy including thriving rural communities, supporting and developing farming; encouraging sustainable food production; enhancing the environment and improving the quality of life in England.

Data from the census are used both directly and indirectly for:

- **Policy development** - a robust, authoritative evidence base is essential for policy development, evaluation and review (eg Uplands Policy Review). In particular, information is needed to understand change over time (eg recent growth in rural areas, and the increasing interdependence between rural and urban areas); improve opportunities; tackle social exclusion; enhance access to services and deal with environmental issues including emissions and human health.
- **Research and analysis** - support a range of analytical work including profiling, testing and evaluating pilot projects (eg Rural Growth Network pilots). In addition, population and survey estimates are used for the derivation of a range of indicators or outcome measures (for example, those on sustainable development and healthy lifestyles), for weighting/grossing surveys and producing area classifications.

Data requirements

Information is needed at and below local authority level. Good statistics for rural areas are obviously important.

Department for Health

The Department for Health leads, shapes and funds health and care in England, making sure people have the support, care and treatment they need.

Census, population and survey data are used for:

- **Resource allocation** - despite increasing reliance on data held by medical practitioners, the distribution of funds to Clinical Commissioning Groups in England includes specific adjustments which depend upon census data on disability, ethnicity and highest level of education qualification at lower super output area level.
- **Policy development** - support decision making by providing contextual information for the development of strategies and policies most notably those associated with reforming the health and social care system (eg 'Healthy Lives, Healthy People: Our Strategy for Public Health in England' and 'Recognised, Valued and Supported: Next Steps for the Carers Strategy'). At the same time census and related population data have contributed to the development of statutory guidance such as the Public Health Outcomes Framework, the Adult Social Care Outcomes Framework and the NHS Outcomes Framework which provide the structure for measuring improvement and reducing inequalities. In addition there is a need for

specific information (eg ethnicity and religion) for equality assessments and analyses to identify potential areas of disadvantage.

- **Sponsoring the Health and Social Care Information Centre** - core functions of this new delivery organisation include collecting, analysing and presenting national health and social care data, as well as building up a library of indicators that can be used to measure the quality of health and care services.
- **Research and analysis** - counts by age and sex from both the census and the mid-year population estimates provide the basis for the derivation of a multiplicity of outcome measures or indicators. In addition to providing denominators for the derivation of basic mortality, access and prevalence rates such information is used to calculate measures which constitute an integral part of the NHS Outcomes and other frameworks. At the same time these frameworks make extensive use of other information (from surveys, the Indices of Deprivation and ACORN) which relies directly or indirectly on the census.

The Health and Care Information Centre is working with both the Department of Health and other agencies (eg NHS England) to support the ongoing development and improvement of health, public health and social care information, indicators and measures used for national accountability, measurement, audit and reporting.

Further use is made of a range of census data at small area level to support the formulation, development and monitoring of joint strategic needs assessments and other related work to reduce local health inequalities in local authorities. Local Health (an interactive mapping and reporting package) gives local authorities and the NHS the small area data required to formulate Joint Strategic Needs Assessments of the needs of local populations, in order to inform the commissioning of health and social care services.

Data requirements

Data are used at all geographies including small areas. Some studies use OA data and detailed cross-tabulation, but more up to date data for higher geographies will be helpful.

Bank of England

The Bank is responsible for maintaining price stability, supporting the economic policies of the Government and promoting economic growth.

Although it does not directly use of information from the census it does rely on population estimates, population projections and survey data, all of which depend on census outputs:

- **Policy development/monitoring/review** - draws on contextual information from the Labour Force Survey and the Living Costs and Food Survey as well as population and migration statistics.
- **Other analytical requirements** - population and household estimates as well as survey data contribute to the derivation of estimates of household consumption expenditure, other per capita measures and the calculation of the Retail Price Index and the Consumer Price Index. Data from the Labour Force Survey underpin longitudinal and cross-sectional analysis of the labour market. In the future, data from the Wealth and Assets Survey may be used.

Data requirements

Data are required only at national level.

HM Treasury

HMT is the government's economic and finance ministry, maintaining control over public spending, setting the direction of the UK's economic policy, and working to achieve strong sustainable economic growth.

