

Northern Ireland Census 2011 General Report

March 2015



The Northern Ireland Statistics and Research Agency

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- To provide a high quality, cost effective, statistics, research and registration service that informs policy making, the democratic process and the wider public.

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- The administration of marriage laws and the provision of a system for the civil registration of births, marriages and civil partnerships, adoptions and deaths in Northern Ireland.

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Foreword by the Registrar General



Dr Norman Caven, Registrar General

The planning, execution and evaluation of the decennial Census of Population and Housing is a vast and complex undertaking. It is the single largest statistical exercise conducted by government and it includes every individual and household in the country.

The Census is a once in a decade opportunity to provide an accurate, comprehensive and consistent picture of Northern Ireland's population through the rich array of facts collected. The results are invaluable for both central and local policy formation, planning and the effective targeting of resources. It provides the only source of directly comparable statistics for both small areas and minority population groups which are consistent across Northern Ireland and the rest of the United Kingdom. It is used as a reference base for many statistical series, such as population estimates and projections and sample surveys.

This General Report reviews the entire 2011 Census operation from the consultation and planning stages through to the production and dissemination of outputs and evaluation. It provides a wealth of detail about how the Census was carried out and what we have learnt to take forward in our plans for any future censuses. I hope that both the experienced and occasional user of census data, as well as the wider public, may find it useful.

Every census has its unique features – new developments and innovations to meet changing user needs, to reflect evolving socio-demographic and economic circumstances, and to embrace new methodologies and technologies. In 2001, for example, the adoption of statistical techniques to measure under-coverage and

adjust the census counts accordingly meant that, for the first time, data about those persons and households known or thought to be missed in the census could be estimated accurately and included in the statistical outputs. The 2011 Census contained innovations no less significant, and here I would like to pick out just a few of them – though the report itself describes these and several others in much more detail.

‘Post Out’ was introduced as the primary means of delivery of the census questionnaires to households. This was a fundamental change in the field operation, breaking the tradition of an enumerator calling at every door to ensure hand-delivery of the questionnaire. Together with the continuation of ‘Post Back’ as the main collection methodology, this allowed a significant reduction in the field force; thus freeing up resources to focus on following-up non-response. A pre-requisite for this was having an up-to-date list of addresses, and Census Office staff, with support from colleagues in the Land and Property Services Agency, put a great deal of effort into creating the Census Address Register. Such a list, together with a unique barcode on each questionnaire sent out, provided the means whereby the status of individual census questionnaires could be tracked and monitored centrally, allowing the subsequent follow-up of non-response to be more focused.

Also for the first time, the option of making an online response through a secure online facility was made available, following practice that is becoming increasingly adopted internationally. This significantly reduced the number of paper questionnaires that had to be returned by post and optically scanned. Additionally, it speeded up the whole processing operation by embedding automatic quality checks into responses before these could be submitted to the Census Office.

An innovative Northern Ireland wide publicity campaign, backed by an engaging brand, an intensive local and community liaison programme, and an online help website, enabled the importance, value and key messages of the Census to be disseminated to a wide audience.

As Registrar General for Northern Ireland at the time when the 2011 Census took place, I was very conscious not only of the benefits that the Census could bring but of the high cost of any failure in an environment of public concern, about such issues as privacy, the confidentiality and security of personal information, and the cost to the tax payer of the operation. Such detailed planning was vital to the success of the Census, since there was no opportunity to do it again.

This General Report, therefore, not only documents how the operation was planned and carried out successfully, but also notes where there were problems and how these were resolved. Additionally, it sets out the valuable lessons learned from the experience that will feed into plans for the next Census.

Respecting the confidentiality of Census respondents was a fundamental priority throughout the Census operation and, to this end, the three Census Offices in the UK jointly commissioned an Independent Information Assurance Review, which concluded that:

“the public can be assured that the information they have provided to the 2011 Census has been well protected.”

It is pleasing that the coverage of the Census in Northern Ireland stands comparable with that of the other developed countries in the 2011 round of censuses and overall it was a marked success. For this I have to thank the general public for completing over 700,000 returns; the 1,900 temporary field staff employed throughout Northern Ireland to take the Census; and the dedicated staff at the Northern Ireland Statistics and Research Agency, who put much time and effort into the planning and execution of the operation, in liaison with their colleagues at the Office for National Statistics and the National Records of Scotland.

Dr TN Caven

March 2015

1 Introduction and Background

Historical Background

- 1.1 The Census of Population and Housing is the most important single source of information about the size and condition of the country's most valuable resource – its population. As broadly the same questions are asked, and the information is recorded in the same way throughout the UK, the Census allows the comparison of different groups of people and small areas. It also provides the opportunity to inter-relate various characteristics of the population. As there is a high degree of consistency between one census and another, this allows for change over time to be measured.
- 1.2 The Census is the largest and most complex statistical exercise undertaken in Northern Ireland. Since 1951, censuses in Northern Ireland have been held at the same time as the rest of the UK at ten yearly intervals, with the exception of the additional 1966 mid-term Census.

Reasons for the Census

- 1.3 The Census is widely acknowledged as playing a fundamental and unique role in the provision of comprehensive and robust population statistics. Census information is needed to inform policy, to plan services for specific groups of people and, especially, to make effective use of resources by directing them to where they are needed. The information must be authoritative, accurate and comparable for all parts of Northern Ireland. Currently, only a census can provide the range of such information on a uniform basis, both about the country as a whole and about individual small areas and sub-groups of the population in relation to one another.

Shaping government policy

- 1.4 The Census counts the numbers of people living in each city, town and country area, distinguishing those that live in households and those that live in communal establishments (CEs). It provides information about each area and its population, including the balance of young and old, the healthy and sick, what jobs people do, the transport they use and the type of housing they live in.
- 1.5 Basic information on the population size, age, sex and location are fundamental to many government policies, including:

- ageing and pensions;
- migration both into and out of the country, and internally;
- long-term sustainability of Gross Domestic Product (GDP) growth and therefore long-term sustainability of government revenues; and
- labour supply and, therefore, inflationary pressures.

1.6 Information on housing, household size and family make-up is important for:

- redressing inadequate accommodation and over-crowding; and
- meeting local housing demand and planning.

1.7 The range of other information collected in the census:

- provides a better understanding of pressures on transport systems and the planning of roads and public transport, using information collected on travel to and from work, and on car ownership;
- enables the identification of areas of deprivation for targeting initiatives such as Neighbourhood Renewal;
- provides information on ethnicity, qualifications and labour market status, for example, to identify the causes of deprivation and appropriate policy interventions; and
- shows how many people work in different occupations and industries throughout Northern Ireland, helping government and businesses to plan jobs and training policies and to make informed investment decisions.

Benchmarking

1.8 The Census provides the basis for deriving many social and economic indicators, such as:

- population estimates;
- employment and unemployment rates;
- birth, death, mortality and fertility rates;
- equality monitoring – in particular, census information on age, sex, ethnicity, religion, and disability helps to identify the extent and nature of

disadvantage and to measure the success of equal opportunities policies; and

- grossing-up sample survey data – in particular, the Census underpins socio-economic surveys carried out by government and the private sector as the survey results are grossed to census population estimates; without the Census, such surveys would be less reliable or would need to be larger and more costly.

Allocation of resources

1.9 All government departments and many other organisations, both in the public and private sectors, allocate resources on the basis of population statistics based on census estimates. For example, the Department of Health, Social Services and Public Safety (DHSSPS) allocates monies annually to Health Service Trusts to ensure that access to services is based on relative need. Without the Census, substantial funds could be misallocated every year.

Local investment and monitoring

1.10 The Census drives the targeting of local services such as:

- local health, for which census questions on long-term illness and general health are good predictors of demand on the Health Service;
- local education needs, with the Census informing where to site new schools;
- local transport planning and traffic modelling;
- development plans to ensure that development happens at the right locations; and
- community support services, including home help and home care.

Use by businesses

1.11 The business community uses census data in a variety of ways:

- in the creation of geo-demographic packages;
- for market research to help understand small area characteristics;

- in location analysis for determining sites for future stores and which products to stock in stores in different areas of Northern Ireland;
- for direct marketing strategies; and
- in financial product design.

Academic research

- 1.12 The Census is an excellent source of data for social science research purposes. One important example is the Northern Ireland Longitudinal Study (NILS)¹, which is based on a large sample of census records linked together over time, combined with other sources such as vital events data (births and deaths) and health service registrations. This provides an unrivalled source for the examination of change over time. The NILS has now been enhanced through linkage to the 2011 Census, which was added in 2013/2014. Such studies increase our understanding of social conditions and can shed light on the impact of past policies. For example, the use of this dataset has allowed the mortality rates of different socio-economic groups to be compared.
- 1.13 In conducting all research, personal details are separated from census responses, so that no identifiable information can be linked to the names and addresses of individuals. In addition, all published reports are statistical in nature and care is taken to ensure that information about individuals cannot be inferred.

Legal Requirements

Statutory Authority

- 1.14 The statutory authority for taking a Census of Population and Housing in Northern Ireland is the Census Act (Northern Ireland) 1969². The Act gives the Registrar General for Northern Ireland, an official of the Northern Ireland Statistics and Research Agency (NISRA), powers for taking a Census in any year that is at least five years from the year of the previous Census. However, in recent decades, a pattern of ten-yearly Censuses has emerged.

¹ More information on the Northern Ireland Longitudinal Study (NILS) is available from: <http://www.nisra.gov.uk/nils/index.htm>

² The 'Census Act (Northern Ireland) 1969' is available from: <http://www.legislation.gov.uk/apni/1969/8>

- 1.15 There is separate legislation for three Censuses within the UK, in England and Wales, Scotland and Northern Ireland. These Censuses are conducted by, respectively, the Office for National Statistics (ONS)³, National Records of Scotland (NRS)⁴ – formerly the General Register Office for Scotland (GROS) – and NISRA. UK harmonisation has been achieved through close liaison and co-operation between the three Census Offices. The National Statistician and the Registrars General have a formal agreement⁵ to work together to achieve consistent and comparable Census outputs to meet both domestic users' requirements and to fulfil the UK's international obligations.
- 1.16 The 2011 Census was compatible with the Human Rights Act, Data Protection Act⁶, Disability Discrimination Act and UK Equality legislation, and was carried out in a form, and within the timeframe, required by European Union (EU) regulations.

EU requirements

- 1.17 The need for census information is shared by the EU. The European Commission needs to be in possession of sufficiently reliable and comparable data on population and housing in order to fulfil the tasks assigned to it, notably by Articles 2 and 3 of the Treaty establishing the European Community⁷. To this end, a Council and European Parliament Regulation (Regulation (EC) No. 763/2008⁸) requiring Member States to provide the Statistical Office of the European Communities (Eurostat) with census derived statistical information, or equivalent data, relating to the reference year, 2011, came into force in July 2008. Aggregated statistics, agreed by the National Statistical Institutes of Member States, and prescribed by a subsequent Commission Regulation, have been supplied to Eurostat for use by the European Commission in support of the European Parliament.

³ Office for National Statistics (ONS): <http://www.ons.gov.uk/ons/index.html>

⁴ National Records of Scotland (NRS): <http://www.nrscotland.gov.uk/>

⁵ More information on the 'The Conduct of the 2011 Censuses in the UK: Statement of Agreement of the National Statistician and the Registrars General for Scotland and Northern Ireland' is available from: <http://www.nisra.gov.uk/census/2011/background/uk-harmonisation.html>

⁶ 'Data Protection Act 1998' is available from:

<http://www.legislation.gov.uk/ukpga/1998/29/contents>

⁷ 'Treaty Establishing the European Community, Rome, 25 March 1957' is available from: <http://www.hri.org/docs/Rome57/Part1.html>

⁸ 'Regulation (EC) No. 763/2008 of the European Parliament and of the Council of 9 July 2008 on population and housing censuses' is available from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:218:0014:0020:EN:PDF>

1.18 The concepts and definitions adopted by the EU adhere to the Conference of European Statisticians' Recommendations for the 2010 round of Censuses of Population and Housing⁹, prepared by a joint Eurostat and United Nations Economic Commission for Europe (UNECE) Working Group, to which the UK made a significant contribution. Arrangements have been put in place to ensure that statistical disclosure controls will protect the confidentiality of any statistical data to be made accessible to Eurostat under this obligation.

Recommendations from the 2001 Census and Strategic Aims

1.19 The design of the 2011 Census was based on a number of important strategic aims:

- to provide high quality, value-for-money, fit-for purpose statistics that meet user needs, and which are as consistent, comparable and accessible across the UK as is possible;
- to maximise overall response rates and minimise differences in response rates in specific areas and among particular population sub-groups;
- to protect, and be seen to protect, confidential personal census information; and
- to secure public and user confidence in the final results and deliver them in a timely manner.

1.20 In Northern Ireland, the 2011 Census design took account of the lessons learnt from the review and evaluation of the important processes that underpinned the 2001 Census and of the development work happening in the rest of the UK and further afield. In summary, the important issues raised following reviews of the 2001 Census covered the need to:

- agree earlier contractual arrangements with external suppliers for aspects of the census operation that are to be outsourced, and ensure that all such suppliers are selected through rigorous procurement procedures and early enough so that systems are able to be fully tested before the Census;

⁹ More information on the 'Conference of European Statisticians' Recommendations for the 2010 Censuses of Population and Housing' is available from:
http://www.unece.org/fileadmin/DAM/stats/publications/CES_2010_Census_Recommendations_English.pdf

- develop a high quality and up-to-date Census Address Register to increase the efficiency of the delivery of census questionnaires;
- develop robust field management and questionnaire-tracking systems to enable better central control of field processes and activities;
- undertake detailed engagement with stakeholders, and review consultation procedures to ensure that the needs of all parts of the community are taken into account; and
- review the mechanisms to protect statistical confidentiality without eroding the utility of the data.

Key Elements and Innovations of the 2011 Census Design

1.21 To achieve the Key Strategic aims and to respond to changes in society in the decade since 2001, several specific objectives were set that resulted in the design of the 2011 Census being significantly different in many respects from any of its predecessors. Such societal changes included: an increasingly ageing population; a more mobile population with more complex living arrangements; increasing numbers of migrants, particularly from east European countries; and greater numbers of single-person households.

1.22 In summary, the key elements were that:

- the Census would aim to cover everyone usually resident in Northern Ireland on Census night, with a subset of information also collected from visitors present in households on Census night;
- questionnaire packs would primarily be delivered by post, utilising a purpose built address register;
- the public would be able to return completed questionnaires either by post or online;
- help would be available to anyone having difficulty in completing the Census Questionnaire;
- there would be a slight increase in the number of questions compared with the 2001 Census, although the questionnaire would be re-designed to make it easier to complete;

- there would be some differences in the questions for the 2011 Census in Northern Ireland compared to those in the 2001 Census (and some further differences compared to the questions in the Censuses in the rest of the UK) – namely new questions on:
 - adaptations to accommodation for health conditions;
 - national identity;
 - main language;
 - ability in English;
 - a question on nature of long-term health conditions;
 - voluntary work in the past year;
 - an extension to the 2001 question on language;
 - questions on the most recent date of entry into Northern Ireland and country of previous residence for those who have lived outside Northern Ireland for a continuous period of one year or more;
 - intended length of stay for migrants to the UK in the year before the Census;
 - extension of the travel to work question to cover place of study; and
 - the inclusion of a civil partnership category in the marital status question.
- each question included would meet a demonstrated need, would be publicly acceptable, and would be suitable for a self-completed questionnaire;
- stringent confidentiality and security procedures would protect the information gathered in the Census and would conform to the requirements of the Census (Confidentiality) (Northern Ireland) Order 1991¹⁰ and Data Protection and Freedom of Information¹¹ legislation;

¹⁰ 'The Census (Confidentiality) (Northern Ireland) Order 1991' is available from: <http://www.legislation.gov.uk/nisi/1991/760/contents/made>

- to help achieve the public co-operation that a census relies on, there would be publicity to convey to the public the purpose and value of the Census, and to give assurances about the confidentiality with which personal information is treated;
- initiatives would be put into place to maximise and measure effectively the quality of the information collected; in particular, census coverage and quality surveys would be carried out to measure the number of people not counted by the Census and the quality of the responses given;
- the statistical outputs from the Census would be designed to meet user requirements, and
- dissemination would be to a pre-arranged timetable.

1.23 This Report describes how the aims and objectives of the 2011 Census were put into operation and documents the important messages and lessons learned from the operational activities carried out.

¹¹ 'Freedom of Information Act 2000' is available from:
<http://www.legislation.gov.uk/ukpga/2000/36/contents>

2 Planning and Preparation

Date of the Census

2.1 The choice of the date for the Census is central to much of the planning and directly affects the quality of the data collected. The date of the Census is set in secondary legislation and needs to be determined well in advance so that all aspects of the Census can be planned accordingly. Although the Census does not have to take place on a specific day of the week, a Sunday has traditionally been chosen as the most likely time that people will be at home. The date must be chosen to maximise the number of households present and to ensure minimum interruptions to the delivery and collection of the questionnaires. In selecting the date, a number of factors had to be taken into consideration including:

- avoiding holiday periods to:
 - maximise the number of people present at their usual residence;
 - maximise the number of students present at their term-time address; and
 - maximise recruitment/retention of field staff.
- avoiding elections (when the publicity messages may become confused);
- allowing sufficient hours of daylight for field work; and
- harmonisation across the UK.

2.2 The UK Census Offices jointly selected three potential dates for the 2011 Census – Sunday 20 March, Sunday 27 March and Sunday 15 May. The UK-wide decision was then made to eliminate Sunday 15 May as this date would cause significant problems with the timing of local elections throughout the UK in early May and the planned Assembly elections. In February 2008, the UK Census Offices agreed to hold the 2011 Census on Sunday 27 March 2011, the date that British Summer time began. This date would provide longer daylight hours in those areas where questionnaires were to be hand delivered and would benefit follow-up activities across all of the UK.

Consultations (and Stakeholder Engagement)

- 2.3 The Census is the largest public population and household survey in Northern Ireland. Each Census requires secondary legislation – a Census Order¹² and Regulations¹³ – to be approved by the legislature to allow the enumeration to take place. The Census also generates considerable public, political and media interest. The investment of time and resources in a national census can only be justified if the results are accessible to users and meet their needs. This involves wide consultation in accordance with the principles and practices set out in the Code of Practice for Official Statistics¹⁴.
- 2.4 The design and content of the 2011 Census were shaped by three principal determinants:
- the demands and requirements of users of census statistics;
 - the evaluation of the 2001 Census; and
 - the advice and guidance of international census agencies and organisations with experience of similar operations.
- 2.5 These were informed by extensive consultation, through international liaison, formal advisory committees, topic-related working groups and ad hoc public meetings. December 2004 saw the launch of an initial Census Consultation exercise on the 2011 Census, 'The Future Provision of Demographic Statistics in Northern Ireland (Towards the 2011 Census)',¹⁵. Users' views were sought on a number of issues which, from a strategic perspective, were fundamental to the development of the 2011 Census. These included:
- the general provision of population statistics, including where improvements should be pursued and how these might be achieved;

¹² 'The Census Order (Northern Ireland) 2010' is available from:

<http://www.legislation.gov.uk/nisr/2010/195/contents/made>

¹³ 'The Census Regulations (Northern Ireland) 2010' is available from:

<http://www.legislation.gov.uk/nisr/2010/218/made>

¹⁴ More information on the 'Code of Practice for Official Statistics' is available from:

<http://www.statisticsauthority.gov.uk/assessment/code-of-practice/>

¹⁵ 'The Future Provision of Demographic Statistics in Northern Ireland (Towards the 2011 Census)' is available from: <http://www.nisra.gov.uk/archive/census/2011/information-paper-december-2004.pdf>

- the high level operational implications associated with enhancing the population base for the 2011 Census; and
- the 2011 Census question content.

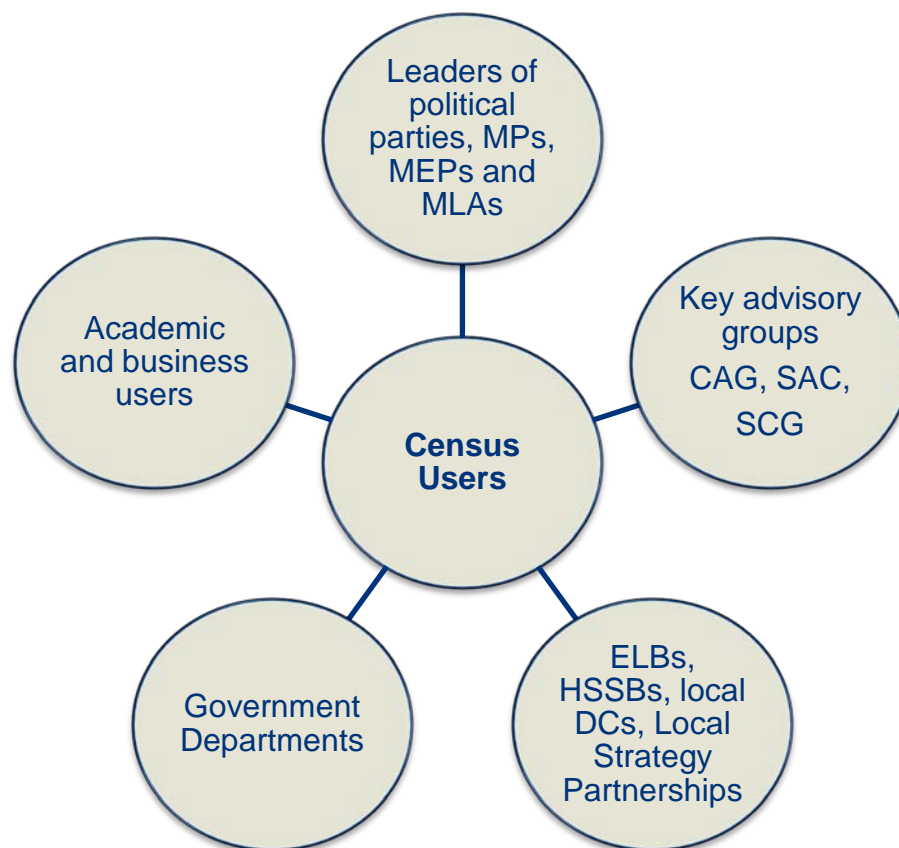
Throughout the development stages of the 2011 Census, information was disseminated through the NISRA website.

2.6 Details of the initial consultation were issued to over 1,100 key census users, see Figure 2.1. Those consulted included:

- leaders of the main political parties in Northern Ireland, MPs, MEPs and MLAs;
- key advisory groups, such as the Northern Ireland Census Advisory Group (CAG)¹⁶, the Northern Ireland Statistics Advisory Committee (SAC) and the inter-departmental Statistics Co-ordinating Group (SCG);
- the Education and Library Boards (ELBs), the Health and Social Services Boards (HSSBs), Local District Councils (DCs) and Local Strategy Partnerships;
- key officials within government departments in the Northern Ireland Civil Service (NICS);
- academic and business users; and
- other census users.