While not making direct use of information from the census it relies on population estimates, projections and survey data, all of which depend on census outputs:

- **Policy development/monitoring/review** - uses population estimates and projections to support macro-economic policy and related decision making processes, including work associated with forecasts for the economy and labour market.
- **Other analytical requirements** - population estimates are used to weight and gross surveys including the Labour Force Survey and the Living Costs and Food Survey which underpin much of their work. The Labour Force Survey is the primary source of labour market statistics including details on employment, unemployment and inactivity. The Living Costs and Food Survey is used to provide estimates of consumer expenditure for the expenditure measure of Gross Domestic Product, and weights for calculating the Retail Prices Index and the Consumer Prices Index.

Data requirements

Data are required only at national level.

HM Revenue & Customs

HMRC relies on its administrative data and makes little direct use of census statistics.

Department for Culture, Media and Sport

The DCMS has indicated that it makes little use of information from the census.

2.2 Welsh Government

About the Welsh Government

The Welsh Government works to help improve the lives of people in Wales and make the country a better place to live and work. In accordance with Schedule 7 of the Government of Wales Act 2006, devolved responsibilities cover most areas of public life including health, education, economic development, transport and the environment. The Programme for Government presents the Welsh Government's plan for meeting the outcomes that it is working towards.

How Welsh Government uses census data

Census statistics are used alone or in combination with other data to support decision making, research and debate, assess the effectiveness of key activities, performance and value for money. In particular the data are used for:

- **Resource allocation** - funding for local government, health and social services, the Welsh Government Block Grant as well as bids for European Structural Funds. Planned changes affecting both financial arrangements for the Welsh Government (recommendations set out in the report published by the Silk Commission in November 2012) and health service funding are likely to increase the need for population and attribute data.
- **Policy development/monitoring/review** - providing the basis for strategies and plans such as 'Building Resilient Communities' – taking forward the Tackling Poverty Action Plan, 'Fairer Health Outcomes for All' as well as policies to stimulate growth and employment. Population and specific socio-demographic variables are required for the development and evaluation of Single Integrated Plans and assessing the equality and other impacts of planned legislation, policies and practices. The Welsh Government is responsible for implementing the Welsh Language (Wales) Measure 2011 and the information from the census on the Welsh Language is used widely to formulate and monitor the Welsh Language strategy.
- **Service planning/delivery** - planning, prioritising and improving services, supporting investment, including decisions on major programmes and infrastructure. Census data provide a sound and reliable basis for assessing changing demands, undertaking ongoing needs analysis, designing and targeting interventions and evaluating effectiveness thus helping the Welsh Government to deliver better outcomes and provide value for money.
- **Other analytical requirements** - a range of measures including analyses by socio-economic group and different dimensions of equality rely on census data. A number of Programme for Government Indicators, National Strategic Indicators and Statutory Performance Indicators for Welsh local authorities use census information or the mid-year population estimates as denominators. In addition, census and other population data are used to construct and quality assure the Welsh Index of Multiple Deprivation, to produce sub-national household projections and weight

responses from surveys such as the National Survey of Wales, the Welsh Health Survey and the Welsh House Condition Survey.

Data requirements

The Welsh Government has an ongoing policy requirement to assess the spatial distribution of the need for, and benefit of, public services. As a result the Welsh Government has indicated the importance of having consistent and comparable data on population numbers and attributes for a range of small area geographies including Middle and Lower Layer Super Output Areas.

2.3 Local government

Who uses census data in local authorities

There are 348 local authorities in England and Wales. Their use of census data is varied, wide-ranging and exceptionally complex. Uses include data for children's services (including education), health and social care, housing, planning and transport, as well as for other functions such as economic development, leisure and environmental services.

How local authorities use census data

In broad terms the data are used to support bids for funding, allocate resources, plan and deliver a range of services and meet specific statutory responsibilities - particularly those relating to equalities.

Details are summarised below.

- **Public health and social care** - these cross-cutting services draw on a range of census variables for a variety of geographical areas from wards to Output Areas. These are used to order to identify requirements, allocate resources, plan and deliver services as well as measure effectiveness. In addition to detailed requirements for information on age, gender and ethnicity, details on unpaid carers by age are important.
- **Children's services** - data such as population estimates by age, household composition (particularly lone parents) and ethnicity together with supplementary information from the Indices of Deprivation and child poverty indicators, are used to target support services. Basic demographic variables at Output Area level are used to create specific school catchment areas for planning school places, and migration data are used to develop demographic projections to assess future educational requirements.
- **Planning** - encompasses housing, transport and the environment. With the reduction of regional activity there is more local emphasis and a duty to cooperate with neighbouring authorities. Census data are vital for much of the work associated with developing and monitoring strategies and plans including both Local Plans and Neighbourhood Development Plans. For example, Strategic Housing Market Assessments require detailed data on both households and families.