¹⁶ More information on the Northern Ireland Census Advisory Group is available from: <http://www.nisra.gov.uk/census/2011/background/census-advisory-group.html>

Figure 2.1 Key Census Users



2.7 The initial consultation process ran from December 2004 until March 2005. There were 50 responses to the consultation paper from a variety of users, including central government, local government, health groups (including Disability Action and the Sign Language Centre), the Equality Commission, the Electoral Office for Northern Ireland, the Northern Ireland Tourist Board and Save the Children. The responses were collated and included in a detailed consultation summary report¹⁷ that was made publicly available via the NISRA website. Among the main points to emerge from the consultation included requests for:

- a more general question on language covering Ulster-Scots and Sign Language;

¹⁷ 'The Future Provision of Demographic Statistics in Northern Ireland (Towards the 2011 Census) Consultation – Summary of Responses' is available from: <http://www.nisra.gov.uk/archive/census/2011/consultation-summary-report-september-2005.pdf>

- better information on ethnicity, providing more details on those who are white/mixed and also on the country of birth and nationality to assist with the identification of migrants;
- enhanced information on health, detailing both the nature of the illness and the impact of the illness on daily living;
- better information on religion, in particular, the need to split the 'none' and 'not stated' categories; and
- information on sexual orientation.

In addition to the above, it was clear from the responses that users not only had a continuing requirement for the types of information collected in the 2001 Census, but that demand for census topics and questions to be included in the 2011 Census questionnaire would give rise to significantly more questions than could be accommodated on the questionnaire. This was also the position in other parts of the UK.

2.8 The responses to the Northern Ireland consultation exercise were considered alongside those that emerged from similar consultation exercises conducted by ONS and NRS – and formed the basis of the proposed content of the 2007 Test questionnaire. The proposals were presented publicly at three Census Information Days held in March 2006 in Belfast, Enniskillen and Limavady. In June 2007, a further User Information Day was held at the Lisburn Civic Centre, focusing on developments in the choice of topics that were proposed for inclusion in the 2011 Census questionnaire.

2.9 In addition, there has been ongoing consultation on the Census through three separate bodies:

- the Northern Ireland Census Advisory Group (CAG) – which includes expertise from a range of backgrounds – academia, the business and voluntary sectors, the Equality Commission and local government;
- the Northern Ireland Statistics Advisory Committee (SAC) – a statutory body which advises NISRA; and
- the Northern Ireland Statistics Coordinating Group (SCG) – an inter-departmental group with representation from all central government departments.

Question Testing

- 2.10 Following the initial user consultation, as part of a UK wide programme led by ONS, NISRA participated in a programme of question development and testing, to ensure that the 2011 Census would meet as many user requirements as possible. Questions were developed for topics where there was a new demand for information. Additionally, existing questions were redeveloped to account for increasing or changing user requirements.
- 2.11 A range of qualitative and quantitative testing was undertaken to develop questions to help meet the identified user requirements. Eight topic specific UK working groups were established to manage the development of questions. These groups included user representation from topic experts and reported to the UK Census Questionnaire Design Working Group (UKCQDWG), which had responsibility for overall questionnaire development, to ensure that the needs for different topics were balanced appropriately.

Work to Harmonise with the rest of the UK

- 2.12 In 2005, the National Statistician and the Registrars General of each of the UK countries signed an agreement to work towards a harmonised set of questions, questionnaires and outputs where possible. The agreement was reviewed and updated periodically. Officials from the Census Offices met regularly to discuss progress through monthly meetings of the UKCQDWG. The results of consultation, research and question testing were shared across the UK. A statement of compliance with the agreement between the National Statistician and the Registrars General has been published.

UK Topic Groups

- 2.13 The eight UK-wide topic groups, see Figure 2.2, normally met on a monthly basis. These topic groups were responsible for establishing and prioritising user requirements for information, researching alternative sources of data, and commissioning small-scale question testing. Each topic group included people with a range of skills and expertise, relevant to the specific topic.

Figure 2.2 UK Topic Groups



2.14 The work of these topic groups culminated in the production of question recommendations which were then considered by UKCQDWG.

The 2007 Census Test

2.15 The proposals for the 2011 Census have also taken account of the results of a programme of research and testing aimed at better understanding the public's comprehension and perception of census-related concepts, census question wording, questionnaire design and delivery methods.

2.16 Early planning, testing and evaluation were essential processes for the success of the 2011 Census. The purpose of conducting voluntary tests prior to a census is to assess the wide range of different aspects to the census operation, from public acceptability of the questions and the operational procedures, to the various stages of data processing. Census users' changing needs and developments in technology led to innovations in the census operation that needed to be thoroughly tested before they could be

adopted, allowing time to make changes and then to re-test where necessary. In particular, the 2011 Census aimed to adopt:

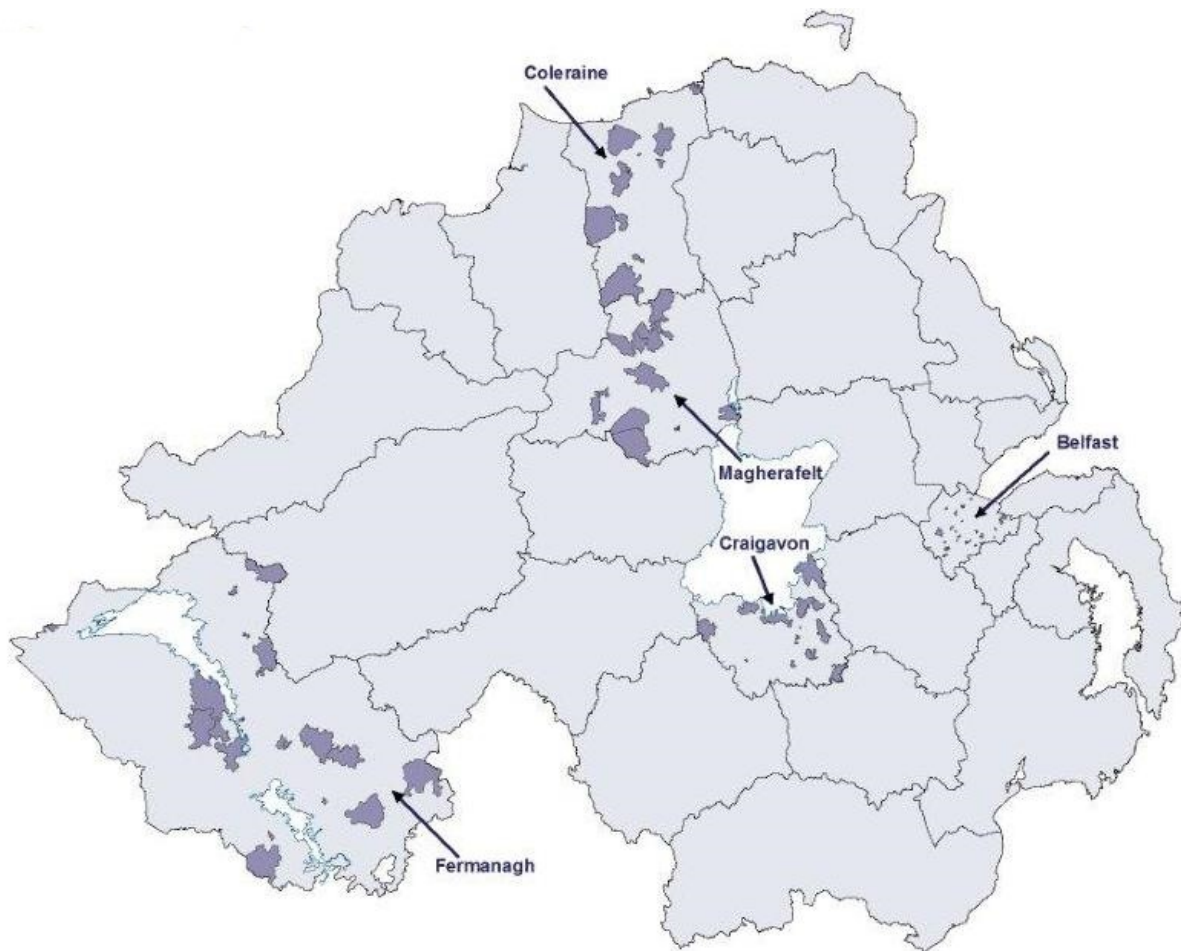
- a new questionnaire design;
- new delivery and collection methods;
- new outsourced technologies; and
- to some extent in Northern Ireland, a more flexible deployment of follow-up resources.

2.17 A major Census Test¹⁸ was held in Northern Ireland on 13 May 2007 in 96 Small Areas, each comprising around 150 households in specific parts of the following Local Government Districts (LGD) – Belfast, Coleraine, Craigavon, Magherafelt and Fermanagh. The areas in question covered parts of the eight Parliamentary Constituencies of East Londonderry, Fermanagh and South Tyrone, Mid Ulster, Upper Bann and the four Belfast constituencies. Northern Ireland party leaders and those Members of Parliament whose constituencies were included in the 2007 Test areas were informed in advance regarding the start of the fieldwork. These areas were chosen because they exhibited specific socio-economic characteristics known to present difficulties for the enumeration process. These included evidence of poor addressing and an increased incidence of student and migrant worker accommodation and holiday homes. The 2007 Test was supplemented by an Evaluation Survey in which a sub-sample of approximately 1,000 households were visited by interviewers. Respondents were asked for their views on issues such as the clarity of the questions and the acceptability of asking questions that some people might consider sensitive.

¹⁸ More information on the 2007 Test is available from:
<http://www.nisra.gov.uk/census/2011/background/2007-test.html>

2.18 A map of the 2007 Test locations is shown at Figure 2.3.

Figure 2.3 Locations of the 2007 Test



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2.19 The evaluation of the information collated through the 2007 Test played an important part in shaping the methodological approach for the 2011 Census. The 2007 Test also provided a useful insight into the requirements for the systems and services that support the census operation. In addition to the general development of census processes, the 2007 Test was also designed to:

- provide comparative data on two design options – the use of a postal service provider to deliver census questionnaires instead of the use of Census Enumerators;
- examine the impact of new questions (for example, income) and the design of census questionnaires;

- incorporate an operational test of the systems being designed to ensure a successful field operation for the 2011 Census (for example, a Contact Centre for helping individuals to complete a census questionnaire and the use of a questionnaire tracking system to ensure maximum response through the speedy follow-up of non-responders); and
- test the recruitment, training and payment of field staff.

2.20 Evaluation Reports from the 2007 Test are available on the NISRA website. As a result of their findings, several of the procedures followed in the 2001 Census were changed. Important changes included:

- in the majority of cases, delivery of census questionnaires by post;
- the approach to, and the extent of, outsourcing the recruitment, training and payment of the census field staff; and
- using a questionnaire tracking system to track census questionnaire movement and monitor local area response rates.

2.21 In addition to the 2007 Test, smaller scale tests and research were carried out over the period 2005-2008. These ranged from establishing the public acceptability of questions and terminology (conducted primarily through face-to-face consultation events, focus groups and cognitive research) to assessing the feasibility of innovative field activities and the effectiveness and coverage of existing address lists.

2.22 The inclusion or exclusion of questions in the 2007 Test did not in any way infer that final decisions had been made in respect of the 2011 Census questionnaire. The 2007 Test was specifically used to test the clarity and acceptability of potential new questions, while conversely some established questions from 2001 were not included in the 2007 Test.

The 2009 Census Rehearsal

2.23 A rehearsal¹⁹ for the 2011 Census in Northern Ireland took place on 11 October 2009, with the aim of ensuring that all the procedures for the delivery, collection and capture of census questionnaires were effective.

¹⁹ More information on the 2009 Rehearsal is available from:
<http://www.nisra.gov.uk/census/2011/background/2009-rehearsal.html>

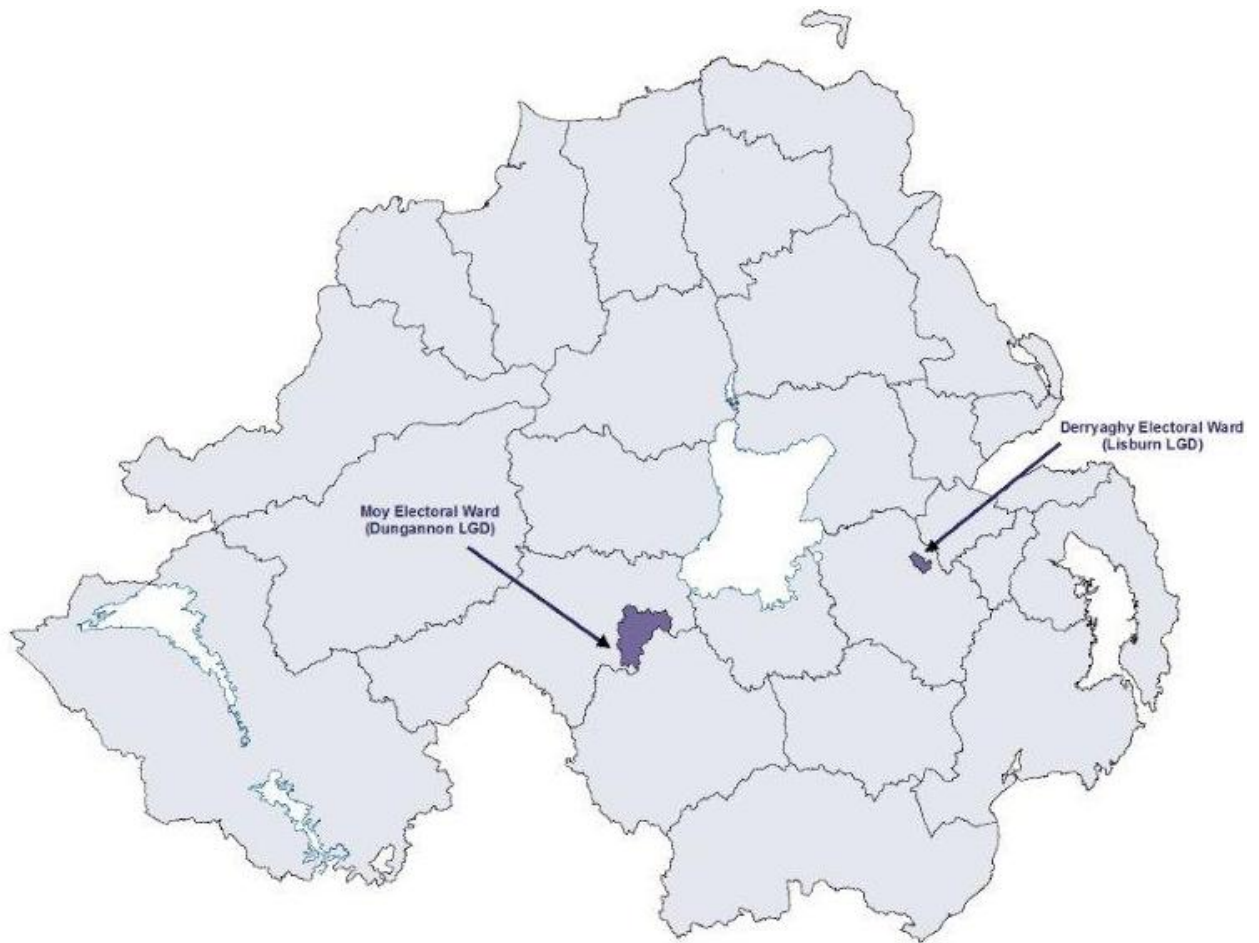
In addition, it helped ensure that the supporting public interface services (for example, a telephone helpline and online help website) were fit for purpose. The rehearsal was originally scheduled for March 2009 to match the calendar timing of the 2011 Census, but it was postponed until October so that prototype systems for 2011 were sufficiently developed. The aim of the 2009 Rehearsal was to cover a diverse range of addresses that adequately embraced the planned procedures for the 2011 Census. The 2009 Rehearsal covered some 5,000 households in the Derryaghy area of Lisburn LGD and the Benburb and Moy areas of Dungannon LGD. Six urban area Enumeration Districts (EDs), each comprising around 600 households, and five rural area EDs, each comprising around 365 households, were chosen to simulate actual census-type conditions by including a cross-section of the population and types of housing, including areas with high numbers of new addresses and areas with high numbers of migrants.

2.24 The aim was to maximise the success of the 2011 Census field operations and supporting systems, particularly the new and innovative procedures and systems, by proving:

- the methodological approach for the field work;
- the key field support systems; and
- data capture and coding systems.

2.25 A rehearsal in England and Wales took place on the same date as the Northern Ireland rehearsal, while a rehearsal was conducted in Scotland earlier in 2009. A map of the Northern Ireland 2009 Rehearsal areas is shown at Figure 2.4.

Figure 2.4 Location of the 2009 Rehearsal



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2.26 An Evaluation Report²⁰ of the 2009 Rehearsal is available on the NISRA website. At 29 per cent, the overall return rate for the 2009 Rehearsal was disappointingly low. However, participation in the 2009 Rehearsal was voluntary and there was no tailored publicity to promote it. Key lessons for the 2011 Census covered the following areas:

Address Register quality

Some important lessons emerged from the 2009 Rehearsal, particularly in terms of the process to overprint the addresses on the front of the questionnaires. These included ensuring that Census Office had sight of the finalised addresses in advance of them being submitted to the questionnaire

²⁰ '2009 Census Rehearsal Evaluation' is available from:
<http://www.nisra.gov.uk/archive/census/2011/2009-rehearsal/evaluation.pdf>

overprint process and that printer and postal service provider requirements were met.

Address Register coverage

Census Office recognised the importance of ensuring that the boundaries of EDs were clearly delineated and that the classification of addresses (for example, commercial/domestic, derelict/demolished and planned/provisional) was rigorously quality assured for the 2011 Census. The experience from the 2009 Rehearsal reinforced the need to keep working on the Census Address Register until Census Day and throughout the field operations period.

Post Back

Work was undertaken to re-design the return envelope to try and ensure that the general public inserted their questionnaires the right way round with the questionnaire barcode visible through the window of the return envelope. Another lesson was the need to ensure that the outbound and inbound envelopes could be clearly distinguished.

Field Operations

The Address Check, Delivery Support and follow-up activities all worked well during the 2009 Rehearsal. In addition, the work-loads were reported by the 2009 Rehearsal field staff to be manageable and there appeared scope to reduce the number of field supervisors by around 23 per cent. On that basis, the operation was considered scalable for 2011.

Public Interface Services – (Telephone helpline and online help)

Two key lessons were identified. Firstly, the content of the Northern Ireland section of the online help website (formerly referred to as web self-help) needed to accurately reflect arrangements in Northern Ireland. Secondly, evidence suggested a need to revise the anticipated usage profiles to more online help rather than the Contact Centre which had been planned on the basis of a 40 per cent/60 per cent split. Additionally, within the Contact Centre, evidence suggested that more users than planned opted for routing to an adviser as opposed to an Interactive Voice Response (IVR).

Questionnaire Tracking

The 2009 Rehearsal highlighted the need for more comprehensive

Operational and Systems Readiness Testing prior to 2011 to ensure that the system was ready to go live. It also highlighted the need for the Field Operations team, who ultimately were the key customers for the system and would be using it, to be actively involved in this testing.

Internet Data Capture (IDC)

Problems were encountered with the Internet Access Code (IAC) that was printed on the front of the questionnaire. Some people had difficulty in identifying some of the letters of the IAC, primarily due to a font issue. The issue was common to both NISRA and ONS and was rectified for 2011. Due to the success of the IDC operation in the 2009 Rehearsal, Census Office actively promoted its use. This included a re-design of the messages on the front page of the questionnaire and on the information leaflet (which accompanied the questionnaire) to encourage respondents to exploit the internet option.

Transportation of completed questionnaires to the processing site

Some 'teething' problems arose during 2009 Rehearsal operations with a small number of questionnaires being initially unaccounted for by Royal Mail. Census Office worked with Royal Mail to review their arrangements to ensure that this could not happen in 2011.

Rehearsal Management Information

The Rehearsal Management Information System, a joint development with ONS, was successful. However, remote access problems meant that NISRA was only able to access the live system towards the end of the operation. While contingency arrangements were deployed, the overall outcome was disappointing given the effort that was put in to the project. For 2011, a bespoke Northern Ireland Census Management Information System (CMIS) was developed in-house.

Quality Review of the Questionnaire

2.27 The 2007 Test and 2009 Rehearsal questionnaires were subject to quality review by external experts in questionnaire design. The findings from these reviews informed the design and content of the final questionnaire and helped to ensure that the questions were clear and understandable.

Questionnaire Design and New Questions

2.28 Consultation on the topic content for the 2011 Census resulted in a much larger demand for questions than could be accommodated on a census questionnaire that households could reasonably be expected to complete. In assessing which topics should be included in the Census, several criteria were used to evaluate the strength of users' requirements for information. These included that:

- there should be a clearly demonstrated and significant need;
- the information required is of major national importance and the data are required for small population groups and/or at detailed geographical levels;
- users' requirements could not adequately be met by information from other sources;
- there is a requirement for multivariate analysis (that is, the ability to cross-analyse one variable against the other); and
- there should be consideration of the ability for comparison with the 2001 Census wherever possible.

2.29 In addition, other factors were taken into consideration in assessing the priorities for topics. These were that:

- the inclusion of particular questions should be shown, in tests, to have had no significantly adverse effect on the Census as a whole, particularly the level of public response;
- practicable questions could be devised to collect data which are of sufficient quality to meet users' requirements;
- the constraints of size and design imposed by a self-completion questionnaire in respect of respondent burden and accuracy of response;
- the Census should not be used to collect data that would deliberately promote political or sectarian groups or sponsor particular causes; and
- legal constraints and/or demands imposed by domestic and European legislation.

The rationale for inclusion of the topics, including new questions, on the census questionnaire is set out in Chapter 3 of The 2011 Census of Population in Northern Ireland Proposals document²¹, published in March 2010. This is considered further in the Report of a Privacy Impact Assessment (PIA)²², undertaken by NISRA, in relation to the 2011 Census in Northern Ireland, which was published in May 2010.

Questionnaire Changes from 2001 to 2011

2.30 Changes to the 2011 questionnaire came about as a result of consultation with key users, and the topics included were those shown to meet the strongest user need for census information. Changes were also made to produce more reliable and accurate, good quality data. Significant change in society has taken place over the last 10 years and, as a result, new questions were introduced, as well as amendments to existing questions, in an attempt to deliver more relevant statistics, for example, the introduction of Civil Partnerships.

Questions

2.31 Twelve new questions were introduced to the Northern Ireland Census questionnaire in 2011. These are set out in Figure 2.5.

Figure 2.5 New questions for 2011

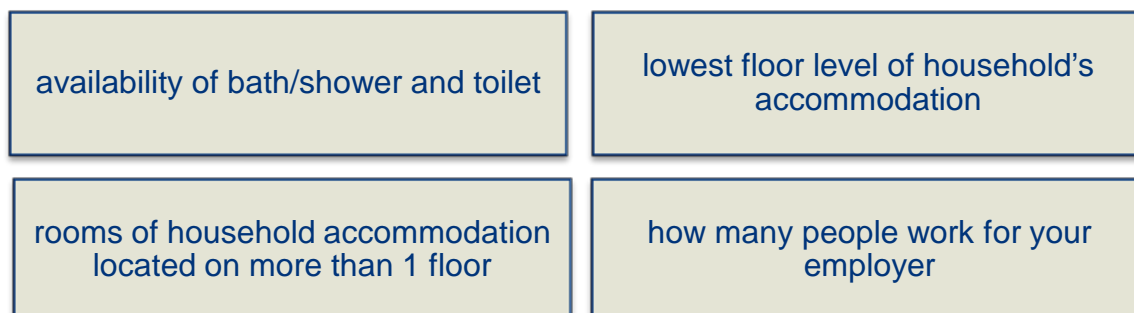
accommodation design or adaptation	voluntary work	nature of health conditions	intention to stay in the UK
lived outside Northern Ireland	last country lived in	date of most recent arrival in Northern Ireland	passports held
national identity	main language	proficiency in English	knowledge of Ulster-Scots

²¹ 'The 2011 Census of Population in Northern Ireland Proposals' document is available from: <http://www.nisra.gov.uk/archive/census/2011/proposals.pdf>

²² 'Report of a Privacy Impact Assessment, Conducted by the Northern Ireland Statistics and Research Agency in relation to the 2011 Census Northern Ireland' is available from: <http://www.nisra.gov.uk/archive/census/2011/privacy-impact-assessment.pdf>

Four questions used in previous censuses were excluded from the 2011 questionnaire. These are set out in Figure 2.6.

Figure 2.6 Questions omitted for 2011



In total, the 2011 questionnaire contained 59 questions (14 household questions and 45 individual questions), compared with the 2001 questionnaire which contained 46 questions (11 household questions and 35 individual questions). In 2011, those aged 16 and over answered questions 27 to 42 on the labour market topic, whereas in 2001 only those aged 16 to 74 years answered the equivalent questions (numbers 16 to 34).

Figure 2.7 Question comparison between 2001 and 2011

2011 Household questions identical to 2001	2011 Individual questions identical to 2001	2011 Household questions similar to 2001	2011 Individual questions similar to 2001
<ul style="list-style-type: none"> • type of accommodation • self-contained accommodation • number of rooms <ul style="list-style-type: none"> • number of cars/vans available 	<ul style="list-style-type: none"> • school child/student in full-time education • term-time address • country of birth • ethnic group • caring for others <ul style="list-style-type: none"> • employment status • occupation • supervisor status <ul style="list-style-type: none"> • employer's business 	<ul style="list-style-type: none"> • residents and visitors • type of central heating <ul style="list-style-type: none"> • tenure • landlord • relationship matrix 	<ul style="list-style-type: none"> • legal marital or same-sex civil partnership status • address one year ago <ul style="list-style-type: none"> • ability in Irish <ul style="list-style-type: none"> • disability • health • qualifications • religion • employer's name • hours worked • address travelled to place of work/study <ul style="list-style-type: none"> • type of transport to place of work/study

- 2.32 The 2011 Census branding was developed to help maximise awareness and participation in the Census. It was important that the branding was used in a consistent fashion and that all 2011 Census communication activities should adhere to the brand guidelines.
- 2.33 Besides addressing operational issues, a 2011 Census branded questionnaire also had to satisfy accessibility requirements. Type (fonts) had to be clear and simple, ideally 14 pt size, contrasting well with the background colour. In addition, layout had to be consistent and logical and the questionnaires had to have clear navigation and use plain language.

International recommendations

- 2.34 The UN and UNECE make recommendations about census content to allow international comparisons. These, together with any EU regulations relating to the 2010 round of European censuses, were considered when deciding which data items to collect from the 2011 Census.

Creating and Quality Assuring an Address Register

- 2.35 Following the successful trialling of Post Out of census questionnaires in the 2007 Test, a decision was made to adopt this methodology as the prime means of questionnaire delivery for the 2011 Census. The availability of a comprehensive, high quality address register for all areas of Northern Ireland was crucial to this strategy. However, none of the address products available at that time met NISRA quality targets, and it was therefore necessary for NISRA to construct an address register specifically for undertaking the census.
- 2.36 To this end, a 2011 Census Address Register was developed to meet census requirements in terms of quality and coverage and effectively underpin census enumeration and outputs. This address register was principally drawn from the POINTER address database, which is being developed for Northern Ireland jointly by Land and Property Services and Royal Mail, in conjunction with local district councils.
- 2.37 The resulting Census Address Register contained a list of addresses, linked to higher level geographic areas for management, reporting and output purposes. This required associating every address with an accurate positional reference, which was used during the planning of field operations, the printing of questionnaires and the production of outputs.

Community Liaison

2.38 The 2011 Census Community Liaison strategy built on the success of the innovative community liaison activities which had been carried out for the 2001 Census. Previous censuses have shown that certain population groups are less likely to complete and return their questionnaires or present other enumeration difficulties. These include young men, certain minority ethnic groups, older people, low-income families, non-English speakers and people with disabilities. The reasons vary from unwillingness to complete the questionnaire because of concerns or misunderstandings about how the information is used, through to potential barriers such as a lack of English language skills. The 2011 Census built on the valuable experience gained and the lessons learned from the 2001 Census by placing emphasis on more collaboration with the many agencies and community organisations involved.

2.39 The innovative 2001 Census Community Liaison initiative was further developed to establish contact with relevant community groups and agencies. Links were established with important organisations such as statutory bodies, the Northern Ireland Council for Voluntary Action (NICVA), Northern Ireland Council for Ethnic Minorities (NICEM), Age Concern, the Royal National Institute of Blind People (RNIB) and Action on Hearing Loss (formerly known as the Royal National Institute for Deaf People (RNID)), and others representing minority populations and special interest groups. Specific objectives of the 2011 initiative were to:

- encourage participation in the Census by publicising the Census and underlining its use and value;
- raise awareness of the field staff role and encourage all population groups to apply for the field staff positions; and
- provide help and guidance to local communities and individual members of the public.

2.40 In particular, a range of information providing guidance and support was prepared, including:

- a large print document comprising an information leaflet with questions and instructions from the Census questionnaire;

- Braille Census information leaflets and Braille versions of the Census questions;
- audio tapes providing information on the Census, the Census questions and associated instructions;
- a video recording using British Sign Language (BSL) with subtitles for use by community groups;
- a helpline, with a dedicated Minicom facility; and
- BSL interpreters.

2.41 In addition, translation leaflets, the Census questions and instructions from the Census questionnaire (but not the questionnaire itself) were available in a number of languages, see Figure 2.8.

Figure 2.8 Translation leaflet languages

Cantonese Chinese	Czech	Hungarian
Irish	Latvian	Lithuanian
Mandarin Chinese	Polish	Portuguese
Punjabi (Gurmukhi)	Romanian	Russian
Slovak	Urdu	Ulster-Scots

2.42 Gathering a full picture of the impact of the Community Liaison Initiative on the 2011 Census proved difficult because many of the effects were somewhat intangible. However, its benefits were visible through census articles in specialist media and interviews on local radio and TV. This programme can have only improved response, particularly among the key population groups.

Outsourcing and Contract Management

2.43 NISRA contracted out a number of services as a major part of ensuring a value-for-money Census in 2011. External suppliers bring with them considerable technical experience and expertise, which would otherwise be unavailable to NISRA.

2.44 The activities that were outsourced covered:

- the recruitment, training and payment of field staff;
- the printing of the questionnaires;
- the delivery of questionnaires, and the collection of completed returns via a postal service;
- the provision of a questionnaire-tracking system;
- the provision of an online questionnaire completion system and a Contact Centre;
- the translation, printing and distribution of non-questionnaire material and other field logistics services;
- the publicity campaign;
- the capture and coding of census data in electronic format; and
- the production of the archival records.

2.45 As with the Census in 2001, NISRA worked closely with the other UK Census Offices to procure and develop common services for 2011. This gave rise to considerable efficiency savings as in certain circumstances Northern Ireland paid a population share for joint developments. During the early stages of the census development cycle, senior census management decided to pursue this business strategy across a range of census areas.

2.46 The main benefits of this approach include:

- optimising the use of both internal and external resources;
- the ability to go to the market place for technical expertise;

- the exploitation of efficiencies through joint ventures with ONS with costs for common services typically shared on a population basis (approximately 3 per cent for Northern Ireland); and
- having direct access to additional experienced resources in ONS.

Additionally, NISRA was able to opt out of procurements or elements of individual procurements where census management deemed it prudent and cost effective to procure the service via an alternative local channel.

2.47 The National Audit Office's (NAO) report on the 2001 Census in England and Wales noted a number of deficiencies in the management of the procurement process and made a number of recommendations on the arrangements for procuring services for future census operations. As a result, the procurement phase of the 2011 operation was completed at a much earlier stage in the planning programme than was the case last time.

2.48 The process to select a supplier for the major part of the data processing operation began in September 2005. Following an extensive evaluation of candidates, two companies – Lockheed Martin UK Ltd (LMUK) and T-Systems Ltd – were short-listed in September 2006, and both worked together to deliver different components of the 2007 Test. Following refinement of the 2011 Census requirements and further evaluation, a single supplier – LMUK – was selected, and the decision was announced on 28 August 2008.

2.49 The five operational areas within the scope of the contract were:

- Questionnaire Tracking (QT);
- printing of Census questionnaires and related information leaflets;
- paper data capture and coding;
- internet capture and coding; and
- Public Interface, consisting of a telephone helpline and online help.

2.50 Noting the NAO's concerns, much tighter contract management, training and budgetary controls of the procurement processes were imposed than was the case for the 2001 Census, and these have also been subjected to rigorous external scrutiny through the Office of Government Commerce Gateway Review procedures.

Other contracts

2.51 The following additional services were procured through joint procurement initiatives with the ONS:

- print management;
- translation services (except for Irish and Ulster-Scots);
- field logistics (supplies, materials and non-secure distribution/collection);
- secure distribution/collection; and
- postal services.

2.52 NISRA made arrangements to procure the following services alone through local procurements:

- translation services (Irish and Ulster-Scots);
- interpretation services;
- telecommunications (supply of field staff mobile phones); and
- certain printing services.

2.53 For those services set out in paragraph 2.51, the ONS Service Management Team took the lead in managing the services provided by contractors. NISRA staff had an important role to play in the selection of service providers and the day-to-day monitoring and management of the service provision as members of pertinent service integrated project teams.

The Legislative Process

Census Proposals

2.54 The 2011 Census of Population in Northern Ireland Proposals were published in March 2010 and set out the NISRA's proposals for the 2011 Census, covering (among other issues):

- the date of the Census;
- strategic aims;
- the population base;
- questions to be included;
- those questions considered but not included;
- the field operation (delivering the questionnaires and collecting the completed returns);
- processing the data;
- disseminating the results;
- confidentiality and disclosure control; and
- the legislative process.

2.55 The content of this Paper reflected the outcome of consultation with government departments and a range of other users of census data on their requirements for information from the Census and the results of a programme of both small and large-scale question tests.

2.56 Equivalent but separate papers were published in England, Wales and Scotland. For England and Wales, ONS co-ordinated the publication of a Cabinet Office Census White Paper, in March 2008, entitled 'Helping to shape tomorrow'²³; which set out the proposals for the census there. Similarly, for Scotland, in December 2008, Scottish Government ministers

²³ '2011 Census White Paper' is available from: <http://www.ons.gov.uk/ons/guide-method/census/2011/the-2011-census/2011-census-questionnaire-content/2011-census-white-paper.pdf>

published proposals²⁴ for the 2011 Census.

Primary Legislation

2.57 The primary legislation that provides for the taking of a census in Northern Ireland is the Census Act (Northern Ireland) 1969, which states that the First Minister and deputy First Minister, acting jointly, may direct that a census of population shall be taken. The responsibility for making the necessary arrangements for planning, conducting and reporting of the Census rests with the Registrar General for Northern Ireland. The Census in Northern Ireland is conducted in close liaison with the Censuses in the rest of the UK.

2.58 The legal authorisation for the inclusion of ‘matters in respect of which particulars may be required’ from the Census is contained in the Schedule to the Census Act (Northern Ireland) 1969. The following refers:

- (1) Names, sex, age;
- (2) Occupation, profession, trade or employment;
- (3) Nationality, birthplace, race, language;
- (4) Place of abode and character of dwelling;
- (5) Condition as to marriage or civil partnership, relation to head of family;
- (6) Education, professional and technical qualifications;
- (7) Religion; and
- (8) Any other matters with respect to which it is desirable to obtain statistical information with a view to ascertaining the social condition of the population.

Secondary Legislation

Census Order for Northern Ireland

2.59 In the 2009/2010 Assembly session, a Census Order in respect of the Census in Northern Ireland was prepared for approval by the Northern Ireland Assembly, subject to Affirmative Resolution. The Census Order

²⁴ ‘Scotland’s Census 2011 – A Government Statement’ is available from:
<http://www.scotlandscensus.gov.uk/documents/legislation/scotlandscensus-2011.pdf>

(Northern Ireland) 2010 (SR 2010 No.195) was laid by the First Minister and deputy First Minister before the Assembly on 2 June 2010. The Order, made in accordance with the provisions of the Census Act (Northern Ireland) 1969, as amended by the Census (Confidentiality) (Northern Ireland) Order 1991 and the Law Reform (Miscellaneous Provisions) (Northern Ireland) Order 2005²⁵, prescribed:

- the date on which the Census is to be taken;
- the persons by whom and with respect to whom, the Census returns are to be made; and
- the particulars to be stated in the returns.

Census Regulations for the Census in Northern Ireland

2.60 Following the approval of the Order, the Minister for Finance and Personnel, laid before the Northern Ireland Assembly Census Regulations, which made detailed provision for the conduct of the Census in Northern Ireland and which contained specimens of the questionnaires to be used. The Census Regulations (Northern Ireland) 2010 (SR No.218) were made on 17 June 2010 and came into force on 26 July 2010. They prescribe in detail the method of carrying out the Census and set out the duties and responsibilities. They gave census field staff legal powers to conduct the census and to follow-up non response. They also made it an offence not to complete a census questionnaire, or to refuse to provide field staff with census information; and they also spell out confidentiality restrictions.

2.61 The Regulations principally cover the field activities such as:

- the appointment of field staff;
- the geography of the Census – the Registrar General shall divide Northern Ireland into census districts and shall divide each census district into EDs;
- the arrangements for the delivery of census questionnaires to households and CEs;

²⁵ The 'Law Reform (Miscellaneous Provisions) (Northern Ireland) Order 2005' is available from: <http://www.legislation.gov.uk/nisi/2005/1452/contents>

- the collection of completed questionnaires, either by post or doorstep collection, or by online return;
- the duties of field staff and, specifically, the details of any particulars to be collected by them;
- any information relating to special arrangements for the enumeration of particular populations, such as persons sleeping rough;
- follow-up procedures;
- the management of field materials and documentation; and
- security and confidentiality procedures.

2.62 UK harmonisation was achieved through close liaison and co-operation between the three Census Offices, and through the agreement between the National Statistician and the Registrars General to work together to achieve consistent and comparable census outputs both to meet users' requirements and to fulfil the UK's international obligations.

Publicity

- 2.63 The overall objective of the census advertising campaign was to maximise overall response rates and minimise non-response in specific areas and among particular population groups. Consequently, the first aim for the advertising campaign was to reach the entire population.
- 2.64 The second aim was to have inclusive messages and universal appeal. To achieve this, all elements of the 2011 Census advertising campaign had to be inclusive, meaning 'respectful to all' and communicate the message 'Census is for everyone'. Furthermore, it had to be enabling, meaning that it had to communicate that census participation helps to make a positive impact on people's lives and to have a clear call-to-action, 'Fill in your questionnaire'.
- 2.65 Every census presents a unique challenge to marketing communications in that it necessitates communicating with and motivating every household in Northern Ireland to fill in their census questionnaires. The target audience was effectively 'everyone'. However, by definition, most advertising campaigns are targeted to specific audiences, and therefore focus on the channels that deliver that particular audience. Very few public awareness campaigns have such broad audience goals as the census, required to reach

everyone, with a finite media buying budget. Therefore, a finite media budget necessitated prioritisation of specific audiences.

- 2.66 The success of the census therefore depended on making contact with every household in Northern Ireland. The greater diversity of households made this increasingly difficult for key population groups (such as ethnic minorities, migrants and young adults), which are the very groups for which census information is critical.
- 2.67 Low return rates from a particular population group could adversely affect the quality of census outputs for that group or area. The strategy for the 2011 Census was to acknowledge this challenge and devote more resource to those households that would be difficult to engage and less resource to those households which generally complied.
- 2.68 The census communications activities, including the paid-for advertising, were designed to reinforce this strategy. Furthermore, there were several changes both to society and census strategy, which made the communication challenge for the 2011 Census significantly greater than in 2001.
- 2.69 Changes in society included:
- an increasingly diverse population, with a particular increase in migrant communities with different cultural experiences of census;
 - an ageing population and changing lifestyles; and
 - a significant reduction in compliance seen in response to NISRA social surveys.
- 2.70 Changes in the census strategy included:
- first online census;
 - questionnaires were delivered by post rather than by hand for the first time, which reduced an initial explanation and face-to-face communication with the public; and
 - greater focus on non-response follow-up.
- 2.71 The development of the 2011 campaign was informed by findings from the 2001 Census, government communication best practice and market research insights.

- 2.72 The creative platform for the campaign was the ‘Help tomorrow take shape’ concept. This simple call-to-action was literally an invitation for everyone to participate in shaping the future of their local environment, in everything from important services, such as health and education, to local parks and facilities – the ‘planning story’. The central metaphor of the campaign took as its starting point the census folded origami logo and purple branding and used it to create origami objects, such as buses and hospitals, which in themselves are the end ‘benefit’ of the census.
- 2.73 Qualitative message development research and findings from the 2009 Rehearsal revealed that response levels would be influenced by three important factors:
- awareness and understanding of the census benefits;
 - clear direction of what people need to do and when; and
 - acceptance of legal obligation.
- 2.74 Echoing this, a three-phased campaign structure was devised:
- Phase 1 Educate: census awareness and understanding of census benefits;
 - Phase 2 Call-to-Action: clear direction to complete the questionnaire NOW; and
 - Phase 3 Enforce: focus on the possible fine and consequences of non-completion.
- 2.75 Integration of media channels and activity with important dates within the overall census operations, the go-live date of the data capture web site, the Post Out of the census questionnaires and the commencement of the field operations follow-up was crucial.
- 2.76 The 2011 Census employed a wide range of communications channels and activities, depending on the target audience. It was impossible to reach all census audiences through one communications channel; on the other hand, particular channels were very effective in reaching specific audiences. The 2011 Census used a combination of channels and activities, including paid-for, owned and earned media channels.

2.77 The paid-for media channels for the campaign approved by the Northern Ireland government Advertising Unit were:

- TV advertising;
- outdoor/Out-of-Home (OOH) advertising;
- digital and social media; and
- print advertising.

Figure 2.9 Help tomorrow take shape advertisement



Further information on the 2011 Census publicity initiative is provided in Chapter 4 – Data Collection.

3 Managing the Census

- 3.1 As for the previous Census, the 2011 Census Programme was planned and conducted around five phases:
- a research phase reviewing options and proposed new topics;
 - an assessment of options in a public test in 2007;
 - a prototype for 2011 in the 2009 Rehearsal;
 - the 2011 Census enumeration; and
 - data processing and output production.
- 3.2 NISRA worked in close liaison with the other two UK Census Offices in order to maximise the potential to add value through co-ordination, while meeting each country's particular requirement. This gave NISRA direct access to additional experienced resources in the other Census Offices and allowed for joint working in a number of areas, for example, procurement, questionnaire content and data processing.
- 3.3 A multi-tier governance structure was put in place to support the control and coordination of policy and operations across the three UK Census Offices in order to ensure the greatest possible degree of harmonisation between the three censuses.

Committees and Boards

- 3.4 The long-standing United Kingdom Census Committee (UKCC), chaired by the National Statistician, and comprising the Registrars General for Scotland and for Northern Ireland, the England and Wales Census Director and senior officials from each of the three census offices, coordinated policy at the UK level. Its role was to:
- agree the scope for common strategic activity across the three UK Census Offices, designed to establish a common UK Census in 2011;
 - achieve coherent UK-wide outputs from the 2011 Census, with particular reference to consistent methodologies, geographic boundaries, definitions, classifications and questions;
 - meet the need for such output by taking into account:

- the functions and independent authority of the devolved administrations;
- UNECE/Eurostat recommendations on, and the need for statistics to be harmonised with, international censuses; and
- how the content of 2011 Census would form an element of an integrated population statistics system.
- identify the areas where, in order to maximise efficiency:
 - there was a necessity for a common approach across the UK;
 - a common approach was desirable but not necessarily achievable; and
 - a degree of flexibility was necessary.
- resolve issues where there were conflicts of views or objectives across the three Census Offices which could be resolved within the lower level management board and which had subsequently been reported and escalated through any of the three Project Boards; and
- agree the cross-office funding and resourcing for shared and specific activities.

3.5 UKCC met quarterly throughout the census programme and was supported by the UK Census Harmonisation Committee (UKCHC), chaired by the ONS Census Deputy Director. Its role was to identify and agree areas of research into those issues covered by the main 2011 Census Projects, where there was scope for, and benefit in, following a common approach across the three UK Census Offices, with the aim of achieving a successful UK Census.

3.6 UKCHC considered joint approaches to research into issues relating to:

- systems design (including questionnaire tracking, data capture, internet collection and geo-referencing);
- statistical development (population base definitions, topics and questions, questionnaire design, coverage adjustments, edit and imputation, disclosure control and output requirements); and

- outsourcing (including the use of corporate tools) for processing and other operations;

and was charged, in particular, with responding to the demand for consistent and comparable UK-wide information in 2011 on:

- population benchmarks and denominators for people, households, families and dwellings;
- finely-grained information for Small Areas and small groups within the population; and
- household and person-based information collected on a range of common topics.

3.7 UKCHC also met quarterly but reported, in the main, as a joint sub group to each of the three national Census Programme Boards (CPB) that managed the progress of each respective census programme. The function of the CPB was to drive the programme forward to ensure delivery of the outcomes and benefits and to support the Senior Responsible Owner (SRO) accountable for the successful delivery of the programme, and who chaired the Board.