Other specific duties include: managing housing supply and demand; housing specific vulnerable groups; combating overcrowding, homelessness and deprivation as well as improving housing quality. Use is made of basic demographic variables, population and household projections as well as information on household type, tenure, vacancies, second homes, central heating and special populations such as students and elderly in communal establishments. Qualifications, skills and economic activity variables are used to link housing to economic development planning. Specific transport uses include transportation modelling for planning major long-term infrastructure projects, and reviewing local bus and rail services to meet projected demand. These rely on small area data on age, household structure, travel to work, car ownership and occupation.

Data requirements

While data at local authority level is sufficient for some uses, including population and household projections, there are many requirements which depend on small area data including details for electoral wards or Lower Layer Super Output Areas. OA level data are often used to provide the 'building blocks' that can be assembled by LAs to meet their specific geographic needs. Information at Output Area level is needed to plan and deliver services for specific catchment areas, and is particularly important in rural areas.

Case study – Dorset County Council

Output area data allows Dorset CC to identify where there are older people living alone. This data has been used by the fire service to target campaigns at this potentially vulnerable group. It has also been used by the waste service as this group are more likely to need assisted collections.

Analysis of commuting patterns provides valuable evidence on where major road improvements / enhancements are needed. The local level origin-destination data allows Dorset CC to see the complexities of commuting patterns along with broad trends. Such evidence has been used for funding bids for road improvements. This information has also been modelled to look at the potential impact of increased housing and new employment sites.

Census data has provided base line information at a local level which is used in a range of forecasting activities to help inform local and strategic planning policies and decisions. This includes decisions on where to allocate land for housing and employment, and the associated infrastructure such as schools.

The census is the only source of data for many of the strands of diversity. This data is essential in all work the council does, as part of equalities impact assessments. Although Dorset has a relatively small black and minority ethnic population, it is important that the council has OA level data because these groups are potentially isolated. Data for larger geographies would mask diversity within local communities.

The recent rationalisation of the library service relied heavily on OA level census data both to assess the impact of potential closures on local communities and for the equalities impact assessment.

2.4 Commercial sector

How this sector uses census data

The commercial sector uses census information in four main areas to:

- **guide the location and expansion of stores** - planning store investments, developing network and retail strategies. This includes choosing sites, estimating sales forecasts, determining which products to stock and deciding which stores to extend, refurbish or close, as well as strategic decisions such as evaluating parts of the country for new sites, and which acquisitions may be viable. The investments involved are too large for companies to rely on 'gut feeling'. To build a new superstore costs in excess of £20 million and an extension perhaps 10% of this. The immediate financial costs and long-term losses caused by a poor location decision are huge.
- **target direct marketing** - using census data to target campaigns or promotions
- **support market research** - in designing surveys or understanding local markets
- **create geo-demographic neighbourhood classifications** - such as Acorn and Mosaic and associated consultancy advice.

Data requirements

There is a strong demand from the commercial sector for OA level statistics. This level of data is used to create ad hoc catchment definitions, but also for geo-demographic classifications, and for applying models to customer databases.

'Without this level of granular detail it would be extremely difficult to accurately interpret local demographic variations in order to develop a worthwhile sales projection or indeed on a macro scale commercial objectives in terms of location planning.'

Commercial users are most interested in basic demographic characteristics and socio-economic status (or other proxies for affluence). A wide range of topics currently feed socio-demographic classifications and market research - although this is a complex area where other sources are increasingly playing a role.

Top of the list of topics mentioned by commercial users are age, gender, students, affluence (eg income, social grade), employment, ethnicity, religion, internet usage, and also households, household composition / dependents, housing tenure, and car ownership. Counts and simple classifications of workplace or daytime populations are considered vital.

Some of these data are currently available from the census - some are not.

The immediate interest is in simple univariate counts - but some simple cross-tabulating of variables by age are also valuable.

2.5 Emergency services

Police forces

Census data are used with other information for area profiling, which in turn supports wider work on tactical interventions including crime prevention measures, the provision of advice and support. For example, detailed understanding of the characteristics of the population in small areas, and variations in housing type and density, help to ensure that policing methods and plans reflect local needs. Details on demographic characteristics can also provide a basis for understanding change over time, which contributes to wider work on assessing strategic priorities including overall policy development and the allocation of resources.