3.8 Throughout the planning and process, other Project Boards, supplemented by various Policy and Operations Boards, were established, as required, by ONS. NISRA maintained membership of the majority of these Boards. These included:

- 2011 Census Delivery Board
- Operational Services Board
- Field Operations Board
- Address Register Board
- Downstream Processing and Statistical Quality Board
- Census Outputs Board
- Stakeholder Management and Communications Board
- Census Security Board
- Census Management Board

- Procurement Assurance Group
- Contract Management Board
- IT Delivery Board
- Census Release Panel
- Dissemination Delivery Board
- Information Assurance Board
- Statistical Outputs Board
- Analysis Project Board
- Evaluation Board

3.9 In Northern Ireland, work was undertaken to align various work streams to those of ONS to ensure NISRA's involvement in all key projects and hence decision making. This helped NISRA delineate an appropriate organisational structure, with local governance arrangements managed by two main Boards:

- Demographic Policy Board (Chaired by the Registrar General for Northern Ireland); and
- Census Operations Board (Chaired by the Head of Census).

3.10 The Demographic Policy Board (DPB) coordinated and managed the Census programme delivery in Northern Ireland according to the programme plan. Additionally, DPB ensured that individual project outputs were harmonised so as to deliver the programme outcomes and benefits. DPB members were collectively responsible for the delivery of the programme. To achieve this purpose, each of the main work stream areas reported in an agreed format so that information could be aggregated to programme level. DPB focused on those areas that were important to the programme and ensured that:

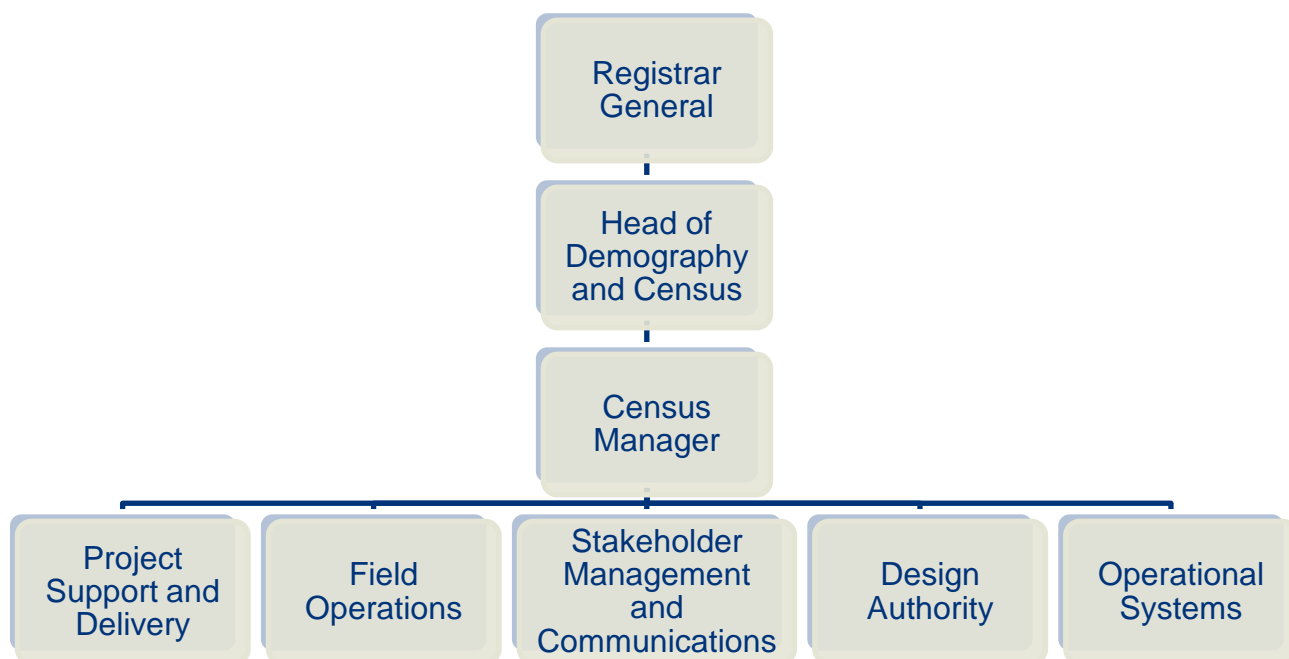
- projects adhered to plans and that exceptions were reported as soon as possible;
- dependencies and interfaces between projects were managed;
- those risks and issues escalated from projects were managed appropriately;

- the impact of any change is recognised and managed to avoid ‘scope creep’;
- project outputs delivered the agreed goals and quality standards, and contributed appropriately to benefits realisation; and
- costs and resources were managed appropriately.

3.11 Below DPB sat the main operational board – the Census Operations Board (COB), which was responsible for the management and delivery of specific census activities within the overall programme. These included:

- Project Support and Delivery;
- Field Operations;
- Stakeholder Management and Communications;
- Design Authority; and
- Operational Systems.

Figure 3.1 2011 Census Organisation Structure



3.12 The number of permanent core census staff at Census Office was 15 at the start of the main planning period in 2005/06, rising to a maximum of 36 in

2010/11 during the period immediately leading up to Census Day itself (27 March 2011).

Project support

3.13 Within Census Office, a Project Support Office (PSO) was set up to provide a programme support service to the 2011 Census. Its function was, in particular, to:

- develop and maintain the project plans, control processes and tools for use throughout the project;
- provide support to the census project staff in the application of project management and control through active day-to-day support;
- provide a secretariat for main Northern Ireland Boards – DPB and COB; and
- shadow the secretariat of the UK and GB committees and Boards, including the Census Delivery Board, Census Programme Board, UK Census Committee and UK Census Harmonisation Committee.

3.14 The management arrangements were based upon the government's PRINCE2 (PProjects IN Controlled Environments) methodology and were tailored for each of the different phases of the programme. Additionally, the PSO was responsible for numerous management processes in support of the project and operations. These included:

- risk management;
- issues management;
- incident management;
- change control;
- decisions made;
- lessons learned log;
- programme reporting;
- records management;

- business continuity planning;
- accommodation planning; and
- census confidentiality undertakings.

3.15 The PSO also coordinated liaison with a range of external assurance processes such as the Independent Information Assurance Review and the designation of Census outputs as national Statistics by the UK Statistics Authority.

Financial Management and Costs

3.16 The Northern Ireland 2011 Census cost around £21.8 million over the six year period 2008 – 2014. Over the ten year cycle (2005/2006 to 2014/15), the cost is expected to be around £25 million.

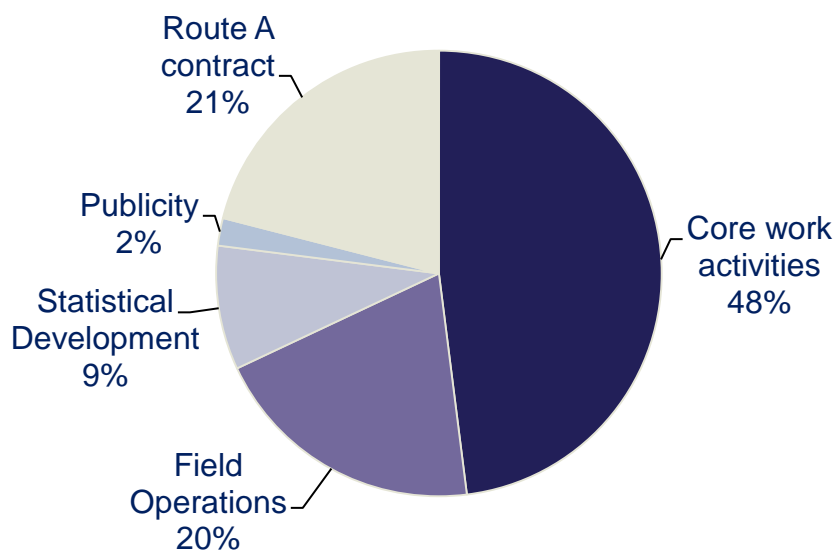
3.17 Throughout the whole of the census programme, costs were closely controlled and monitored. Taking the costs of the core works activities aside, which are spread over the entire 10 year period, the largest elements related to:

- the major outsourced services (bundled under the Route A contract which included questionnaire printing, online response, questionnaire tracking, public interface – a telephone helpline and online help – and data processing); and
- the field operations (which included the recruitment, training and payment of field staff and other ancillary data collection costs, such as Post Out and Post Back of questionnaires and the supplies and materials required for the operations).

Together these presented some 41 per cent of the entire costs.

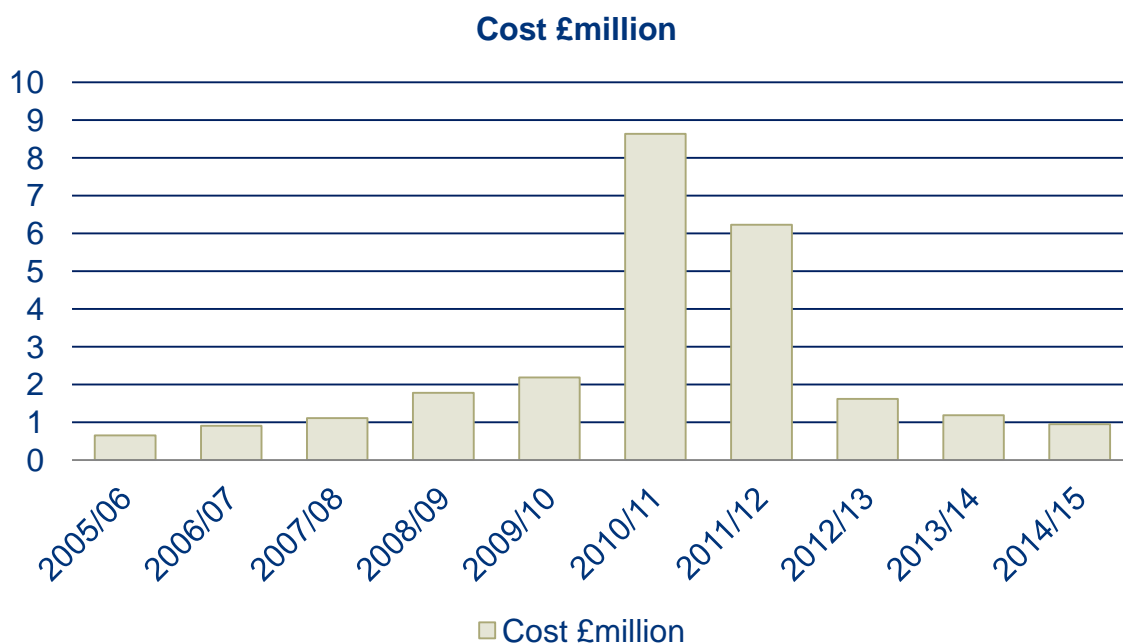
The breakdown of the total cost by main component activity is provided in Figure 3.2.

Figure 3.2 Northern Ireland Census 2011 costs by component activity



3.18 In any census, costs are not spread evenly over the whole operation and typically the greatest expenditure is, unsurprisingly, the year in which Census Day falls. For the 2011 Census, however, Census Day (27 March 2011) fell at the very end of the financial year 2010/2011, and so the greatest spend was spread more evenly over the two consecutive years 2010/2011 (which accounted for the greater part of field costs, Post Out and systems development) and 2011/2012 (in which field follow-up occurred and the whole of the outsourced data processing operation took place).

Figure 3.3 Northern Ireland Census 2011 costs by year 2005/6 to 2014/15



4 Data Collection

Introduction

- 4.1 The data collection operation covered a wide range of activities in addition to delivering the questionnaires and receiving the completed returns. These include field staff recruitment, legal matters, financial and technological issues, and the establishment of contractual arrangements for the provision of supplies. As with the 2001 Census, a great deal of focus was given to the data collection activities.
- 4.2 Experience has shown that it is increasingly difficult to make contact with households. This was a major influence in shaping data collection plans for the 2011 Census. These difficulties can be attributed to: an ageing population, growing numbers of one-person households; changing work patterns; an increase in buildings with controlled access systems; an increasing number of migrants; and perhaps a less acquiescent society. Ensuring that every household receives a census questionnaire and is motivated to complete and return it is, therefore, more than ever a key driver in the strategy and planning for data collection. To this end, an effective publicity strategy was vital to the data collection operation and ultimately the success of the Census. Publicity arrangements are described at the end of this chapter.
- 4.3 The enumeration was conducted in a way that was designed to achieve the most complete coverage with efficient use of resources, while maintaining the public's acceptance and confidence in the importance and security of the Census. Although many aspects of the Census followed well-established and proven methodologies, changes were introduced to improve the efficiency of the census operation and provide better help to the public. For example, the use of a postal service provider for the delivery and return of the majority of questionnaires helped overcome the difficulties of recruiting large numbers of temporary enumerators to deliver census questionnaires to every address, and of accessing accommodation protected by security systems. Together with the option of making a return online, this freed up field staff to be used more efficiently during follow-up of non responders. There was continuous monitoring of the progress of the enumeration in the field so that extra assistance could be quickly re-directed to wherever necessary.

Operational Objectives

4.4 A number of key objectives of the data collection operation underpinned the broad strategic aims of the Census. These were to:

- develop an effective enumeration methodology that targets resources and procedures to maximise response;
- track receipt of census questionnaires to target non-response;
- encourage a high level of online response (with the potential to reduce costs in other areas);
- overcome the problems associated with the recruitment, retention and payment of a large field force;
- manage public participation and co-operation through informative publicity; and
- work with the postal service provider and others in planning and executing the enumeration, in particular to make best use of their knowledge of local addresses and residence arrangements and ways of contacting hard-to-count groups.

Design of the Field Operations

4.5 Census Office designed the field operations to maximise the likelihood of achieving the objectives, to minimise risks and to identify operational problems promptly so that remedial action could be taken in time. The main field operation comprised four distinct activities: questionnaire delivery; questionnaire return; follow-up of non-responders; and special enumeration.

Questionnaire delivery phase

4.6 For the first time, Census Office used the postal service to deliver census questionnaires to households across Northern Ireland. The only exception to this was in the rural areas of Fermanagh LGD (that is, outside of Enniskillen), where hand delivery of questionnaires by enumerators was retained. This was because Census Office had concerns about the quality of the address register for those areas. Additionally, for other types of accommodation, including CEs, questionnaires were delivered by staff from within the Census Office Head Quarters (HQ) based at the Northern Ireland Census Fulfilment

Centre (NICFC) and Census Team Co-ordinators (CTCs).

- 4.7 The Post Out option was adopted for a number of reasons. In 2001, many Census Enumerators were unable to contact householders and ended up simply posting the questionnaire through their doors. Field staff also had difficulty delivering questionnaires to dwellings with controlled access (for example, apartment blocks). However, as the postal service delivers daily to these addresses, tapping in to this knowledge and the ‘trusted status’ that postal workers have was important in reducing the risk of missing people in these dwellings. Post Out also reduced the costs of delivery and enabled resources to be concentrated on other aspects of the operation, such as pre-Census Day address checking and following up non-responding addresses. The Post Out option was tested successfully during the 2007 Test.

Questionnaire return phase

- 4.8 The public could respond to the census in several ways, by:
- completing the paper questionnaire and posting it back in the prepaid envelope;
 - completing an online return (each paper questionnaire had a unique internet access code that let the householder enter the census website securely and complete their return); and
 - handing their completed paper questionnaire to census field staff on their doorstep.
- 4.9 A Questionnaire Tracking (QT) system was developed as a direct consequence of lessons learned from the 2001 Census. Each household address was allocated a unique Enumeration District Record Number (EDRN) and individually referenced questionnaires were linked to each address. Unique questionnaire barcodes on questionnaires enabled every questionnaire to be tracked at various stages of the field operation.
- 4.10 The paper questionnaire barcodes were read as they passed through the postal system, usually within 24 hours. This, along with similar information generated by online questionnaire completion, generated receipt information that was captured on the QT, providing up-to-date information on which households had made a return and which were still outstanding.

Following-up non-responders

- 4.11 The use of Post Out and Post Back, together with online completion, was a very cost effective way to log all the households who made a return. As a result, field resources could be targeted at those unwilling or unable to make a return without support and/or encouragement.
- 4.12 The non-response follow-up operation started 11 days after Census Day. Census Office's experience of the 2001 Census indicated that this was the time when the rate of unprompted returns would start to reduce. Starting this stage earlier risked field staff chasing people who were going to respond anyway; while starting it later risked reducing the window of opportunity to make contact and persuade people to respond, since there would be limited time for follow-up before the start of the separate fieldwork for the Census Coverage Survey (CCS). Additionally, there was the added risk that public awareness of the census would rapidly diminish.
- 4.13 Field staff were issued with lists, generated from the QT, of the non-responding households. Their objective was to obtain a return from each of these households. They could help the willing to complete the questionnaire (explaining the questions, providing a translation leaflet or advice), or persuade the unwilling to take part (by reminding them why the information is important to them and their community and, if necessary, mentioning the compulsory nature of the census). This activity continued for four and half weeks, giving time to make repeated visits to households where no contact had been made or a completed questionnaire still had not been received.
- 4.14 The prompt receipting both of paper and internet returns gave field staff up-to-date information on non-responders that enabled them to target their efforts. Staff primarily worked in their own designated areas, but occasionally field staff worked flexibly to assist in other areas where there were more non-responding households.
- 4.15 In addition to field staff visits, more than 60,000 households that had not made a return were sent a letter requesting they do so. This was implemented around the middle of follow-up to add extra impetus to the publicity messages to encourage householders who had not yet submitted a response, to do so.

4.16 The non-response follow-up operation stopped on 7 May to allow for the start of the CCS on 9 May. The CCS was an independent survey in which NISRA assessed who the census counted and who it missed in a sample of 2 per cent (15,000) of households. This information is used to help produce the final published population estimates that make an adjustment for those who were not included on Census returns. It was extremely important that the CCS did not overlap with the census as the methodology relies on the two exercises being independent of each other.

Special enumeration

- 4.17 CEs are places providing managed residential accommodation, such as nursing homes, military barracks and student halls of residence. Each CE was provided with two types of questionnaire: an 'Individual' questionnaire for each CE resident (with the same questions that individuals in households completed); and a 'Communal Establishment' questionnaire for the manager to complete (detailing the nature of the establishment and the number of residents).
- 4.18 Questionnaires were delivered by hand to all CEs. Large CEs of 100 or more usual residents and special establishments, for example, MOD properties, were covered by a team working from the NICFC, while smaller CEs of less than 100 usual residents were covered by CTCs in their respective areas.
- 4.19 The CE delivery operation started on Monday 10 March, three weeks before Census Day, and continued up to Census Day. CE Questionnaires were collected by census staff rather than being posted back. This was primarily to ensure good coverage (the CTC or NICFC staff member could check whether the questionnaires collected matched those they expected to collect). As with the household enumeration, information on online completion of individual questionnaires was received from the QT system.
- 4.20 The CE collection phase continued until Saturday 16 April, three weeks after Census Day. Repeat collection visits were made as needed and extra assistance offered to individual residents and managers as necessary.

Structure and Size of the Field Force

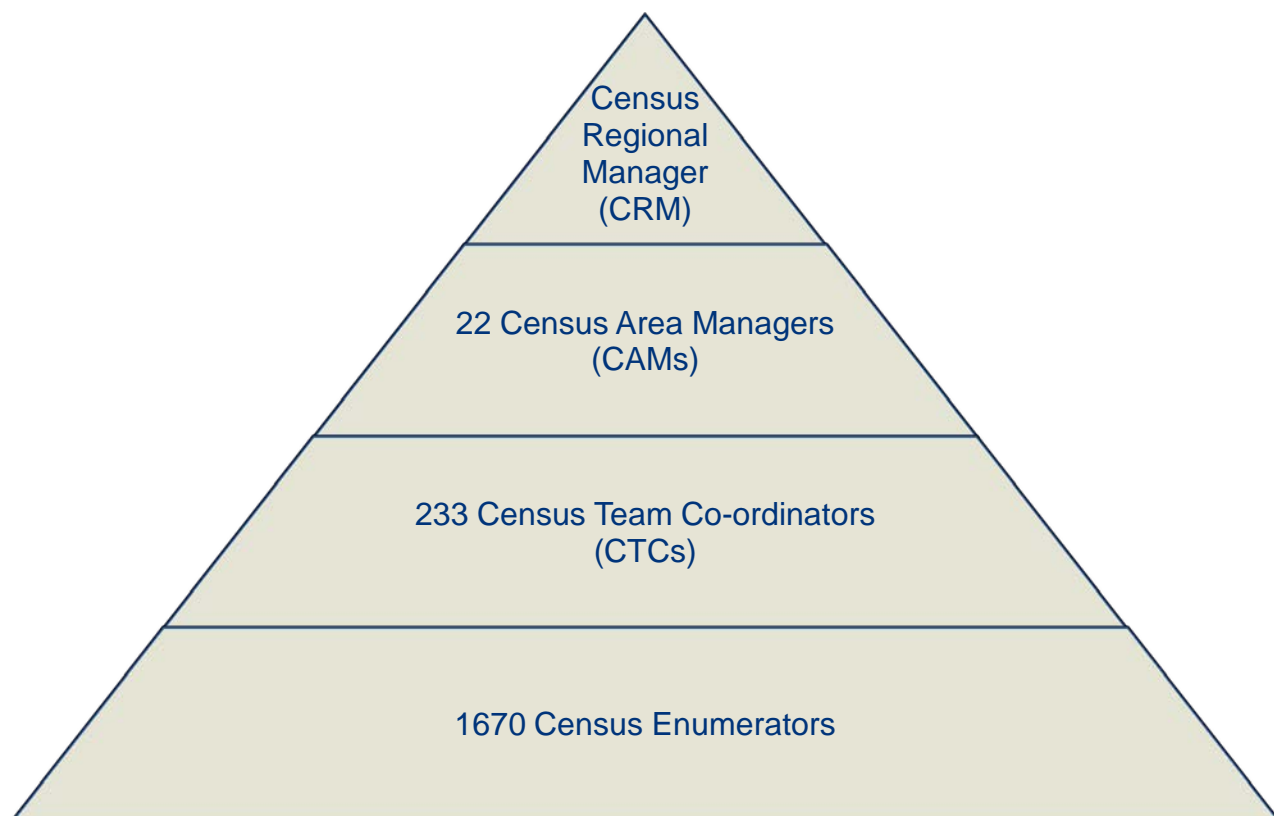
- 4.21 The structure of the field force was hierarchical; with the number of managers based primarily on ratios of staff to managers. Other factors influencing the number of managers included the geographic size of the area. As in previous Censuses, enumerators were allocated a fixed geographical area (EDs), for which they would be responsible for delivering the questionnaires and collecting and following up returns. The size of these areas was based mainly on the number of questionnaires to deliver. Fewer addresses were allocated to staff in rural areas because of the greater travel required. Enumerators were responsible for households and communal establishments in their own ED, with the exception of very large communal establishments, which were enumerated by a team from Census Office HQ.
- 4.22 The design of the 2011 Census required a different approach to 2001 because of the removal of the delivery task and CE enumeration from the enumerator role. However, from an operational perspective, the delivery phase of the enumeration process was not simply a case of placing a questionnaire pack through a letter box. Important aspects of the delivery phase would have been omitted through a solely Post Out approach. These included, among other things, making contact with householders on the doorstep, identifying new addresses and households, and issuing extra questionnaires, such as Continuation and Individual questionnaires.
- 4.23 To overcome this and to ensure these operational requirements were covered, appropriate systems and field staff had to be put in place to support the Post Out enumeration process. The hybrid method developed helped with this in that: (i) Royal Mail did what they do best day on day, that is, delivered pre-addressed mail throughout Northern Ireland; and (ii) a team of specially recruited and trained enumerators, effectively managed by CTCs, supported the Royal Mail delivery process. Additionally and crucially, having a team of enumerators in place during the delivery period prior to Census Day provided contingency cover to revert to a hand delivery methodology if, for example, Royal Mail had been unable to undertake the Post Out, either nationally or locally, because of industrial action by postal staff or some other operational reason.