Another factor affecting both crime and policing is deprivation. Crime prevention strategies and plans, as well as those aimed at providing protection and reassurance, need to take account of local circumstances and the special needs of vulnerable groups. The Indices of Multiple Deprivation are used to support this work and to ensure that resources are directed to the areas of greatest need.

From both a strategic and a tactical perspective census-type data can be used to supplement existing knowledge and lend value to area profiling. In addition data on social housing (in relation to the impact of changing rent support), migration and birthplace are used to allocate translation services and other local resources.

The census provides a basis for estimating those in vulnerable groups (eg over 65s vulnerable to burglary and con-men).

Data requirements

The police forces use a wide range of census data down to very small areas (including OAs). More up to date data would be valuable.

Fire services

In strategic planning the fire services use data at LSOA and OA level for likelihood modelling. The data are almost all univariate Key Statistics, such as population by age groups, tenure, household types (especially one-person, lone parent and lone pensioner), communal establishments, etc. Cross-tabulations of limiting long-term illness by age/gender are also used.

At lower levels the models use Experian Mosaic public sector segmentation data and the Indices of Deprivation, which both incorporate census data. These data are used for planning and targeting community safety work for home fire safety visits, school visits, and media campaigns. The government-provided Risk Assessment Toolkit for identifying and quantifying risk based on allocation of local fire-fighting resources uses OA level data.

OA data are also used in community profiling, to identify households that vulnerable to fire and to help target preventative strategies.

Data requirements

Again, small area data are used at all scales down to OA. More up to date data is strongly desirable.

Ambulance services

This sector is still being researched; ONS welcomes input from data users in this service.

2.6 Genealogy and social research

This group consists of users with two distinct sets of interests:

- Genealogists and family historians: members of the public who research their own family history, and professionals who make their living researching the family history of others or running websites.
- Social history researchers: social scientists, social historians and sociologists; largely academic researchers in the fields of social science -geography, history and sociology.

How this sector uses census data

For many the primary use is:

- **Research into individual family histories** – tracing family members.

But the data is also used for:

- **Reconstructing historic communities** - for sociological purposes
- **Assembling detailed socio-economic information** - about the country's past
- **Tracing disability and disease** - through family history
- **Tracing patterns of migration** - within families or communities.

The census data currently used by genealogists are the household listings completed for the censuses that took place every 10 years from 1841 to 1911. The most useful census data currently available for use by family historians is:

- Full forenames and family names of individuals
- Address of named individuals
- Age, sex and marital status of named individuals
- Full birthplace of named individuals
- Occupation of named individuals
- Family relationships.

Genealogists and other historians use a wide range of sources in addition to the census including: records of births, marriages and deaths, parish registers and other church records and wills.

The current level of interest in genealogy makes it likely that the sources used as genealogical data, and the channels and tools which enable the data to be manipulated, will continue to grow, at least in the short term.

The census has provided a key source for historical and family history research - it provides not only a source of definitive records about individuals but also an 'index' against which other information can be compared and verified. Census schedules and statistics provide a framework for bringing together and linking individual, family, household and community information from other sources.

Whatever the outcome of the consultation, historical census data will be available up until 2111 (when the 2011 data will be released) by which time the information environment is certain to be unimaginably different. If a decision is made to move away from a ten yearly census this single list would not exist but increasingly well developed administrative sources will and, as long as they are archived in coming years, these may offer other opportunities.

Data requirements

Genealogists all share a requirement for individual record-level data. Social researchers will make use of individual level data but other sources will also be important. Tools used by this group increasingly rely on on-line search facilities.

2.7 Third sector: charities and voluntary

Some 160,000 charities are registered in England and Wales, and an estimated 80,000 further charities are not registered. The registered charities employ around 850,000 trustees, 780,000 paid staff and 2.7 million volunteers. As at September 2012, the 10 top-spending charities had a collective spend of more than £4.5 billion.

How this sector uses census data

Large organisations in this sector make the case for national-level data down to local authority level. Smaller charities operate on a more local level and often unknowingly access small area census data through other sources. Some 84% of charities are in this 'small' category, with incomes less than £100,000. While it was difficult to identify and engage with these organisations, we have gained an understanding of their data use through the umbrella bodies that support them.