4.24 The field staff structure was developed on the premise that workloads for enumerators during the delivery support and follow-up periods must be manageable, to enable pre-delivery Post Out support duties to be completed within a sensible timeframe, and the pursuance of robust follow-up, again within a given timeframe. Initial analysis during development suggested that the optimum sizing of EDs should be in the region of:

- 605 households for urban areas; and
- 365 households for rural areas.

This was obtained by using follow-up visit data gleaned from the 2001 Census to estimate the number of follow-up visits possibly needed. From these data, along with estimates of the time taken to complete household visits (longer in rural area than in urban areas), Enumerator workloads were approximated and subsequently the number of enumerators required estimated. The field staff structure was then developed, but the final number of enumerators was only confirmed on the completion of the Enumeration District planning. Figure 4.1 illustrates the field staff structure, along with the number of field staff required for each role.

Figure 4.1 Northern Ireland Census 2011 Field Staff Structure



Census Office Field Operations and Regional Management Team

4.25 The Census field staff were managed and supported by a Field Operations and Regional Management Team based in the NICFC, which was in accommodation specifically secured for the operational phase of the Census. The Head of Field Force Operations in that team assumed the role of Census Regional Manager (CRM) and had direct line management responsibility for the Census Area Managers (CAMs). The CRM, who was a valuable interface between the CAMs and the rest of Census Office, monitored return rates and ensured that each CAM was responding appropriately to their evolving local situation. The CRM also helped CAMs to resolve technical enumeration queries and operational issues.

Census Area Managers

4.26 The field force was headed locally by 22 CAMs employed for 7 months prior to Census Day and approximately 2 months beyond. From September to December 2010, the CAMs' role was, in addition to familiarising themselves with the Census process, to: liaise with the local district councils to exchange knowledge; build effective relationships with community groups and representatives of hard to count groups and encourage their participation in the census; and, if possible, to work with the local media to promote the Census in their areas. Although these tasks were quite separate from the field operation itself, they were key to ensuring that the follow-up operation went smoothly.

4.27 From January 2011, the CAMs concentrated more on managing their field staff during the address check, delivery, follow-up and special enumeration activities. This work included the direct line management of approximately 11 CTCs. During the follow-up, CAMs used the QT system to monitor progress across their area. They were also responsible for resolving any local operational problems, supported by the Regional Management Team.

Census Team Co-ordinators

4.28 Some 233 CTCs were employed from 12 January to 24 May 2011. The CTC was the first-tier field manager, a multi-faceted role responsible for overseeing the operation within defined boundaries in their CAM's area. On average, they managed a team of 7-9 Census Enumerators.

4.29 CTCs made daily use of the QT system via laptop computers. They used the system to generate follow-up workloads for their enumerators and carried out frequent activations and deactivations of questionnaires and addresses to ensure local information remained up to date. Almost all of the CTCs also enumerated CEs in their areas.

Census Enumerators

4.30 Some 1,670 Census Enumerators were employed during the period 19 February to 20 May 2011.

4.31 Enumerators had a number of main tasks to fulfil both before and after Census Day. In the run up to Census Day, they were tasked with undertaking a complete address check of their fixed area of responsibility (an ED). This involved identifying addresses that were missing from the address register and noting those addresses from which a questionnaire was unlikely to be returned, for example, because the address was a vacant property or a non-residential establishment. Additionally, in this period, enumerators delivered questionnaires to new addresses and visited householders who had telephoned the census helpline in need of support. In rural parts of Fermanagh, where the Royal Mail postal service was not used due to issues with the address register, enumerators were tasked to hand deliver all the questionnaires in their EDs.

4.32 In the following phase, starting 11 days after Census Day, enumerators were responsible for making direct contact with householders who had not returned their census questionnaires. On making contact, they needed to: establish the reason for the non-return; answer queries; offer assistance; issue replacement or continuation questionnaires; confirm the number of households or usual residents there; and, if necessary, persuade householders to complete and return their questionnaires. To maximise the chances of making contact with householders at home, enumerators were required to make visits at different times of the day and on different days of the week.

Recruitment, Payment and Training of Field Staff

Recruitment

- 4.33 Carrying out the Census is a huge undertaking, as it involves every household in the country. In order to carry out this task, it was vital that the required number of temporary staff of the right calibre were employed.
- 4.34 Although the field staff hierarchy used in 2011 was broadly similar to that of 2001, the change in enumeration methodology from hand delivery of census questionnaires by enumerators to one of Post Out by Royal Mail, meant that significantly fewer enumerators were required compared with the 2001 Census (1,670 as opposed to 2,590).
- 4.35 Census Office considered a number of options for the recruitment service provision and opted to use the services of HRConnect, the NICS recruitment service provider, to administer and manage the majority of the recruitment process. The field staff requirement was finalised as 22 Census Area Managers (CAMs), 233 Census Team Co-ordinators (CTCs) and 1,670 Census Enumerators. Additionally, the Department of Finance and Personnel's Appointments and Marketing Branch ensured that all census recruitment and selection was carried out in accordance with current NICS Recruitment Policy and Procedures.
- 4.36 Competency based interview assessment was used to select CAMs and CTCs, while enumerators were selected using merit lists created from a bespoke online assessment test and their availability to carry out the duties throughout the operations period. A Candidate Information Booklet was prepared for each role, which: provided the applicant with detailed background information; outlined the duties and responsibilities of the post; set out the Terms and Conditions of Employment; and explained the criteria which would be used during the recruitment and selection process. HRConnect was responsible for the scheduling and the administration of all interviews (CAM & CTC) and Enumerator Registration and Assessment Events.
- 4.37 All vacancies were advertised in accordance with NICS recruitment policies, and advertisements were placed in local newspapers and online via the main Northern Ireland recruitment websites. Additionally, the enumerator posts were advertised on Facebook and in libraries, Post Offices and Job Centres.

- 4.38 Recruitment operations, particularly those pertaining to the CAM and CTC competitions, ran very smoothly. However, Census Office did have to extend the closing date of the CTC competition as it coincided with a traditional July holiday period in Northern Ireland. The overall recruitment objective was met for these roles.
- 4.39 The enumerator competition was somewhat more problematic and there were significant numbers of applicant withdrawals during the early stages of the competition. Despite re-advertising, Census Office was unable to recruit the required number of enumerators in certain parts of Northern Ireland. Additionally, the Enumerator Registration sessions coincided with a severe weather event, which affected virtually all of Northern Ireland for a number of weeks. This led to the cancellation and re-scheduling of some registration events and it is thought that this may have contributed, in part, to the fairly high numbers of 'no-shows'.
- 4.40 To overcome the shortfall in certain areas, enumerators were offered double workloads and subsequently appointed to undertake enumeration duties in two EDs. Some 98.4 per cent of staff remained in post for the duration of their contract. This retention rate was higher than anticipated, which was welcomed.

Payroll

- 4.41 In order to retain motivated field staff throughout the entire census process, it was vital that a robust Payroll System was in place to enable all field staff to be paid accurately and on time.
- 4.42 When the number and roles of field staff required was determined, Census Office consulted with the Department of Finance and Personnel's Human Resource branch (DFP HR) and the DFP Departmental Solicitors Office to determine Terms and Conditions of employment for the field. It was agreed that all temporary field staff would be employed as Northern Ireland Civil Servants, but under special (non-standard) Terms and Conditions. From a payroll perspective, the out-workings from this meant that:
- field staff would be employed on a fee pay basis;
 - appropriate expenses would be paid for carrying out census duties;
 - holiday entitlement would be calculated and rolled up in the total fee; and

- there would be no pension entitlement.

- 4.43 Census Office then considered a number of options for the 2011 payroll service provision. These included: outsourcing the service to a private contractor; undertaking the payroll in-house; and, as for recruitment, using the services of HRConnect, the NICS payroll provider. After due consideration, NISRA opted to use the services of HRConnect to administer the payroll process, interfacing as necessary with Census Office.
- 4.44 Although the decision was taken to use HRConnect, bespoke procedures for the payroll process had to be developed.
- 4.45 Following discussions with HRConnect, it was agreed that Census Office would assume responsibility for the calculation of the fee due to be paid to each member of field staff. HRConnect would calculate the relevant Tax and National Insurance deductions, arrange for payment into the relevant bank account and issue payslips to the temporary field staff. Additionally, Census Office obtained agreement from DFP to allow HRConnect to pay non-taxable expenses to field staff.
- 4.46 A task analysis was developed for each of the field staff grades, which helped to identify the anticipated number of hours that a member of the field staff would work throughout their period of employment. The following fees were set for each grade:
- CAM – £8,000 gross fee, based on approximately 575 hours work;
 - CTC – £3,000 gross fee, based on approximately 250 hours work; and
 - Enumerators – £750 gross fee, based on approximately 80 hours work.
- Additionally, reimbursement of travelling expenses was in line with the NICS mileage allowances and set at the standard rates. Other necessary expenses incurred were claimed, provided a receipt was produced. These included, for example, car parking and postage costs.
- 4.47 A Census Office based payroll team, headed by a manager with appropriate payroll experience, was put in place to prepare the input data to enable HRConnect to make the necessary pay calculations and expedite pay runs monthly.

4.48 The payroll team used information supplied by CAMs and CTCs on hours worked and expenses incurred to process pay and expenses claims. This information was provided to the payroll team, which undertook basic checks on the returns, before upload of the data to the census payroll portal. This information was then provided to HRConnect, which made appropriate adjustments for tax and National Insurance and provided a BACS service for the payment to field staff. Payments were made a month in arrears.

HRConnect provided the following payroll services:

- Issue of pay information to census employees monthly;
- Issue of P45s, as required;
- Liaison with the Census Payroll Team to resolve individual census staff member pay and expenses queries; and
- Issue of P60s to all field staff at the end of the 2010/11 financial year.

Field staff training

4.49 As with the 2001 Census, training for 2011 was delivered on a cascade basis. The key was to ensure that consistent and accurate learning was delivered to every recruited field staff member. The Census Office HQ Field Operations Team were responsible for developing the training strategy and all materials required to support it.

4.50 The field training strategy devised applied the following strategic principles:

- training was designed to complement and reinforce the field staff instructions;
- training was carried out on a 'cascade' basis – Census Office HQ staff trained CAMs, CAM teams trained CTCs and CAM and CTC teams trained enumerators;
- training was designed to provide a forum for discussion of specific local situations that could impact on enumeration;
- training utilised the most up to date and appropriate techniques to increase the effectiveness of the training without increasing the overall study time (for example, use of MS PowerPoint for presentations on CAM and CTC laptops and practical exercises on DVD);

- self study guides (with in-built tests) enabled field staff and managers to gauge their understanding of field processes and job related tasks and requirements;
- training for each field staff grade was tailored to reflect the actual tasks to be undertaken at each level;
- training (following a 'just-in-time' convention) took place as near as possible to operational activities in the field; and
- training was designed to allow for increased interaction between trainers and trainees.

4.51 The training packages devised for CAMs concentrated on aspects of field organisation and management, legal and employment issues, with specific training on publicity, community liaison and dealing with the media. The packages devised for CTCs related more to the detailed enumeration procedures, supervision of enumerators and use of their laptops and the QT. Enumerators' training focused, in the main, on the detailed enumeration procedures. All training materials were designed to enable them to be used by people with a minimum experience of delivering training. The materials were intended to complement the written instructions and to provide a forum to allow interaction between trainer and trainee. Additionally, two training DVDs were produced to assist with the delivery of training.

4.52 The full set of written instructions and training materials developed for each field staff grade is set out in Table 4.1. The material was developed initially for the 2007 Test, revised for the 2009 Rehearsal, and finalised for the 2011 Census. The instructions were supplemented, where necessary, to meet ad hoc issues arising.

Table 4.1 Field staff training materials

Material	CAM	CTC	Enumerator
CAM Handbook	✓		
CAM Operational Guidance	✓		
Laptop, Field and Reports User Guide	✓	✓	
CAM Diary	✓		
CTC Handbook	✓	✓	
CTC Operational Guidance	✓	✓	
CTC Diary		✓	
Enumerator Handbook	✓	✓	✓
Enumerator Operational Guidance	✓	✓	✓
Enumerator Diary			✓
Enumeration Address Check & Delivery Support Self Study	✓	✓	✓
Follow-up Self Study	✓	✓	✓
Enumeration Pocket Guide	✓	✓	✓
Enumeration Sample Pack for Training	✓	✓	✓

4.53 To ensure that the consistent message regarding roles and responsibilities was cascaded to all areas, Census Office staff attended training events, primarily in an observation role. In many cases, those staff were called upon to clarify field and operational queries.

Delivery of Questionnaires to Households

4.54 As noted in paragraph 4.6, there were two main methods of delivering 2011 Census questionnaires: the bulk were sent by post to households, and a minority were delivered by hand, for example, when a new address was

discovered, to certain parts of rural Fermanagh and to CEs. This latter process is described separately below.

- 4.55 The posting out of household questionnaires was outsourced to Royal Mail, which was responsible for ensuring their accurate and timely delivery. The contract was awarded jointly with ONS on 6 May 2009 and signed on 1 October 2009. Questionnaires were subsequently delivered to some 765,000 addresses in Northern Ireland.
- 4.56 Royal Mail collected the pre-addressed census questionnaires from the questionnaire print service provider and delivered these to relevant local Royal Mail sorting offices, which, in turn, arranged for their delivery to households in a one-week window (Monday 14 March – Saturday 19 March 2011), to ensure that the packs arrived at a minimum one week before Census Day, 27 March 2011.

Managing Post Out risks

- 4.57 The main potential risk to Post Out would have been industrial action by Royal Mail staff (as had occurred in 2001), so ONS and NISRA built robust contingency plans into the 2011 Census contract, including the delivery of questionnaire packs by Royal Mail's managers or agency workers. Royal Mail also guaranteed to keep ONS and NISRA fully informed of any industrial ballots taken by their unions and about any impact that these could have on the Post Out operation. However, no such industrial action was threatened during the 2011 operational phase.
- 4.58 To mitigate against the risk of fire or flood destroying the census questionnaires before they could be delivered, two prospective warehouse sites were assessed by Royal Mail. All census packs were transferred to heavy duty trolleys on arrival from the print service provider, making them quick and easy to move if required in an emergency.

Operational performance

- 4.59 The Post Out project successfully managed the logistics of collecting questionnaires from the print service provider and distribution of them to 765,000 households in Northern Ireland. All this happened in the agreed timescales. Some 95 per cent of the questionnaires were delivered within the first three days of the operation (by end of Wednesday 16 March) with the remaining 5 per cent delivered on Friday 18 March, given that no postal

deliveries were made on Thursday 17 March (the St Patrick's Day bank holiday in Northern Ireland).

'Undelivered As Addressed' questionnaires

- 4.60 'Undelivered As Addressed' (UAA) is the term Royal Mail uses for mail that is returned to the sender undelivered. There are several reasons why such mail may not be delivered: addressee gone away; address incomplete; address inaccessible; addressee unknown; refused; not called for; or no such address. Additionally, if an item of mail is marked 'return to sender' or similar by the recipient and put back in a post box, it is also treated as UAA.
- 4.61 In the 2009 Rehearsal, NISRA had checked a sample of addresses from which questionnaires had been returned as UAAs and had concluded that a small proportion of them were addresses to which, in fact, delivery of a questionnaire should have been possible. Therefore, to maximise coverage, procedures were put in place to check all UAA addresses.
- 4.62 In the period prior to delivery of the questionnaires, enumerators were tasked with undertaking an address check of their ED. The aim of the address check was primarily to validate the address list for the ED, listed in an Enumeration Record Book (ERB), by identifying each residential address and confirming that, if delivered, a questionnaire would be expected to be returned from that address. New addresses discovered by enumerators were added to the listing in the ERB. Additionally, enumerators were asked to identify those residential addresses, listed in the ERB, from which a questionnaire would not be expected to be returned (for example, a derelict or vacant property) and those addresses listed, that were not residential (for example, commercial property such as an office or shop). ERBs were then returned to CTCs for updating on the QT.
- 4.63 UAA questionnaires were returned to the NICFC, where staff there flagged the address on the QT. CTCs matched this QT information against what enumerators had recorded in their ERBs. In the case of a UAA where the enumerator had indicated that it was reasonable to expect a questionnaire to be returned from the address, the CTC activated a new replacement questionnaire for this address, which was given to the enumerator for hand delivery. In other cases, the address was deactivated on the QT.
- 4.64 This work was scheduled to be done between the end of Post Out (one week

before Census Day) and the start of follow-up (10 days afterwards). This timing enabled replacement questionnaires to be delivered close to Census Day, and addresses to be deactivated (where necessary) before non-response follow-up.

- 4.65 While it was difficult to predict how many UAAs there would be, the original estimate was 1 per cent, or around 7,500. In the end, there were around 40,000 UAAs, representing approximately 5 per cent of the questionnaires posted out. The main reasons for questionnaires being returned as UAAs were: 'can't find'; 'vacant'; 'addressee gone away'; and 'refused'.
- 4.66 A number of UAAs turned out to be valid addresses. Consequently it was deemed that the UAA check was invaluable for added assurance that households were not being missed and that the UAA process had been applied accurately.
- 4.67 In those areas of Fermanagh where hand delivery by enumerators was employed, questionnaires were collected from the print service provider and delivered to CTCs by a courier service provider. The questionnaires were distributed to enumerators who, in turn, arranged for their delivery to households during the period 10 March – 19 March 2011. Enumerators were instructed not to attempt to make contact with householders during this delivery phase rather they were only to undertake the address check and drop the pre-addressed questionnaire pack at the corresponding address.

Return of completed questionnaires

- 4.68 NISRA estimated that 70 per cent of the 765,000 questionnaires delivered would be returned directly by the public without intervention by ten days after Census Day, leaving the remainder to be followed up by field staff. It was expected that about 85 per cent would be sent back through the post and about 15 per cent via the internet. The majority of questionnaires collected by field staff as they visited households during follow-up would also be returned by post – unless enumerator collection had been specifically requested by a respondent.
- 4.69 The Post Back operation was the main method of returning completed census questionnaires. Post Back was outsourced to Royal Mail, and it had been agreed that the Post Back contract did not need to be tendered, since only Royal Mail could deliver this service.

4.70 Royal Mail was required to:

- securely collect, count, sort and receipt in Northern Ireland and deliver the mail in one seamless process to the UK Data Capture (UKDC) centre in Manchester in dedicated vehicles;
- take account of the lessons learned from the 2001 Census Post Back operation, such as the incidences of overflowing post boxes and the inability to track returned forms; and
- participate in the 2009 Rehearsal (October 2009) as an opportunity to test the new technology and processes before the main census.

4.71 Ensuring the confidentiality of census data at all times was critical to the Post Back process, as it was indeed for the whole of the census operation. A bespoke solution provided by Royal Mail included:

- keeping census questionnaire returns separate from main-stream mail (made easier by the distinctive colour and markings on the return envelope);
- reserving time on a dedicated sorting machine in the Northern Ireland Mail Centre in Mallusk to process census returns separately;
- using dedicated vehicles to take census mail to the UKDC, and setting up a consolidation centre near the site to enable a steady flow of deliveries; and
- using a Royal Mail flat-bed sorting machine (FSM). This machine could scan the census questionnaires' unique barcodes and count the returned questionnaires. The resulting file of data could promptly be uploaded into our QT system, and at the same time, the paper questionnaires were forwarded to the UKDC.

4.72 Although Census Day was 27 March 2011, NISRA accepted questionnaires before then. This gave respondents more flexibility about when they could respond, by helping those, for example, who would be away from home around Census Day. So completed returns could be posted back from 15 March (the day after delivery), and transported to the UKDC from 18 March. This also helped to spread the load on the postal services and at the UKDC, where questionnaires from England, Wales and Northern Ireland

could be returned at the same time. Deliveries of Northern Ireland questionnaires to the UKDC continued until 25 November 2011, after which they went direct to Census Office in Belfast.

Managing Post Back risks

- 4.73 Several issues from the 2001 Census needed to be addressed, including the over-flowing post boxes, as well as potential new risks for 2011. In the event of a major Royal Mail disaster in which the FSM became unavailable, all mail due to be sent to the Mallusk site would be re-directed to the next nearest site in England. Because there were 22 sites with this equipment, Royal Mail did not consider this a high risk. Indeed, all mail could be consolidated to just one FSM site if any major collection difficulties were to arise.
- 4.74 To mitigate against the risk of overflowing post boxes, Royal Mail increased its collections from heavily used 'social' posting points during peak census activity. These also included a Sunday collection. 'On demand' collections were also set up, using a response team established at each sorting office to react to reports from the public that a post box was full. In the end, this facility was not required in Northern Ireland.

Post Back operational performance

- 4.75 The Post Back project successfully managed the logistics of collecting questionnaires and delivering them to the UKDC. Royal Mail delivered more than half a million questionnaires from Northern Ireland to the UKDC.
- 4.76 There were some complex interfaces to manage in this part of the process, not least where and how the returned questionnaires would be receipted. Delivering large volumes of mail to the UKDC had to be carefully planned. In the event, the actual number of returns by post from Northern Ireland was more or less what was expected whereas the profile of returns was different to that expected.
- 4.77 Although the peak period for returns lasted as long as expected, volumes were higher than expected in the early stages, with 180,000 questionnaires returned before Census Day and a further 100,000 returns handled on 28 March – the day after Census Day. In contrast, the later period, during the follow-up process, saw much lower volumes than expected.

Non-response follow-up

- 4.78 The follow-up of non-responding households by field staff was an essential stage in ensuring the census met its overall targets. Success at follow-up would hinge on the ability to identify the non-responding households, to make contact with them, and to offer the appropriate support to secure a response.
- 4.79 Experience has shown that it is increasingly difficult to make contact with, and secure a response from, some households. As has been noted earlier, difficulties can be attributed to: an ageing population; growing numbers of one person households; a more mobile population; changing work patterns; increases in controlled access to properties; people being less willing to co-operate with surveys; growing numbers of migrants; and perhaps a less acquiescent society.
- 4.80 NISRA adapted the follow-up methodology to account for the following:
- Enumerators needed to visit only those addresses from which a completed questionnaire had not been received;
 - a QT system was developed to guide the effective deployment of staff (see paragraph 4.81).
- 4.81 The objective of the non-response follow-up was to improve return rates. The broad strategy and tactics used were to:
- develop clear field staff procedures and role-specific instructions; and
 - produce detailed follow-up lists that were regularly updated and could be printed off the QT by the CTCs as needed;
 - arrange additional publicity;
 - develop clear calling strategies;
 - have enumerators leave reminder cards in the event of being unable to make contact;
 - send reminder letters to non-responding addresses; and
 - use a 'Dummy' form for enumerators to capture basic information on unoccupied addresses, addresses that were second residences, or addresses where contact could not be made.

Follow-up procedures

- 4.82 The follow-up operation was divided into three phases covering four and a half weeks. Enumerators were issued with follow-up address lists, which detailed all those addresses from which a questionnaire had yet to be returned. During follow-up, enumerators visited non-responding households to encourage them to complete and return their questionnaire, deal with any concerns, explain the value of the census, or issue a replacement questionnaire if the original had been lost or damaged.
- 4.83 Throughout the follow-up period, the QT was continually updated with returned questionnaires. CTCs monitored these returns daily and were tasked to provide updates to their enumerators of addresses from which a questionnaire had been received to enable the enumerators to remove these addresses from their follow-up lists.
- 4.84 Follow-up Phase 1 lasted from 7 April to 13 April. During this phase, enumerators tried to make contact with all non-responding households in their ED. If contact was not made, enumerators left a reminder card at the address which informed the householder that a census questionnaire had not yet been received for the address and asked them to complete a return either online or by post.
- 4.85 Follow-up Phase 2 took place over the period from 16 April to 23 April, during which all non-responding households were revisited and, if no contact was made, a further reminder card was left at the address. Again the householder was informed that a census questionnaire had not yet been received for the address and asked them to complete a return either online or by post. Only this time, the card was more forceful, highlighting the compulsory nature of the census and the possibility of a fine.
- 4.86 Follow-up Phase 3 ran over the period between 24 April and 7 May. Again all non-responding households were revisited. This time, if no contact was made, a final reminder card was left at the address. The final reminder card instructed the household to submit a questionnaire, highlighting the compulsory nature of the census and the possibility of a fine. Additionally, at this stage, enumerators recorded some information for the address in the follow-up ERB by completing a placeholder questionnaire and left a replacement questionnaire.

Making contact

4.87 The best times to contact householders are generally late afternoons, evenings and at weekends. Enumerators were instructed not to try to make contact with householders on Sundays. A reasonable time was left between visits to the same address, with subsequent attempts being made on different days of the week and at different times of day.

Multi-occupancy and access to properties

4.88 Some areas have small concentrations of 'Houses of Multiple Occupancy' (HMOs). During the enumeration phase, field staff were provided with full instructions on how to deal with addresses that were HMOs, for example, issue additional household questionnaires.

4.89 Strategies were also devised for 'difficult to access' properties, such as flats with controlled access and residential accommodation above or behind non-residential accommodation.

4.90 During the 2009 Rehearsal, NISRA carried out field tests to ensure a clear understanding of potential accessibility issues. Detailed procedures were developed to cover what field staff needed to look out for, and possible methods of gaining entry. CAMs and CTCs were provided with area profiles that provided background information on areas where enumerators may find difficulties such as accessing secure apartment blocks.

Language issues

4.91 The inability of some residents to speak or write English would potentially be a major barrier to completing census questionnaires. A range of language assistance was set up through the public support facilities. In addition, field staff were equipped with a multi lingual card. This was shown to the householders to help identify their language. It provided the householder with details of the individual 'language line' telephone numbers they could contact for assistance or to request translation booklets.

Vacant properties, holiday and second homes

4.92 Any holiday or second home is, generally, less likely to be contacted successfully in the census, so areas with many of these properties risk having lower return rates. For these addresses, where a questionnaire was not returned, field staff again filled in 'Dummy' forms with enumerators

instructed to try not to treat second residences and holiday homes as vacant accommodation. This ensured that basic address information was captured for any property unlikely to be occupied during the follow-up period, or where no contact was made. In addition, reminder cards were left at these properties during follow-up. These highlighted the need for residents to complete a questionnaire, even if it was not their primary residence.

Reminder letters

4.93 Around ten days before the end of follow-up, some 60,000 reminder letters were sent from the NICFC to households that had not made a return. This provided a final and alternative cost effective way to reach householders to persuade them to complete their questionnaire.

Questionnaire Tracking

4.94 The introduction of Post Back in the 2001 Census had led to difficulties for the enumerators and Census Office knowing which addresses had or had not responded. The QT system was developed for the 2011 Census to solve this problem. By enabling accurate assessment of enumeration progress, it could be used to direct enumerators to addresses which had not responded.

4.95 The QT was developed as part of the procurement that also included the customised printing of questionnaires, the online data collection system, data capture and coding, and the provision of the census telephone helpline. The QT's core components were simple and comprised:

- the address register;
- an inventory of questionnaires; and
- an inventory of 'fulfilments' (the term used to refer to the issuing of replacement or additional questionnaires requested by members of the public through the telephone helpline).

4.96 The QT system tracked the unique barcode printed on every questionnaire issued. It provided Census Office HQ and the census field managers with an up-to-date, daily picture of the status of the operation in their individual areas. This information was used to alert field staff promptly and accurately to follow-up non-responders to improve return rates.

- 4.97 The QT went live on 28 February 2011 and was available throughout the field operation. It provided three types of reports for field managers: operational reports; management reports and reference reports. QT reports were produced each morning during field operations; they showed new information and updates to addresses. The reports reflected the activities carried out by all users on the previous day, providing a wealth of almost real-time management information that was available at the fingertips of field managers and Census Office HQ. The system proved invaluable for a number of operations set out below.
- 4.98 *Underpinning the follow-up operation.* Each address on the address register file was allocated a pre-addressed questionnaire with an individual barcode associated with it. The same individual barcode was printed on the front of the census questionnaire. The addresses and barcodes were loaded into the QT system and used to identify and track each individual questionnaire.
- 4.99 *Enabling census helpline staff to direct calls for help.* The QT supported requests for field staff to contact or visit householders needing help with their returns.
- 4.100 *Monitoring daily progress.* Census Office HQ and CAMs could access a range of field reports for an up to date picture of an area. The QT held the expected return rate for each ED, so managers could monitor progress towards the target rate.
- 4.101 *Receipting forms in the field using hand held barcode scanners.* This was used where a householder handed their completed questionnaire to an enumerator and requested that it not be returned via the postal service. The questionnaire could be quickly receipted, by a CTC, to prevent it from appearing on the follow-up worksheets.
- 4.102 *Updating the QT regularly.* CTCs could, for example, deactivate an address for a derelict or demolished building, add new addresses, and link questionnaires to addresses when new or additional ones were issued.
- 4.103 Once a questionnaire from an address had been receipted, that address would not appear on any future follow-up worksheet and no more follow-up visits would take place.

4.104 The QT was also used in a number of other census processes, notably:

- NICFC staff recorded replacement and additional questionnaires or other materials (such as translation booklets) as they were sent out in response to requests via the telephone helpline or online help;
- the data capture team accessed reports on the processing of questionnaires;
- Royal Mail uploaded the daily files of questionnaires receipted on its FSMs; and
- individuals accessing their online census questionnaire (using a unique internet access code printed on their paper questionnaire) were logged by the QT system.

Special Enumeration

4.105 In the 2011 Census, the great majority of people in Northern Ireland would be counted through the approaches described above. However, there are specific population groups for whom alternative arrangements are necessary in order to count them effectively in a census. For these, special enumeration procedures were adopted.

Communal Establishments

4.106 The majority of the population covered by these alternative arrangements live in Communal Establishments (CEs). These comprise a range of managed accommodation units, such as prisons, military bases, university halls of residence, care homes, hospitals and large hotels. The key factor determining who was to be included or excluded was that, if an individual had already spent, or would be expected to spend, six months or more in a CE, then for census purposes this counted as their place of usual residence. Other accommodation sites included in special enumeration processes related to groups of non-permanent accommodation units, such as caravan parks. Where accommodation units in such sites contained usual residents, they were enumerated using a normal household census questionnaire. The special enumeration procedure was required to establish the length of their usual residence as the majority of these units are used only as temporary or holiday accommodation.

Special population groups

- 4.107 Special population groups are those who have been traditionally hard to count and so may need a different enumeration procedure. They include vulnerable groups, some travellers and rough sleepers. Achieving a good census response from these groups was vital. Typically CEs accommodate higher numbers of harder-to-count populations, such as young adults, older people or more transient people. They also include a high proportion of vulnerable groups, who may find it particularly difficult to participate, but whose data could be used to inform social policy. In addition, there are many large CEs, such as university halls of residence and military bases, whose residents represent a significant proportion of a particular local community.
- 4.108 In the 2001 Census, CEs were enumerated either by Census Office staff (large CEs with more than 100 people and secure accommodation, such as prisons and military establishments) or by the enumerator allocated to that area. Evaluation of the 2001 Census highlighted that a lack of knowledge and training on the relatively few CEs encountered by enumerators sometimes led to quality issues. This resulted in Census Office removing this function from enumerators and giving it to CTCs. However, Census Office HQ retained responsibility for the large CEs and secure accommodation. CTCs were given specific training on the execution of special enumeration.

Special enumeration procedures

- 4.109 Developing special enumeration procedures was a complex process, because different measures were needed for different types of establishment. Personal contact remained the preferred method for enumerating CEs (as opposed to posting out questionnaires). This allowed Census Office HQ and CTCs to support CE managers who may be responsible for large numbers of residents. In addition, these staff were able to guide CE managers through the often complex definitions on who to include. The overall strategy was, therefore, to provide well trained staff for special enumeration that were responsible for the hand delivery and collection of questionnaires and for providing support to the CE managers.

General communal establishments

4.110 The majority of CEs fell into this group, which includes hotels, care homes, hospitals, hostels and religious establishments. The enumeration procedures were fairly straightforward. A CTC or member of staff from Census Office HQ liaised with the CE manager and hand delivered and later collected the relevant number of questionnaires. They also provided the CE manager with any support they needed. The number of questionnaires used depended on the number of usual residents. Hand delivery to CEs started on 14 March and continued up to Census weekend. Arrangements were made to collect the completed questionnaires after Census Day. Completed questionnaires were receipted on the QT by the CTC or member of the NICFC team. Thereafter, arrangements were put in place whereby the completed questionnaires were collected from the CTCs and Census Office HQ and shipped by secure courier to the UKDC in Manchester.

University halls of residence

4.111 Students are one of the hardest to count groups and must be enumerated at their term time address. Developing the procedures for this group required liaison between Census Office HQ staff and the university accommodation managers. The overall approach was again to hand deliver and collect questionnaires using Census Office HQ staff. Individual questionnaires were delivered to students' rooms by university staff. Individual questionnaires could either be posted back or left at a central point by the students for eventual collection by Census Office HQ staff. Alternatively, students were also able to submit their individual returns online.

Secure accommodation

4.112 From a census perspective, secure accommodation is classed as establishments where there is either an element of security in gaining access to residents or the addresses are of a sensitive nature, or both. Included in this group are all military bases, prisons and other detention accommodation. In terms of military bases, only residential accommodation located inside perimeters of bases was classed as secure accommodation. Any military accommodation outside the base perimeter was enumerated in the same way as other households.

- 4.113 Census Office staff began negotiations with the Ministry of Defence (MoD), the Northern Ireland Prison Service (NIPS), the Police Service for Northern Ireland (PSNI) and the Northern Ireland Office (NIO) early in 2010 to develop the partnerships needed to make the enumeration of military bases and detention accommodation successful. Because of the secure and/or sensitive nature of these establishments, it was agreed that hand delivery and hand collection of the questionnaires would be carried out by staff from the relevant security service.
- 4.114 Secure accommodation is also associated with a range of complex definitions on who should be included as a usual resident. For example, military personnel away on operations with no family address needed to have questionnaires completed for them by proxy at their home base and prisoners on remand needed to have questionnaires completed for them at their home address.
- 4.115 Census Office staff worked with the various agencies to produce written census instructions for base commanders and prison governors. Once agreed, these organisations arranged for distribution in their establishments.

Irish Traveller sites

- 4.116 For Irish Traveller sites, field staff liaised with their representative groups and with local authorities to develop suitable procedures. CTCs were required to make prior contact with site managers, who often helped with the enumeration.

Rough sleepers

- 4.117 In 2001, rough sleepers had been enumerated through field staff conducting a count on census night in locations where there were known pockets of rough sleepers. There were concerns over the difficulty of persuading temporary field staff who were not used to working with such a vulnerable group to conduct such a specialist count. Discussions with many organisations working with this target group concluded that, for the 2011 Census, it would be feasible to identify and count genuine rough sleepers at day centres for the homeless; other homeless people could be enumerated at homeless hostels and similar accommodation. Census Office HQ staff made prior contact with hostels for the homeless to build relationships and make arrangements for the enumeration.

The outcome

- 4.118 The special enumeration work was found to be achievable in the timescales given. Creating a specialised team within Census Office HQ was extremely effective as they could receive more concentrated and role-specific training, and so were much more aware of what to do at different establishments.
- 4.119 In the field, not all CTC staff were involved in the enumeration of CEs, and the planning of special enumeration workloads was therefore difficult because the dispersal of CEs across the country did not always follow the pattern of high concentrations of households. For example, some coastal towns had a high number of hotels and relatively little housing. This led to a few CTCs having a lot of special enumeration activity to manage, while many had none at all. Attempts were made to balance this out by giving some CTCs in areas around coastal holiday towns fewer EDs to manage, but this was difficult to achieve. It was concluded, in hindsight, that it may have been better to increase the size of the CE enumeration team at Census Office HQ and give it responsibility for the enumeration of all CEs across Northern Ireland. This should be given further consideration for any future census.

Online Completion

- 4.120 For the first time in Northern Ireland, the 2011 Census offered households and individuals the opportunity to complete their return online, as an alternative to completing the traditional paper questionnaire. Census Office matched its target of around 15 per cent of all returns being made through its secure IDC system.
- 4.121 The online service has been regarded as great success, providing a number of benefits to the data collection operation:
- it met both the public's and census stakeholders' expectations for an online questionnaire;
 - it provided an environment in which the security of the census information could be robustly protected;
 - it improved overall responses by offering an alternative to individuals who may have been less inclined to complete a paper questionnaire; and

- it avoided the need to scan and capture a significant proportion of the returns, thereby speeding up, and reducing the cost of the data processing operation.

But most importantly it was easy to use, improved data quality by prompting for missing responses, and limited the scope for incorrect responses. It did not fail at any time during the process, and there were no security breaches.

4.122 Security was the highest priority requirement in developing the online system. Confidentiality of personal information is a cornerstone of the assurances given to the public, and any breach of data security would not be tolerated. The service was hosted in a secure environment with multiple layers of security built into the design. Firewalls, intrusion detection systems and distributed denial of service protection ensured that the responses provided by the respondent were kept confidential throughout capture, storage and processing.

Usability

4.123 In designing the online questionnaire, usability – how easy the system would be to use – was a very important requirement. It would impact on the experience of using the system, and therefore on a person's willingness to take part and give accurate answers. The online questionnaire was therefore designed to maximise usability, although of course the question content had to be the same as the paper questionnaire. Therefore, to avoid responses being biased by the chosen completion method, the question text was not changed; respondents had to interpret the questions in the same way whether online or on paper. Furthermore to avoid confusion, and to reinforce the census brand, the online questionnaire was designed to look like the paper questionnaire.

4.124 Although the question text could not be changed, the accompanying instructions had to be amended. For example, instructions to 'write in' or 'tick all that apply' were not necessarily appropriate to online completion. If the respondent had not provided the information that allowed the service to route them automatically, the routing instruction was phrased as a question. Additional instructions were also used where the respondent was required to review all available answers.

4.125 Furthermore, the questionnaire needed to be intuitive. It needed to make the online experience as painless as possible. If it did not, there was a risk that people would abandon the attempt, and that their commitment to engaging with the census – whether online or on paper – would be affected.

4.126 Respondents needed to:

- be able to move to the next question, and review previous answers, easily;
- be able to see, at a glance, how far through the questionnaire they had progressed;
- be able to stop, and resume, at any time;
- be told if their response was not as expected, and told what was expected; and
- be routed past questions that were not relevant.

4.127 The page was designed so that all questions could be seen, answered and saved without scrolling. For this reason, most pages only displayed one or two questions.

Types of online questionnaire

4.128 All households were required to return a household questionnaire. Additionally, respondents who were resident in CEs, for example, retirement homes, and individuals wishing, for reasons of privacy, to make a return separately to the main household return, could complete an Individual questionnaire. Therefore, the questionnaires available for completion online were:

- Northern Ireland Household questionnaire; and
- Northern Ireland Individual questionnaire.

4.129 Household Continuation questionnaires were not required for online completion, as the system accepted up to 30 residents and up to nine visitors in each household. (Households exceeding 30 persons required a field visit to determine whether or not they were CEs.)

4.130 CE managers could not complete the CE questionnaire online, although residents of CEs could complete their Individual questionnaires online if they so wished.

Validation

4.131 To help respondents guard against making mistakes, responses were validated to ensure that they were within the required parameters (for example, that a letter had not been entered where a number was expected). Under the provisions of the census legislation, every household is required to make a census return, and every question is required to be answered (with the exception of the question on religion). A balance had to be met whereby the legal requirements of completion could be met through the online response, and yet prevent annoying the respondent to the extent of risking abandonment.

4.132 It was decided, therefore, to use 'hard' validation, that is, the respondent was unable to progress to the next question until a valid answer had been provided, only on those questions that referred to the number of residents and/or visitors. The majority of questions were 'soft' validated, where an error message was displayed if the respondent did not provide an answer. ('Soft' validation served as a warning that a response was missing, inconsistent or invalid, but did not stop the respondent from continuing.) A check run after clicking 'submit' alerted the respondent to any questions that had not been answered.

The online response

4.133 The online questionnaire went live on Friday 4 March 2011 and was available until Sunday 22 May 2011. As expected, Census Day itself (27 March) had the highest volume of daily returns with 20,000 household returns submitted on that day.

4.134 Apart from Census Day, the daily response volumes throughout each week always rose to a peak on a Monday (from 21 March to 22 May), although there was a notable influence on response volumes from a number of external activities:

- there was an increase from Saturday 19 March to Census Day, which coincided with the change in the media campaign to the message 'Fill it in now'; and

- there was an increase on Thursday 7 April, which coincided with the start of enumerators visiting households that had not responded.

4.135 The vast majority of respondents took between 10 to 20 minutes to complete the online questionnaire. This varied, of course, according to the number of people in the household. The average time taken to complete the questionnaire was 22 minutes. This was consistent with analysis from the 2009 Rehearsal that had showed that the average time for completion was about 30 minutes for a four-person household, with adults' questions taking about 10 minutes each and children's questions taking about 6 minutes each.

Online help and support

4.136 In addition to the online completion facility, an online help system was available on the Northern Ireland 2011 Census website. 'My Census' proved to be the most popular area of the website. It provided general information about the Census, and information about census questions, and this was also where answers were provided to key questions that the public might have about the Census. Help with answering specific questions, such as who to include on the questionnaire, how to obtain replacement or additional questionnaires or other material, such as large print versions of the questionnaires, Braille booklets, translations of the questionnaire and translation leaflets, proved to be very popular. The online help system was also used by Contact Centre staff when responding to queries from the public, thereby maintaining the consistency in the detail of the information provided.

4.137 The online help website received some 61,000 visits from Northern Ireland residents and is thought to have reduced the potential volume of calls to the Contact Centre.

4.138 The Contact Centre itself, outsourced to a specialist service provider Broadcasting Support Services (BSS), handled around 40,000 telephone calls from Northern Ireland between 4 March and 15 May.

4.139 The centre was live from 8am to 8pm each week day and over the Census weekend, and from 9am to 4pm during all other weekends, and was supported by an IVR system (provided by Cable & Wireless), which was available 24 hours each day for the same period.

4.140 In addition, Census Office HQ staff were called upon to assist with answering email queries and respond to the more challenging queries that could not be handled by the Contact Centre itself. The issuing of reminder letters to households that had not returned a questionnaire generated a large amount of correspondence. The reminder letter acknowledged that some recipients may already have returned the Census questionnaire and assured such people that they could ignore the reminder letter. Despite this, those people who had in fact returned their questionnaire yet had been sent a reminder were either worried that their questionnaire had not been received or annoyed at being followed-up.

Community Liaison and Ensuring Full Participation in the Census

4.141 One of the biggest challenges to overcome in the 2011 Census was reaching population groups that were traditionally undercounted – the so-called ‘hard to count’. Research into the types of people missed in the 2001 Census, changing demographic profiles, and the nature of assistance that particular population sub-groups needed in order to ensure full participation in the Census, helped inform the type of initiatives needed and the way in which they were implemented in order to optimise their effectiveness.

4.142 Accordingly, the 2011 Census built on the positive initiatives that were successfully deployed in the 2001 Census to ensure that the 2011 Census was equally accessible to everyone in Northern Ireland, irrespective of their circumstances.

4.143 The 2011 Census Community Liaison Initiative (see paragraphs 2.38-2.42) built on this. The Census questionnaire and all accompanying information leaflets made it clear to the general public how they could access help with the completion of their Census questionnaire. For example, the general public had access to a dedicated Contact Centre and were able to speak direct to personnel specifically trained to assist them on Census matters and, if necessary, arrange for a member of the field staff to provide them with assistance at their own home. Such key messages were also augmented through a tailored publicity and media campaign in the run up to and during the Census operation. Specific objectives of the 2011 initiative were to:

- remind the general public of their legal obligation to complete their Census questionnaire;

- encourage participation in the Census by actively publicising the Census and underlining its important use and value;
- recognise the difficulties that certain population groups may experience in seeking to participate in the Census and put the necessary support mechanisms in place to ensure that the 2011 Census would be equally accessible to everyone in Northern Ireland, irrespective of their circumstances;
- ensure the general public were informed about the tailored assistance available with completing their Census questionnaire and how to access it; and
- raise awareness of the field staff role and encourage all population groups to apply for the field staff positions.

4.144 The Community Liaison Initiative informed the development of effective strategies to target these groups, to ensure that no community or individual was disenfranchised. Additionally, the Community Liaison Initiative sought to help provide field staff with information, guidance and support at the local area level.

4.145 Arrangements were made to enable blind or partially sighted people and non-English speakers to make a census return. This included the provision, on request, of a copy of the census questions and the accompanying explanatory material in:

- Braille, large print and audio/visual formats; and
- a range of other language versions.

Additionally, an 'Easy Read' version of the information leaflet was produced to assist those with learning difficulties.

4.146 Explanatory leaflets and translations of census questions (also available online) produced in a number of languages to assist individuals whose first language was not English or who wished to read census questions in another language. Special assistance was available to anyone who had difficulty completing a census questionnaire, particularly through language difficulties or infirmity. Field staff had access to translation services to assist those who had difficulty with, or could not speak, English.