The main uses of census data in this sector are to:

- Assess where need is greatest - in order to direct services
- Justify funding applications
- Understand the impact of charitable action over time
- Understand the locality they serve
- Assist in research.

Data requirements

The sector's need for data is increasing. There is increasing pressure on the voluntary sector, so the ability to target resources where they are needed most is essential. Small area census data is particularly important to the smaller, local charities, while detailed OA data and cross-tabulations are used by many for research purposes.

Case studies

Gingerbread supports single parents and uses national statistics on single parents to analyse government policy and compile bids.

The National Society for the Prevention of Cruelty to Children uses census data at levels down to LA, including economic characteristics of households, to analyse areas and groups where the most vulnerable children are present.

Cancer Research UK uses population estimates to produce age-standardised cancer rates, which are used daily. The ageing population means there is an increasing need for such data.

2.8 Third sector: policy research

Various organisations have been reviewed, including policy research organisations. Their wide-ranging work spans for example social policy, culture, political or military strategy, economics and technology.

How this sector uses census data

Out of the 62 think tanks that ONS has researched so far, 26 use census data either in their research or in press releases to:

- Study a given population - such as its rise or fall
- Prove a political or moral point
- Examine a given religion - such as its growth or decline
- Measure poverty and deprivation
- Explore economic issues - employment, pensions, economic inactivity
- Monitor living standards - often through housing statistics such as tenure, accommodation type
- Get a sense of place - characteristics of residents of given cities
- Explore the characteristics of modern families - composition, marital status, number of children
- Measure quality of life - health, number of carers, the ageing population and their characteristics
- Examine equality - ethnicity, gender, age, religion, etc
- Look at patterns of migration and integration

- Explore identity issues - such as national identity and language.

Nineteen of the policy research organisations researched so far use census data at national level, and four use it at lower levels of geography:

- The Centre for Social Justice researches economic activity at LSOA level
- The Centre for Economics of Education researches migration and age at output area level
- The Institute for Jewish Policy Research explores the characteristics of Jewish people living in Britain by cross-tabulating census questions by religion at 'neighbourhood level'
- Centre for Cities researches populations, households and non-UK residents at city level.

Data requirements

Census data is essential for the research and policy work of many of these organisations. Data for small and very small areas (down to OAs) are critical for some of their research. The ability to track and maintain change is important for others. Individual organisations have different priorities.

2.9 European Union

The European Union's statistical office, Eurostat, provides statistics at a European level. It sources mandatory aggregated data from the National Statistical Institutes of EU member states and distributes them publically.

Data requirements

Most of the data required by Eurostat is at the 'NUTS2' geographic level (32 counties or groups of counties/unitary authorities) but some is required at the smaller Local Authority Ward level. The specific requirements for 2021 may not be known until after the Beyond 2011 recommendation in 2014, but are unlikely to be less than the 2011 requirements. These are shown in Table 1.

Table 1: Eurostat requirements – every 10 years

Lowest level: LAU 2 (LA Ward/MSOA)	Lowest level: NUTS 2 (counties, groups of counties or unitary authorities*)
<p>Population</p> <ul style="list-style-type: none"> • place of usual residence • sex • age • legal marital status • country/place of birth • country of citizenship • previous place of usual residence and date of arrival in the current place; or place of usual residence one year prior to the census • relationships between household members 	<p>Population</p> <ul style="list-style-type: none"> • location of place of work • current activity status • occupation • industry (branch of economic activity) • status in employment • educational attainment • ever resided abroad and year of arrival in the country (from 1980) • tenure status of households.
<p>Housing</p> <ul style="list-style-type: none"> • type of living quarters • location of living quarters • occupancy status of conventional dwellings • number of occupants • useful floor space and/or number of rooms of housing units • dwellings by type of building • dwellings by period of construction. 	<p>Housing</p> <ul style="list-style-type: none"> • type of ownership • water supply system • toilet facilities • bathing facilities • type of heating. <p><i>* 32 in England and Wales eg Inner London, Outer London, Hampshire and the IoW</i></p>

2.10 Research and academic sector

Academic and other researchers have a range of interests that require census statistics at all levels of geography. While some projects look at the national level, others focus on specific parts of the country or specific sub-groups of the population. Academic research projects are commissioned by the Economic and Social Research Council (ESRC) and organisations such as the Joseph Rowntree Foundation as well as government departments and other agencies. Other bodies, such as Age UK, carry out some of their own research as well as funding academics.