Enforcing the Legal Requirement to Complete a Census Return

- 4.147 The value of the Census, compared to any other statistical data source, is that it should aim to cover the entire population without exception. It is, therefore, necessary, in order to emphasise the importance of obtaining a response from all households, to continue to adopt a clear policy of prosecuting offenders.
- 4.148 In all cases, whether response to the Census was by postal return, online, or exceptionally by doorstep collection, the statutory obligation to make a return was not discharged until a completed questionnaire was received centrally or by local field staff. The statutory requirement to make a return rests at all times with the householder (or joint householder) or an individual making an individual return. Persons refusing to comply with the statutory requirement to make a census return were liable to prosecution and a fine, the maximum level of which is currently £1,000.
- 4.149 Where householders claimed, either legitimately or otherwise, that a completed questionnaire had already been posted back, Census Office (through the QT system) could verify this and issue replacement questionnaires where necessary if there was no record of a return having been made. Refusal to complete a questionnaire in these circumstances could have attracted the same penalty.
- 4.150 Reflecting the onerous nature of conducting formal interviews under caution as required by 'The Police and Criminal Evidence (Northern Ireland) Order 1989: Code of Practice'²⁶, CAMs were trained to follow-up cases where there was a clear indication of a householder's refusal to make a return. In this way, evidence could be gathered that was sufficiently robust to satisfy the courts if prosecution action was to be taken.
- 4.151 Census Office adopted a policy of supporting and encouraging field staff to press for compliance from householders and other prescribed responsible persons. When a refusal was encountered, field staff tried to convert to compliance. In the event that compliance was not achieved, an investigation process was invoked which could have led to prosecution of a refuser for non-compliance by the Northern Ireland Public Prosecution Service (PPS).

²⁶ 'The Police and Criminal Evidence (Northern Ireland) Order 1989: Code of Practice' is available from: <http://www.legislation.gov.uk/nisr/2012/376/made>

- 4.152 The main objective of the non-compliance process was to persuade the few people who refused to comply with the legislation and complete a questionnaire to do so. If this was not possible, the objective was to gather robust evidence to ensure a successful prosecution. At any point during the non-compliance process, if a person changed their mind and satisfactorily completed a census questionnaire, no further legal action was pursued, and their case was withdrawn and closed. If prosecution was successful, individuals were liable to receive a criminal record and a fine of up to £1,000. The actual amount of the fine imposed was at the discretion of the Magistrate or Judge within the scales set out in 'The Fines and Penalties (Northern Ireland) Order 1984'²⁷.
- 4.153 In the course of conducting non-response follow-up visits, field staff encountered 284 households where a householder explicitly refused to complete a Census return. Census Office instigated formal non-compliance procedures for these cases and enumerators were asked to complete a non-compliance report for each instance. These reports were analysed by the Census Office HQ staff, who decided to continue non-compliance activity for 244 of the original cases. A further 33 cases were closed, as it was felt that it would be inappropriate for Census Office to pursue these cases, as there was evidence of mitigation such as old age/illness. A further 7 cases were closed because of inaccuracies in the information provided in the non-compliance report.
- 4.154 CAMs undertook the initial rounds of non-compliance follow-up activity. Follow-up activity work entailed making a number of visits to the relevant non-responders. Staff were tasked to make up to 4 visits to an individual address in order to attempt to make contact with the householder. In some cases, there is evidence of staff making more than 4 attempts.
- 4.155 The primary objective of these follow-up visits was to encourage the non-respondents to make a Census return. From this perspective, the overall exercise was successful and led eventually to the return of 207 completed Census questionnaires (that is, 85 per cent of those followed-up). The visits also provided evidence enabling the non-compliance team to close a further 13 cases, for example: a new resident at the address; the address now vacant; address now commercial; or where the householder claimed to have

²⁷ 'The Fines and Penalties (Northern Ireland) Order 1984' is available from: <http://www.legislation.gov.uk/nisi/1984/703/contents>

already posted the questionnaire back. Where there was no contact after at least 4 visits, the case was referred back to Census Office HQ and closed.

- 4.156 For the remaining cases where there was still a refusal to complete a return, the objective of non-compliance follow-up changed; there was now a need to establish the identity of the non-respondent to move to the next phase of the process, namely to conduct an interview-under-caution and send prepared papers through to the PPS.
- 4.157 The main difficulty encountered during this phase was the inability of staff to formally identify non-respondents, who seemed to know their legal position and, in all cases but one were not willing to divulge their name or personal details to the field staff. To help with this process, the non-compliance team examined the public part of the Electoral register to try to identify if there was an elector registered at the address. In cases where there was a name listed, the name was recorded. These names were used at a further non-compliance visit by the field staff to attempt to encourage the non-responder to confirm their identity. However, in all 11 such cases, non-responders would not confirm their identity.
- 4.158 Field staff managed to secure an interview-under-caution in one case, but the case was not pursued as the 6 month statutory bar date had passed and the case was not presented to the PPS for prosecution consideration. At the end of the non-compliance phase, all the evidence on outstanding cases was examined and it was concluded insufficient to proceed. Additionally, it was thought that it was unlikely that any bespoke exercise, instigated at that stage, would have yielded anything more successful than what had been undertaken to that date.

Publicity

- 4.159 While every household and each resident in a communal establishment in Northern Ireland is obliged by law to make a census return, it would be impossible to carry out a census without the co-operation of the public. The three UK census-taking authorities took forward a common approach to publicity, tailored to local needs. In Northern Ireland, specialised support for the 2011 Census publicity was procured locally.
- 4.160 The publicity campaign focused on explaining the purpose and value of the Census, to encourage the public to return completed questionnaires and to ensure that they knew when and how to do so, to give assurances about

confidentiality and data security, and to deal with other particular matters of public concern. Reminders were also given about the legal requirement to complete a Census questionnaire.

4.161 The prime objectives of a phased national and local publicity campaign were to:

- *educate* – by increasing the awareness and understanding about the 2011 Census among the general public, in key geographic areas and among hard-to-count groups;
- *enlist* – by publicising and supporting the recruitment of field staff, and informing the public (particularly in hard-to-count areas and among hard-to-count groups) that they were required to participate;
- *engage* – by publicising and supporting the delivery, completion and return of Census questionnaires from the general public and hard-to-count groups, and giving clear assurances about confidentiality and security;
- *enforce* – by ensuring that as many people as possible, from all population groups, were aware of the legal obligations to complete and return their Census questionnaires; and
- *explain* – the results and promote the value of the 2011 Census.

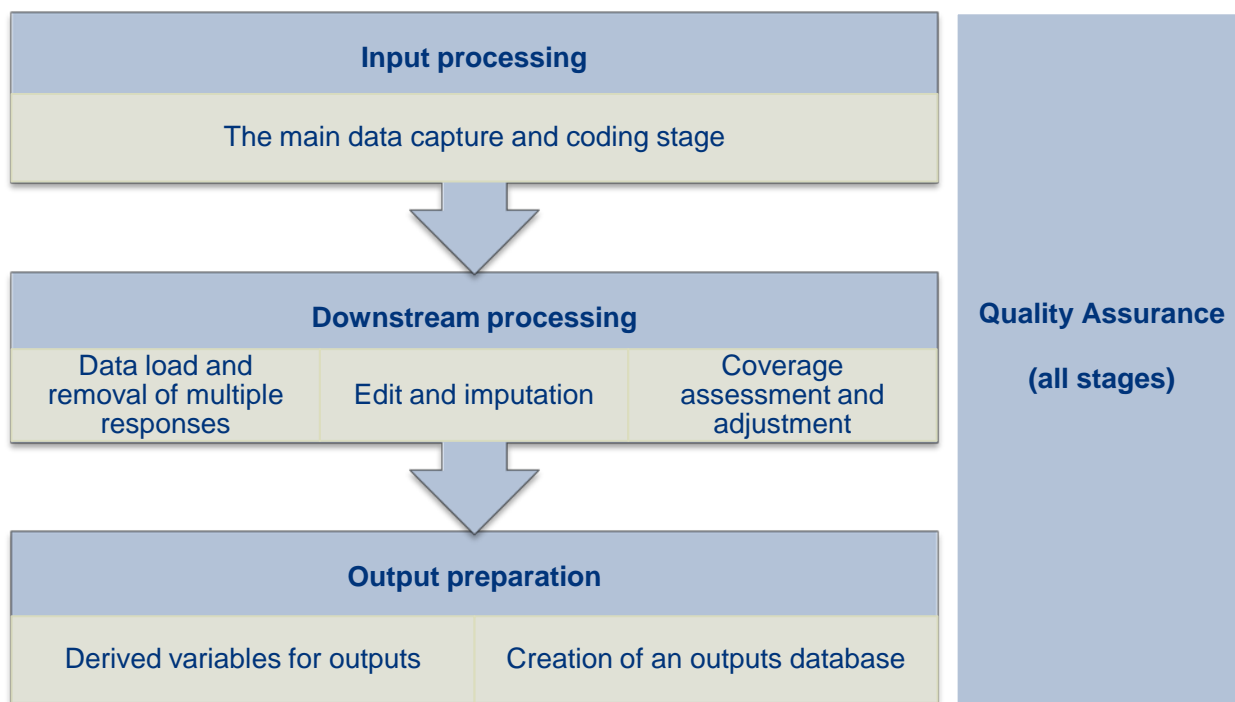
4.162 Publicity increased as Census Day approached. In particular, a leaflet drop happened a few weeks in advance of Census Day, informing the public of how their Census questionnaire would be delivered. An explanatory leaflet was then delivered with each Census questionnaire, at least one week prior to Census Day. Just after Census Day, a further leaflet drop reminded non-responders of their duty to make a census return. A Contact Centre was established to provide a telephone helpline, translation services for non-English speakers and to answer queries from the public while the Census was being taken. In addition, an online help website was provided during the 2011 Census operational periods.

5 Data Processing and Quality Assurance

Data Processing

- 5.1 It is recognised that the investment of time and resources in a census is only justified if the results are made accessible to users speedily and in a clear and usable form. The innovative and technological advancements tried and tested in the 2001 Census were harnessed and built upon in the design for 2011. This was to ensure the delivery of a successful census in Northern Ireland in 2011 with improvements in accuracy, timeliness, accessibility and user-friendliness of published outputs.
- 5.2 As with previous censuses, the 2011 Census was processed in three main stages. Input processing (which comprises the main data capture and coding stage), ‘downstream’ processing (which encompasses the edit and imputation stage conducted in parallel with coverage assessment and adjustment and statistical disclosure processes). Then output processing (the creation of statistical tables and other products from an outputs database, and the dissemination of these products to users). Quality Assurance was an integral part of all the processing done and was carried out at each stage, see Figure 5.1.

Figure 5.1 2011 Census Processing



5.3 The vast amount of information to be processed once the completed census questionnaires have been returned – estimated to have been around 50 million output tabulation cells in 2001 in Northern Ireland – and the short time available to do it, has traditionally demanded the employment of a large number of temporary clerical staff, and a computer processing system that has been fully tested to avoid errors, breakdowns and delays. Prior to 2001, census questionnaires had always been processed in-house, but following the 1997 Census Test it was decided that better value for money could be obtained from contracting-out the main scanning, data capture and coding services for the 2001 Census. A similar outsourcing approach was adopted for the processing of the 2011 Census data (see paragraphs 2.43-2.50).

Input Processing

Scanning and data capture

5.4 In order to produce outputs from the census, it is necessary to capture all of the responses provided on the questionnaires, convert these responses into coded data and clean the coded data so that the outputs to be produced are of a high quality. A series of processes was implemented to capture and code all of the ticks and text on the questionnaires.

5.5 Targets were set to ensure that the captured and coded data were of sufficiently high quality. The minimum required level of accuracy for capture and coding varied by field type, depending on the complexity of the data in the field. The captured and coded data underwent a series of statistical processes before outputs were produced from the data. Before this happened, the data needed to be cleaned to ensure they were in the correct format required for the statistical processes.

5.6 All the ticks and text on the paper census questionnaires were captured using a data capture process consisting of four components:

- (1) *Scanning* – to obtain images of the questionnaires;
- (2) *Image checking* – to check the quality of the images produced from scanning and to prepare them for capture;
- (3) *Recognition* – to automatically capture the data from the questionnaires; and
- (4) *Keying* – to manually capture the fields that could not be recognised automatically with sufficiently high accuracy.

- 5.7 The text responses provided by people on both paper and online were converted into coded data, using a coding process consisting of three components:
- (1) *Automatic coding* – the first step for all responses was to attempt to match them to the appropriate reference data and assign a code automatically;
 - (2) *Frontline coding* – responses that couldn't be automatically coded were assigned to a team of coders who attempted to code the response using defined business rules; and
 - (3) *Expert coding* – responses that couldn't be coded at frontline coding were referred to another team of coders, who had additional reference materials available to code the responses.
- 5.8 Questionnaire processing began by scanning the forms and capturing the data using optical character recognition. At the data capture stage, complex coding was used to assign numerical values to written text and tick box responses. This involved the use of coding rules and standardised national coding frames, such as SIC2007 (Standard Industrial Classification 2007)²⁸ and SOC2010 (Standard Occupational Classification 2010)²⁹, which allow data to be easily compared between different sources.

Downstream Processing (Edit, Imputation and Adjustment)

- 5.9 The Downstream Processing (DSP) project aim was to provide a set of IT systems that would provide the processing capability to carry out the downstream processing of all 2011 Census data. The project was also responsible for the live running of the data through the downstream process and the provision of the operational support during live running.

²⁸ 'Standard Industrial Classification 2007 (SIC2007)' is available from:
<http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html>

²⁹ 'Standard Occupational Classification 2010 (SOC2010)' is available from:
<http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/soc2010/index.html>

Data load and removal of multiple responses

5.10 Once the data had been captured and coded, they were loaded into a database and validated to ensure that the values for each question were within the ranges specified in the relevant coding frame. Next, duplicate responses were removed. These occurred when a household submitted more than one questionnaire, for example, both on paper and by internet, or recorded the same person more than once. Invalid responses were also removed, for example, dust on the questionnaires may have been captured as responses, respondents may have crossed through pages that did not apply to their household with the lines being captured as responses, or respondents may have accidentally skipped pages, completing their response over two different person records.

Edit and imputation

5.11 As with any self-completion questionnaires, respondents to the census sometimes made mistakes when recording their answers. This resulted in missing data or invalid responses that were inconsistent with other values on the questionnaire, for example, where a person gave their age as five and said they had a university degree. The Census Offices, therefore, developed an edit and imputation strategy to correct inconsistencies and estimate missing data, while preserving the relationships between census characteristics. The process, therefore, aimed to address:

- *item non-response* – all responses that were missing or not valid, including, multi-ticks, out-of-range values and partially answered responses (for example, occupation and industry, which were collected in multiple fields); and
- *inconsistencies* – complete and valid responses that did not make sense in relation to other responses on the questionnaire, auxiliary information or definitions. These were detected with pre-defined edit rule checks that compared values in different items and were also referred to as edit failures.

5.12 After an appropriate evaluation process, the Census Edit and Imputation System (CANCEIS), developed by Statistics Canada specifically to impute census data, was selected as the imputation system for the 2011 Census. It could not only apply joint imputation, using a single-donor household for all members of a failed household, but also simultaneously impute for both non-

response and inconsistencies. The consistency editing, based on edit rules, could identify combinations of values that were not allowed and mark these for imputation, as well as ensuring that all imputed values satisfied the edit constraints.

5.13 The processes leading up to item edit and imputation are listed in Figure 5.2.

Figure 5.2 Processes leading up to item edit and imputation



The primary objectives of the 2011 item editing and imputation strategy were to produce a complete and consistent database, and to adjust for non-response bias by estimating the non-responses.

5.14 The following three key principles were adhered to during edit and imputation:

- (1) all missing data (except the voluntary question religion) would be imputed to provide a complete and consistent database;
- (2) the number of changes to inconsistent data would be minimised; and
- (3) any changes made to observed data would not result in a loss of quality of the data.

5.15 Overall, the project was successful in meeting its main objectives and aims. A complete and consistent database was achieved with very few issues identified and there was a measurable improvement on the performance of the 2001 system (for example, by reducing the overall processing time and achieving a higher rate of joint imputation).

5.16 Generally, the project ran smoothly, with development and implementation occurring simultaneously in the last two years before census. A full report on the 2011 Census Item Edit and Imputation Process³⁰ is available on the ONS website.

³⁰ '2011 Census Item Edit and Imputation Process' is available from: <http://www.ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-user-guide/quality-and-methods/quality/quality-measures/response-and-imputation-rates/item-edit-and-imputation-process.pdf>

Coverage assessment and adjustment

- 5.17 Ultimately, the success of the Census relies heavily on its accuracy and how well it can estimate the population and its characteristics. The Census will never count every single household and individual. A necessary process of coverage assessment and adjustment was undertaken to provide accurate national and sub-national estimates of the population.
- 5.18 In the 2001 Census, a focused post enumeration survey (CCS) was used to measure under-enumeration by undertaking a separate enumeration of a sample of areas. While this approach was also adopted for 2011 (see paragraph 4.16), it was supplemented by the Census Under Enumeration (CUE) Project. The CUE Project was initiated to augment the coverage of the Census enumeration (that is, completed questionnaires) by using activity based administrative data from the medical system to supply core information on non-responding households. Activities such as the collection of a prescription, changes to registration details and treatment by a dentist or optician were considered to provide good evidence of residence. The administrative data were considered an additional source of information along with the CCS. The CUE methodology was piloted and refined during both the 2007 Test and the 2009 Rehearsal.
- 5.19 The results of the CUE/CCS were then matched, at the individual level, to the corresponding 2011 Census data, identifying the number and characteristics of those missed in the Census. The combined census and CCS information, along with statistical models, were used to produce an estimate of the number of people missed by the Census. The people and households estimated to have been missed were then added to the database using similar techniques and processes to the edit and imputation stage described at paragraphs 5.11-5.12.

Output Preparation

- 5.20 Once the results had been quality assured, not only in terms of Northern Ireland and sub Northern Ireland population estimates, but also for consistency across characteristics and in terms of population coverage (that is, that the database represents the complete population), the database was ready for output processing. Simply described, output processing consists of a number of steps to create a final output database that is used to produce results for disseminating to users.

Derived variables for outputs (DVOs)

- 5.21 As mentioned in paragraph 5.10, census data within the DSP system initially consisted of a number of variables that represented the responses to each question on the Census questionnaire. Throughout processing, a number of further variables were created to aid some of the processes within the system. These were known as derived variables for processing (DVPs) and were created whenever information from the questionnaire needed to be combined or grouped to create more useful classifications (for example, questions 29 to 33 on the questionnaire all contributed to the Activity Last Week variable).
- 5.22 While most of the DVPs were temporary variables, some of them were retained for outputs purposes. Furthermore, a number of DVOs were specified and developed within the DSP system, the aim of which was to produce variables and classifications that had been pre-defined within output table specifications and products.
- 5.23 For example, question 21 on the Census questionnaire asked respondents to multi-tick boxes that indicated their abilities in Irish and/or Ulster-Scots. The results of this question were initially stored as binary strings representing the combination of ticks (for example, 10000 represented no ability; 01000 represented an understanding). The DVO that was created for this question allowed all the unique combinations of abilities/no abilities to be categorised and reported in a simpler way than having to interpret a number of binary strings.
- 5.24 While the majority of these DVOs were created to provide aggregate versions of the tick and text responses to certain questions (for example, Country of Birth, Ethnicity), some were created to provide more complex counts/classifications, for example, of persons within households or families. Without these, although the outputs database would have still held the information required to produce outputs, the effort that would have been required to code output variables would have been significant.

Creation of an outputs database

- 5.25 Until this stage, all processing and quality assurance had taken place within the DSP system, which was located within the offices of ONS. While this worked well for Census Office from a cost and resource saving perspective, Census Office required the Northern Ireland data to be located within Census

Office for the purposes of maintaining and developing outputs from the 2011 Census. Therefore, a final extract of the DSP system was specified and delivered to NISRA for this purpose.

- 5.26 The extract of the Northern Ireland data was specified in such a way to maximise its integration with a Microsoft SQL environment – software which was already in wide use within Census Office and which, therefore, had been chosen as the main database management tool for the development and maintenance of the 2011 Census outputs database.
- 5.27 A further advantage of adopting this approach was that Microsoft SQL integrated well with the chosen output production platform of SuperCROSS³¹, which has been utilised to produce tabular output from the Northern Ireland Census since 2001.

Quality Assurance

- 5.28 The purpose of the Quality Assurance (QA) work undertaken by Census Office was to ensure that the outputs released from the 2011 Census in Northern Ireland were of a high quality, fit for purpose and met the needs of users.
- 5.29 Quality management, control and assurance were integral throughout the 2011 Census operation. An important element of this work was to assess the extent to which Census estimates varied from those derived from alternative sources, ensuring that any differences observed were understood, plausible and could be explained to users.
- 5.30 Census Office undertook several important quality control measures, which were central to all aspects of the 2011 Census design and methodology. These included:
- the development of an authoritative Census Address Register;
 - the implementation of a robust field methodology that:
 - identified and rectified deficiencies in the Census Address Register through a full address check;
 - followed-up any undelivered questionnaires;

³¹ SuperCROSS is tabulation software developed by Space-Time Research (STR).

- followed-up any non-responding households; and
- specifically identified those non-responding households from which a completed questionnaire would have been expected (this is important from a coverage assessment perspective).
- the postal delivery of Census questionnaires by Royal Mail;
- the provision of an Internet response channel;
- the provision of public interface services;
- the implementation of a comprehensive publicity campaign to ensure that everyone realised the importance of the Census and their obligation to take part; and
- the development and implementation of a comprehensive requirement specification for the automated systems for data capture and coding with challenging associated Service Level Agreements (SLAs) and quality control measures.

5.31 A set of robust 'Downstream' processes were developed to, for example:

- confirm that the captured data were delivered by the contractor in accordance with the agreed specification and service levels;
- identify and address any duplicate households or individuals in the data;
- identify any missing items in the data and impute the required values in accordance with methodology agreed across the UK;
- undertake an assessment of coverage and adjust the results as appropriate; and
- apply the necessary statistical disclosure control techniques in order to ensure that the confidentiality of the information provided by the general public is protected in the aggregate outputs produced from the Census.

5.32 Much more detail of the approach taken to Quality Assurance is covered in both the 'Quality Assurance of the 2011 Census in Northern Ireland' strategy document³² published in May 2012 and the 'Northern Ireland Census 2011 Quality Assurance Report'³³ published in March 2015.