How this sector uses census data

Data on the demography, economic circumstances and housing of people in England and Wales are used to analyse the characteristics of localities at a range of spatial scales, to develop area profiles and to understand socio-economic differences.

Many researchers are concerned with studying small area change over time and spatial inequality in social conditions, worklessness, poverty and general deprivation. Topics of special interest include ageing, social mobility, epidemiology, health, fuel poverty, flood risk and life satisfaction. In particular, the availability of information on ethnicity and religion facilitates analyses of the geography of ethnic composition, the socio-economic condition of minority ethnic populations as well as a better understanding of the nature and extent of discrimination. The 'localism' agenda means that more work is being carried out at small area level to study the labour market, second residences and health and to develop neighbourhood planning.

Census interaction data on migration and commuting are especially important because they provide vital information on population transfers or flows between areas which in turn facilitate understanding the processes and impact of population redistribution. Information on mode of travel to work and other related questions is used extensively to understanding commuting flows and traffic congestion as well as for the construction of self-contained labour market areas. Journey to work data are used to delineate functional urban regions, city regions and travel to work areas (TTWA). While 'standard' TTWA analysis looks at the patterns of all workers it is becoming more usual to investigate particular sub-sets of the employed population (eg women, women with young children, part-time workers, ethnic minorities, specific occupations) in order to get a deeper understanding of the drivers of commuting and to help establish policies to combat worklessness, poverty and deprivation.

Census data are used to update the Indices of Deprivation by providing information for specific indicators as well as appropriate population and household denominators. These indices are the backdrop for a range of academic research covering work on suicide, cancer and child psychopathology. At the same time census variables support the development of area classifications and the Census Output Area Classification provides the basis for creating user-defined geographies for the study of particular types of housing in relation to the socio-economic status, migration and other characteristics of residents. Census data are used to estimate 'at risk' populations, providing denominators for calculating the incidence or prevalence of diseases or other disorders, to provide sampling frameworks for surveys, and support for weighting and age standardisation.

At present much social research is concentrated on the impact of the recession, austerity measures, welfare changes and budget cutting. Despite the diversity of overall requirements, central and local government priorities together with developments affecting health services, the general interest in poverty, deprivation and equalities mean that requirements for sub-local authority level data are likely to increase.

Census interaction data on migration and commuting depends on the availability of multivariate data (including details on access to cars/vans, age, gender, ethnicity, tenure, household type and occupation) at OA level. Research has begun for Eurostat exploring the possibility of a 'European standard method' for defining labour market areas.

Data requirements

The nature of research and academic work means that this sector has a large range of differing and complex views. Small area data and continuity with the past will be critical for some users, while for others the ability to identify change more quickly will be critical.

2.11 Utilities

Water

How this sector uses census data

The building blocks of the water companies' annual demand forecasts are population, properties, per capita consumption of water, non-household demand, and leakage. The population, base year and forecasts are based on ONS census and updated population projections. While the population at company level is built up from the OA data, the forecast change of population is primarily driven by forecast property growth.

Water companies also use data at parish and ward level for various reasons. Primarily they are interested in properties and population to obtain occupancy rates, which assists in planning public water supplies and sewage treatment works. Data at these levels also helps them comply with regulatory obligations to the Drinking Water Inspectorate, Environment Agency and OFWAT.

Energy

How this sector uses census data

Energy companies use census data linked to data from Experian and Call Credit in marketing propensity models. These models aim to operate at household level and integrate census OA level data, using wider area summaries only when variables are not available at OA level. Key variables change from model to model. Examples are: unemployment, daytime population, household per sq km, age/gender, ethnic mix, property age and type, tenure, average number of rooms per household and average household size. Mosaic, incorporating census variables, is widely used for segmentation and modelling.

Data requirements

Geographic detail is key to the modelling done by energy companies, which primarily use OA level data. Energy companies seem to prefer a somewhat reduced set of data more frequently but still at OA level, rather than data available only at a higher geography.

2.12 Housing sector

Housing sector users span central and local government, housing associations, academia, developers and builders, planning consultants and private landlords. The sector is a main user of statistics that link statistics about the characteristics of household residents in an area (age/gender/relationships) with those of the household spaces and dwellings in which they reside (type/tenure/rooms/bedrooms/central heating).

How this sector uses census data

The availability of consistent and comparable statistics on population, households and dwellings is essential for a range of purposes including investment decisions, the preparation of Strategic Housing Market Assessment and Local Plans. For example, information on the number of households, their size and composition together with details of those living in communal establishments provide the basis for deciding how much land needs to be allocated for housing and what planning applications should be approved.

Housing planning is often linked with employment analysis for incorporating the travel-to-work aspects of new development. This is particularly true of neighbourhood planning where local infrastructure becomes an important consideration. Facilities need to be provided in a non-discriminatory way, therefore local data about ethnicity, religion and disability needs to be available.

Users also need to know about the housing stock, including details such as the number of dwellings by type, size, quality, energy efficiency and accessibility. In addition users need to know the relationship between households and dwellings.

Census data provide the basis for the derivation of specific 'value added' products such as the Indices of Deprivation and the Output Area Classification, which are widely used to understand the nature of specific localities, support wider research, and for analysis.

Data requirements

Some users need only high level national statistics to understand national trends in household size and type, dwelling occupancy, sharing or vacancy rates.

However the majority need low level data which can be aggregated to meet their specific requirements (eg to support the development process as investors, builders, planners, resource bidders, objectors etc). Their need is for low geographical level statistics that can be aggregated to produce the statistics relevant to the development scheme or plan in question. The size of the area of interest varies from very small (a ward, LSOA or rural parish) to large (a part of Birmingham) but will almost always be smaller than LA level.

Users in this sector tell us that trusted base statistics are fundamental to the planning system, impacting the housing market in some locations, including property values,

vacancy rates and the risk of negative equity. Some users also state that there is a wider impact on the economy at sub-regional level, including investment and economic growth.

2.13 ONS's use of census statistics

The Office for National Statistics uses census data for many of its other outputs:

- **Population estimates and projections** - Census population estimates at LA level are used to produce the mid-year estimates and population projections.
- **Social surveys** – ONS surveys include: the Crime Survey, the Integrated Household Survey, the Annual Population Survey and the Labour Force Survey. These use local authority level population estimates and projections to adjust surveys for non-response. They also use the census estimates of communal establishment populations because only residents of private households are included in the surveys. The results from the surveys are widely used in ONS analyses of changes in society.
- **Other outputs** - Many of the outputs produced across ONS indirectly draw on population estimates and projections through their use of social survey data. However, some outputs also use population estimates directly, at a range of geographies from OA to national level. For example: population estimates from OA level to national level are used to calculate rates for many other outputs such as mortality, divorce and unemployment rates.

A large proportion of the outputs produced by ONS make direct use of socio-demographic outputs from the census at a range of geographies in more complex ways, for example to produce Small Area Income Estimates and Households in Poverty estimates (both use MSOA level data). Measures of well-being draw on LA level socio-demographic census outputs.

2.14 The Longitudinal Study

The ONS Longitudinal Study (LS) contains linked census and life events data (such as births, deaths and cancer registrations) on a 1% sample of the population of England and Wales, drawn from censuses since 1971.

How LS data is used

The LS is a valuable resource for academic research and public policy formulation. The data enables more accurate and sophisticated analyses of occupational mortality and birth spacing patterns. Its value increases as additional censuses are added, enabling life course and inter-generation analyses.

LS data have contributed to research in health and mortality, life expectancy and pensions, adult social care, marriage and cohabitation and social mobility between generations. The LS is also the source for National Statistics on life expectancy by social class, which is important to the DWP for forecasting state pensions and making policy changes.

Research topics that use the LS include; births, cancer, carers, children, environment, ethnicity, fertility, health, housing, infant mortality, migration, mortality, older people, and unemployment.

3 Next steps

This information is work in progress and will evolve as consultation progresses. The Beyond 2011 team welcomes comments and contributions from users across all sectors.

Email us at Beyond2011@ons.gov.uk

This paper is part of a package of consultation papers. For more information, go to the [Beyond 2011 pages of the ONS website](#) -

Appendix A: Glossary

Abbreviation	Meaning
<p>Output area (OA)</p>	<p>Total population between 100 and 625 people, average 300 OAs are used across the UK as the base unit of census output. They were introduced in Scotland in 1991 and the rest of the UK in 2001. There are 181,408 output areas in England and Wales (171,372 in England, 10,036 in Wales).</p>
<p>Lower Layer Super Output area (LSOA)</p>	<p>Total population between 1,000 and 3,000 people, average 1,600 people Lower layer super output areas (LSOAs) are built from groups of output areas, typically four to six, and contain around 625 households or 1,600 people on average, with a minimum population of 1,000. There are 34,753 LSOAs in England and Wales (32,844 in England, 1,909 in Wales).</p>
<p>Middle Layer Super Output area (MSOA)</p>	<p>Total population between 5,000 and 15,000 people, average 7,800 people Middle layer super output areas (MSOAs) are built from groups of LSOAs and have an average population of 7,200, and a minimum population of 5,000. They fit into local authority boundaries. There are 7,201 MSOAs in England and Wales (6,791 in England, 410 in Wales).</p>
<p>Local authority (LA)</p>	<p>'Local authority' can refer to any local government area in the UK. For census purposes it refers only to the lower tier of local government. This includes non-metropolitan districts, metropolitan districts, unitary authorities and London boroughs in England; unitary authorities in Wales; council areas in Scotland; and district council areas in Northern Ireland.</p>

Appendix B:

Stakeholder engagement: who we have consulted so far

Consultation

The first Beyond 2011 public consultation, October 2011 to January 2012, focused on the current and future requirements for population and socio-demographic statistics on different topics; and the balance between accuracy, geography and frequency of statistical output.

A total of 266 organisations and individuals from all sectors responded to the consultation and 207 people attended associated workshops. The highest response to the written consultation was from local authorities (44 per cent) and genealogists (17 per cent). This built on the information obtained from the consultations conducted ahead of the 2011 Census.

Presentations and events

The Beyond 2011 programme has provided presentations and updates to dozens of external events and welcome opportunities to contribute to any relevant event or group. Events attended recently include:

- British Society for Population Studies (BSPS) conference, September 2012, 2013
- Government Statistical Service (GSS) Methodology Symposium, June 2012, 2013
- Advisory Panel on Public Sector Information (APPSI), June 2013
- RSS conference, September 2011, 2012, 2013
- The Social Research Association, June 2013.

In addition, the Beyond 2011 team has run a total of eight public events around England and Wales. A further six are planned to support the consultation for autumn 2013.

Contacts

We maintain a contact list of more than 1,000 people and organisations who have asked to be kept in touch with the work of the Beyond 2011 programme. We use this growing list to promote events and provide regular updates.

Advisory groups

We have established several advisory groups covering genealogy, equality, and privacy for specialist users and interest groups, whose views we can canvas quickly and efficiently.

Economic and Social Research Council

We have been holding seminars with ESRC experts – six since December 2011. Led by Professor David Martin, these bring together methodological researchers in the academic community and government statistical agencies to provide expert input and advice.

Central government

We keep in touch with central government departments through regular meetings of the Beyond 2011 Interdepartmental Strategy Group (IDSG). This advises on cross-government requirements and issues, and has members are from the following departments:

- Department for Communities and Local Government
- Ministry of Justice
- Department for Business, Innovations and Skills
- Department for Environment, Food and Rural Affairs
- Department for Education
- Department for Work and Pensions
- Department for Transport
- Information Centre for Health and Social Care
- HM Revenue and Customs
- Department of Health
- HM Treasury
- Bank of England
- Home Office and Welsh Government.

Local authorities

A large group of our users are local authorities (LAs - 348 in England and Wales or 375 including counties). In July 2012 we consulted LA experts to discuss how best to engage this complex and varied group of users. Following their advice, we developed a set of user requirement statements covering five core functions:

- Children's Services/Education
- Health & Social Care
- Housing
- Planning
- Transport.

We held a workshop for LAs in November 2012 to develop these draft statements. In January 2013 we asked attendees to circulate the texts widely, and the revised drafts were published on the ONS website in July 2013 for final comment. Further consultations were held at the Greater London Authority in January and April 2013. We plan to form an advisory group for LAs in the autumn.

In addition we have engaged with the Central and Local Information Partnership (CLIP) Population Sub-group.

Other engagement

We have also engaged through meetings, presentations or correspondence with the following bodies:

- Information Commissioner's Office
- Demographic User Group
- Market Research Society
- Census and Geodemographics Group
- Eurostat
- Academics/Research/ Research Councils
- Royal Statistical Society
- Charities and voluntary sector

There has been regular engagement with representatives from the Welsh Government, National Records Scotland, and the Northern Ireland Statistics and Research Agency. The Beyond 2011 Programme also considered the views and recommendations set out in the report of the House and Commons' Science and Technology Committee inquiry on 'The Census and Social Science'. This considered the issues and impacts associated with proposed changes to the census.