Census Quality Survey

- 5.33 A smaller, separate Census Quality Survey (CQS) was undertaken after the 2011 Census to measure the accuracy of responses to individual questions. The 2011 CQS was a small sized voluntary survey, conducted independently of the Census and involved a random sample of households that had previously responded to the Census. The main purpose of the CQS was to provide some insight into the overall quality of the information being reported through the Census. Participants were re-asked the full set of Census questions in a pre-arranged face-to-face interview and their responses were then matched to, and compared with, those provided in the Census.
- 5.34 Eight household questions were considered. Table 5.1 shows the Response Rate, the Agreement Rate and the Lower and Upper Bounds for the Agreement Rate 95% Confidence Interval for each of these questions.
- 5.35 The Response Rates were 99.7 per cent or higher for each question, with the exception of the Landlord question (94.8 per cent). Agreement Rates exceeded 80 per cent for each question bar one, (Number of Rooms), and ranged from a high of 98.4 per cent (between the response in the CQS and the response in the Census) for 'Self-Contained' to a low of 60.9 per cent for 'Number of Rooms'.

³² 'Quality Assurance of the 2011 Census in Northern Ireland' strategy document is available from: <http://www.nisra.gov.uk/archive/census/2011/quality-assurance-strategy.pdf>

³³ 'Northern Ireland Census 2011 Quality Assurance Report' is available from: <http://www.nisra.gov.uk/archive/census/2011/evaluation/quality-assurance-report.pdf>

Table 5.1 Response Rates, Agreement Rates and Confidence Intervals for household questions

Variable	Response Rate (%)	Agreement Rate (%)	95% Confidence Interval (Agreement Rate)	
			Lower Bound (%)	Upper Bound (%)
Type of Accommodation	100.0	89.3	87.9	90.8
Self-Contained	100.0	98.4	97.9	99.0
Number of Rooms	100.0	60.9	58.6	63.2
Household Adaptations (Y/N)	100.0	89.7	88.3	91.1
Household Adaptations	100.0	87.1	85.6	88.7
Central Heating (Y/N)	100.0	99.6	99.3	99.9
Central Heating	100.0	80.1	78.2	81.9
Tenure	99.7	90.8	89.5	92.2
Landlord	94.8	92.4	90.1	94.7
Number of Cars or Vans (Y/N)	99.8	97.2	96.4	98.0
Number of Cars or Vans	99.8	87.2	85.6	88.7

5.36 In addition, 32 individual questions were considered. Table 5.2 shows the Response Rate, Agreement Rate and the Lower and Upper Bounds for the Agreement Rate 95% Confidence Interval for each of these questions.

5.37 At 61.3 per cent, the Response Rate was lowest for the question on the Census that sought to confirm the month and year when someone most recently arrived to live in Northern Ireland. Agreement Rates varied from a high of 99.4 per cent for the 'Student's Term-Time Address' question to a low of 63.0 per cent for the self-assessed 'General Health' question.

Table 5.2 Response Rates, Agreement Rates and Confidence Intervals for individual questions

Variable	Response Rate (%)	Agreement Rate (%)	95% Confidence Interval (Agreement Rate)	
			Lower Bound (%)	Upper Bound (%)
Age	100.0	97.5	96.9	98.0
Marital and Civil Partnership Status	100.0	98.3	97.8	98.7
Students	100.0	97.0	96.3	97.6
Student's Term-Time Address	93.9	99.4	98.8	100.0
Country of Birth	99.9	99.2	98.9	99.6
Lived Outside Northern Ireland	99.8	89.3	88.2	90.4
Date Arrived to Live in Northern Ireland	61.3	70.6	65.0	76.2
Passports Held (Y/N)	99.7	94.8	94.0	95.6
Passports Held	99.7	92.2	91.2	93.1
National Identity	99.7	66.8	65.1	68.5
Ethnic Group	99.9	99.2	98.9	99.5
Religion Belong To	100.0	85.9	84.7	87.2
Religion Brought Up In	69.0	73.2	67.5	78.9
Main Language	99.8	99.2	98.9	99.5
Proficiency in English	92.9	64.5	54.6	74.4
Knowledge of Irish (Y/N)	100.0	93.0	92.1	93.9
Knowledge of Irish	100.0	87.8	86.6	88.9

Variable	Response Rate (%)	Agreement Rate (%)	95% Confidence Interval (Agreement Rate)	
			Lower Bound (%)	Upper Bound (%)
Knowledge of Ulster-Scots (Y/N)	99.8	91.9	91.0	92.9
Knowledge of Ulster-Scots	99.8	90.1	89.0	91.2
Long-Term Health Problem or Disability (Y/N)	99.9	91.1	90.1	92.1
Long-Term Health Problem or Disability	99.9	86.4	85.1	87.6
Type of Long-Term Condition (Y/N)	99.8	86.4	85.2	87.6
Type of Long-Term Condition	99.8	70.4	68.7	72.0
General Health (VG, G/F/B, VB)	99.8	85.0	83.7	86.2
General Health	99.8	63.0	61.3	64.7
Provision of Unpaid Care (Y/N)	99.9	89.2	88.1	90.3
Provision of Unpaid Care	99.9	87.4	86.2	88.5
Qualifications (Y/N)	99.3	88.5	87.2	89.8
Qualifications	99.3	67.3	65.4	69.2
Voluntary Work	99.6	88.2	86.9	89.5
Employment Last Week	96.0	88.4	87.1	89.7
Looking for Work	94.2	94.2	92.6	95.7
Available for Work	91.1	91.5	89.6	93.3
Waiting to Start Work	90.2	99.2	98.6	99.8
Other Activity Last Week	94.2	76.8	74.0	79.5

Variable	Response Rate (%)	Agreement Rate (%)	95% Confidence Interval (Agreement Rate)	
			Lower Bound (%)	Upper Bound (%)
Ever Worked	99.9	91.0	89.2	92.8
Employment Status in Main Job	91.5	94.7	93.7	95.6
Supervision of Other Employees	92.0	87.2	85.8	88.6
Hours Worked	91.5	76.2	74.5	78.0
Method of Travel to Main Place of Work or Study	95.7	71.7	69.3	74.1

5.38 The results showed that there was a high degree of similarity between the overall response distributions derived from the answers provided through the CQS face-to-face interviews and the corresponding Census returns for those who participated in the CQS. This confirms that the Census is an unbiased method for collecting such information on both households and individuals. In addition, there was a high level of agreement between the Census and CQS responses for the vast majority of questions, with the level of agreement varying by response category and the level of disaggregation. Where the responses differed, they were generally counterbalanced and tended to fall into similar or neighbouring categories (for example, ‘Good’ General Health as opposed to ‘Very good’ General Health and vice-versa).

5.39 Against this background, the results from the CQS were generally encouraging and confirmed that the 2011 Census data is of a high quality and fit for purpose. Much more detail on the CQS is available in the ‘2011 Census Quality Survey in Northern Ireland Report’³⁴ published in July 2013.

³⁴ ‘2011 Census Quality Survey in Northern Ireland Report’ is available from: <http://www.nisra.gov.uk/archive/census/2011/census-quality-survey.pdf>

6 Confidentiality, Privacy and Security

Confidentiality Principles

- 6.1 The importance of achieving maximum coverage in the Census necessitates that public participation should be mandatory. The statutory requirement to provide personal census information is prescribed by the provisions of the Census Act (Northern Ireland) 1969 and in the Order and Regulations that were made under the Act.
- 6.2 It is recognised that the public need to be confident that their personal census records will be held securely. As in previous censuses, assurances were given to the public that all the information provided would be treated in strictest confidence. The well-established reputation of maintaining census confidentiality has been upheld.
- 6.3 The information collected in the 2011 Census is used solely for the production of statistics and statistical research. Usage must comply fully with the Census Act (Northern Ireland) 1969. There are legal penalties for the unlawful disclosure of personal information collected in the Census. Government-wide standards relating to information risk management and data security have been met. The following principles govern the treatment of the information given in the Census returns:
- only persons under the management and/or control of the Registrar General for Northern Ireland, including those agents acting, or providing services, on his behalf for the purpose of the Census had access to personal census information;
 - in most cases, one census questionnaire covered all members of the household and information was returned by post, via a secure online facility or, exceptionally, by hand to the enumerator. In addition, people were able to give personal information on a separate questionnaire, in a way that would not reveal it to others in their household or establishment, or to the enumerator;
 - all people involved in the census operation, including outside agents providing services, were given strict instructions and were required to sign undertakings in the form of declarations binding in law, to ensure their awareness of their statutory confidentiality obligations, and were liable to prosecution for any breaches of the law;

- the physical security of personal census information held by Census Office HQ staff, by field staff or by authorised agents, was strictly enforced;
- the computer systems handling census data had strict safeguards to prevent unauthorised access;
- there was systemic modification of the data in order to preserve statistical confidentiality in outputs (see paragraphs 6.4-6.11); and
- the security and confidentiality arrangements covering the collection and processing of census questionnaires were subject to an independent review (see paragraph 6.23).

Statistical Confidentiality and Disclosure Control

6.4 In releasing statistics from the Census, precautions were taken so that published tabulations and abstracts of statistical data did not reveal any information about identifiable individuals or households. Statistical Disclosure Control (SDC) covers a range of methods to protect individuals, households, businesses and their attributes (characteristics) from identification in published tables (and microdata). NISRA has legal obligations under the Data Protection Act 1998 in this respect, over and above the obligations set in the Census Act (Northern Ireland) 1969. In addition, the Code of Practice for Official Statistics requires NISRA not to reveal the identity of or private information about an individual or organisation. There are also ethical and practical reasons for applying SDC. NISRA pledges to respondents on the first page of the census questionnaire that the information will only be used for statistical purposes, so it must look after and protect the information provided. If NISRA does not honour its pledge, there is a potential risk that response rates to all surveys could be adversely affected, as could data quality.

6.5 The National Statistician and the Registrars General for Northern Ireland and Scotland published a joint agreement to adopt a common UK SDC policy as part of the move towards seeking harmonised statistical outputs from the 2011 Census across the UK. The policy position is based on the principle for protecting confidentiality set out in the Code of Practice for Official Statistics 2009, which includes the guarantee that no statistics will be produced that are likely to identify an individual.

- 6.6 In the Census context, where thousands of cross-tabulations are generated from one database, the risk of disclosure occurring can be addressed by introducing uncertainty about the true value of small cells. To meet the agreed interpretation of the Code of Practice for Official Statistics 2009, it was agreed that small counts could be included in publicly disseminated census data provided that:
- uncertainty as to whether or not the small cell is a true value has been systematically created; and
 - creating that uncertainty does not significantly damage the data.
- 6.7 Tables may appear to allow someone to find out something about another individual – a characteristic or attribute of the person, for example, if it appears in the table that all males aged 40-49 in a Small Area (SA) are unemployed. The tables or underlying microdata have to be modified to mask these apparent attribute disclosures (ADs), or at least to throw some uncertainty on whether they are real ADs. Various methods can be used, including rounding or suppression of cell counts, table design or manipulation of the microdata, such as perturbation of values (adjusting small counts to protect confidentiality) or record swapping, where small numbers of records are swapped between geographical areas.

Statistical Disclosure Control in 2011

- 6.8 In July 2007, the Census Offices undertook a review of a wide range of SDC methods, assessing them against a set of qualitative criteria in line with the Registrars General policy statement. This resulted in three SDC methods being short-listed for further evaluation:
- (1) record swapping;
 - (2) over-imputation (where a sample of values is deleted and then imputed as if the values are missing); and
 - (3) Invariant ABS Cell Perturbation (IACP), based on a method developed by the Australian Bureau of Statistics.
- 6.9 The three methods were assessed against a set of evaluation criteria (covering the ability to manage confidentiality risks, impact on data utility and feasibility of implementation), drawing on detailed quantitative analysis using 2001 Census data. The criteria and their respective statistical weights were

necessarily subjective, although the scoring did give an indication as to the overall effectiveness of each method and it was also a useful way of summarising the large amount of analyses undertaken. The weightings of different criteria were tested using sensitivity analysis (that is, systematically varied in order to determine the effects of such variation) and the relative positions of the methods remained unaffected. The most important characteristic of the SDC strategy is that disclosure risk should be managed to an acceptable level, allowing compliance with the Code of Practice for Official Statistics. All three methods could achieve this, and hence the evaluation focused on finding the method that did the least 'damage' to the data for particular risk thresholds. The scores for record swapping and over-imputation against the agreed criteria were not significantly different, while the IACP method scored significantly lower, since the method did not maintain complete consistency between tables. Following detailed working level discussions with the UK Census Committee (UKCC) and the Census Offices, record swapping was recommended as the chosen method. It was selected because its weaknesses could be overcome through careful design, whereas the weaknesses of over imputation were considered implicit to the method and more difficult to overcome.

- 6.10 Swapping records between different areas was used to protect information supplied by respondents to the census. Every individual and household was assessed for uniqueness or rarity on a small number of variables and every household given a household risk score. A sample of households was selected for swapping. The chance of being selected in the sample was based largely on the household risk score, so that households with unusual characteristics were much more likely to be sampled.
- 6.11 Once selected, another household with which to swap was found in another geographical area at the level at which the household remains high-risk; an individual may be unique at output area level, but may be one of many such individuals in a larger area. The household and its swap were matched on some basic characteristics in order to preserve data quality. These characteristics included household size, so that the numbers of persons and households in each area were preserved.

Use of Census Data

- 6.12 Census data are invaluable for research. The 2001 Census data were used, for example, in published research on the extent of residential segregation in Northern Ireland and for equality analyses on the introduction of the capital value as the basis for domestic rates.
- 6.13 The handling of information collected in the 2011 Census conformed entirely to the principles of fair processing of personal data and sensitive personal data demanded by the Data Protection Act 1998.
- 6.14 The Registrar General may allow further use of 2011 census data, although only where the census is the sole suitable source of information. In such cases, researchers specify derived statistical outputs, which are produced by Census Office staff on behalf of the researcher.
- 6.15 Two examples of this type of project have been completed to date. The first was completed in conjunction with researchers from the Northern Ireland Housing Executive; where results from the 2011 House Condition Survey were extrapolated to Northern Ireland level. The second project, completed in conjunction with a researcher from the School of Geography, Archaeology and Palaeoecology in Queen's University Belfast, examined the demographic characteristics of Household Reference Persons who responded to the 2011 Northern Ireland Census via the internet.
- 6.16 In addition, Census Office has provided access to anonymised microdata for the purposes of research. These data have been made available in safe settings throughout the UK and have been exemplified by the NILS. Access to such data is being developed further through the recently established Administrative Data Research Centre for Northern Ireland (ADRC-NI)³⁵.

Northern Ireland Longitudinal Study (NILS)

- 6.17 The processing of data in order to extend the NILS to include 2011 Census samples also adhered to the Data Protection Act principles of fair processing. In addition, NILS researchers must adhere to procedures prescribed in the NILS Security and Disclosure Agreements and to all conditions of data access set out in the NILS licence.

³⁵ More information about the Administrative Data Research Centre (ADRC) is available from: <http://www.science.ulster.ac.uk/bamfordcentre/administrative-data-research-centre-northern-ireland-adrc-ni/>

Administrative Data Research Centre for Northern Ireland (ADRC-NI)

- 6.18 It is expected that continued access to de-identified census data will be required for the purposes of research and, while Census Office will continue to provide ad-hoc access as mentioned above, the inclusion of Census data within the ADRC-NI will allow the ADRC-NI to be promoted as the primary resource for conducting such analyses.

Data Security

Census Confidentiality Undertaking

- 6.19 All staff either employed direct by, or providing services to, the Registrar General for the purposes of the Census are, as a condition of service, bound by the confidentiality provisions of the Census (Confidentiality) (Northern Ireland) Order 1991.
- 6.20 It is particularly important to guard against inadvertent disclosure of personal information, and all staff were warned against this and alerted to the penalties for doing so as part of their training. They were required to sign an undertaking that they would not, without lawful authority, divulge or make use of any information acquired in the course of their duties, and would be liable to conviction, under the terms of the Census (Confidentiality) (Northern Ireland) Order 1991, to imprisonment or a fine, or both, for any contravention.
- 6.21 All contractors working on the 2011 Census were also required to sign a declaration of confidentiality to guarantee their understanding and compliance with the law, which makes unauthorised disclosure of personal census data an imprisonable offence. All those who have access to the full census dataset in the operational area were NISRA or ONS staff. All staff processing any personal census data were security cleared to the UK baseline standard. This requirement was extended to all employees of the supplier and their sub-contractors handling any personal census data.

Operating procedures and IT security

- 6.22 Census data are classified as OFFICIAL – SENSITIVE under the scheme of classification of government information. This classification brings in a whole set of standards and safeguards, which have been put in place to ensure that the data remain secure. This includes control of physical access to any site or room where the data are kept, secure control of access to IT hardware and IT systems.

- 6.23 All security measures cover the completed questionnaires, the electronic dataset, the website, the archive image system and the communications links relating to any of these items. All of the electronic communications links over which personal census information will be routed will be encrypted (scrambled) to levels recommended by the government security services. The Census security programme was managed to the framework of ISO27001 – the internationally recognised information security management standard. Independent reviews of systems and procedures, covering both internal systems and those of all contractors, were commissioned. These reviews included systematic checks during the operations. The independent security auditors were accredited by the government security services to carry out these reviews.
- 6.24 Secure data storage systems, with stringent controls and procedures, were put in place. No financial details were stored, while names and addresses were removed from the data sources used for the day-to-day production of statistical tables. The information in questionnaires was used only for census related publications and analyses published for geographic areas. These outputs do not attribute any of the statistics back to specific individuals. Once the analyses were complete and the information was published, electronic archive copies of the questionnaires were securely filed away and the personal details they contain remain closed. All handling and storage of data complied with the Data Protection Act. Census data are owned by government and all of the legal undertakings of confidentiality of personal census information applied to both internal staff and any contractors.
- 6.25 The prime contractor was LMUK. Additional specialist services were provided by Cable & Wireless, Logica CMG, UKDC, BSS, Steria, Polestar, Oracle and Royal Mail. LMUK designed the processing systems using its expertise and past experience. The day-to-day running of operational services was provided by the consortium of specialist service providers. All of these specialist subcontractors were registered and wholly or majority owned in the UK or elsewhere in the EU. Contractual and Operational arrangements to enable the security of Census questionnaires included the following:
- all Census data were owned by NISRA, DFP;
 - all data remained in and were processed in the UK;

- all legal undertakings about the confidentiality of personal Census information applied to both NISRA and any contractors;
- contractual arrangements ensured that only contractors registered and based in the UK and either UK or EU owned had access to personal Census data;
- all Census employees and contractors working on the Census signed a declaration of confidentiality to guarantee their understanding of, and obligations under, the law; and
- all staff that had access to the full Census dataset in the operational data centre were Census Office staff.

In addition, physical security procedures were put in place to prevent the unauthorised copying of data to take place. An independent data system security review was carried out and published prior to the Census.

Reviews of Confidentiality and Computer Security

6.26 An Information Systems Security Policy, suitably stringent to protect census data, was put in place. In line with this policy, further detailed security measures specifically designed for the Census were drawn up and implemented for the processing of data and their transmission for the 2009 Rehearsal and the 2011 Census. Furthermore, as has become the practice prior to previous censuses, the security and confidentiality arrangements covering the collection and processing of Census questionnaires were subject to an independent review.

Independent Security Review

6.27 The Information Security Policy Statement by the UK Census Offices³⁶ outlines the policy and commitments that the three UK Census Offices adopted on Information Assurance (IA) for the 2011 Census. An independent information assurance was undertaken in two phases, the reports³⁷ of which

³⁶ The 'Information Security Policy Statement by the UK Census Offices' is available from: <http://www.nisra.gov.uk/archive/census/2011/information-security-policy-statement-by-uk-census-offices.pdf>

³⁷ '2011 Census Security: Report of the Independent Review Team' is available from: <http://www.nisra.gov.uk/archive/census/2011/iiar-february-2011.pdf> and '2011 Census Security:

were published on the website. In the first phase of the review, the independent reviewers concluded:

“the public can be reassured that the information they provide to the 2011 Census will be well protected and securely managed.”

The final report of the Independent Information Assurance Review concluded:

“the public can be assured that the information they have provided to the 2011 Census has been well protected.”

- 6.28 The security of the processing centres was assessed by two independent accredited organisations and the Centre for Protection of National Infrastructure (CPNI).

Privacy and the Human Rights Act

- 6.29 It is considered that the statutory authority to require information to be provided on each of the questions for the 2011 Census is fully compliant with both the European Convention on Human Rights and the Human Rights Act 1998 in respect of the individual’s right to privacy.
- 6.30 A PIA on the 2011 Census was carried out prior to the subordinate legislation necessary to carry out the Census. The PIA looked at the privacy requirements that applied to census operations, the relationship of those requirements to the questionnaire content, and the impact on census operations arising from the need for privacy.

Online Security

- 6.31 Particular protection was given to the information provided via the IDC system. The online questionnaire was delivered and accessed within a secure architecture, with multiple layers of firewalls and intrusion detection systems built into the design, that incorporated industry-leading technologies to monitor and protect against any cyber attacks. This kept the personal data provided by the public confidential throughout their capture, storage and processing. All the systems were subject to security testing by two separate government-approved security testing companies, which provided independent assurance that they were secure and free from technical vulnerabilities and had been developed in accordance with current practice.

7 Output Production and Dissemination

Consultation

- 7.1 The Census provides a once-in-a-decade opportunity to obtain an accurate, comprehensive and consistent picture of the most valuable resource of Northern Ireland – its population – and a rich array of facts about it. The particular value of the Census comes from the inclusion of information about everyone in the local population, although simultaneously the Census places the highest priority on respecting the confidentiality of every individual respondent. Accordingly, Census output is mostly composed of statistical aggregates for geographic areas. Census Office's objective is to provide as much meaningful and useful output as possible, while respecting confidentiality.
- 7.2 As far as possible, a UK approach was taken to understanding users' high level output requirements. NISRA, ONS and NRS worked collaboratively on different aspects of the output user consultation programme.
- 7.3 A 2011 UK Census output consultation was carried out by the three UK Census Offices (NISRA, ONS and NRS) via an online survey, which ran from 25 February 2008 for approximately 12 weeks. The aim of the consultation was to find out what users of the 2011 Census would want from the data and to help prioritise identified output needs, with a focus on high level output issues. Topics covered included products, access, dissemination and metadata.
- 7.4 The survey was supplemented by a 2011 UK Census outputs website, run in conjunction with the Hansard society. This provided users with the opportunity to elaborate on issues raised in the survey through participation in a blog. Topics for discussion were raised regularly on the blog by the Census Offices to provide opportunities for users to exchange and discuss ideas and views on Census output issues.
- 7.5 As part of its ongoing user consultation, NISRA organised four sets of information events to discuss proposals for and dissemination of the outputs from the 2011 Census – in March 2011, January/February 2012, March 2013 and October 2014.

Output Geography

The legal background

- 7.6 The Census Act (Northern Ireland) 1969 places an obligation on the Registrar General to “prepare abstracts of and reports on the Census returns”, but makes no statement about the form or geographic basis of these abstracts. In practice, Northern Ireland Census outputs have traditionally been based on Local Government Districts (LGD) and electoral wards. With local government boundaries being subject to periodic review, this has resulted, in recent decades, in successive Censuses being reported on different geographic bases. Thus, for example, the 1981 Census was reported on local government boundaries published in 1973, the 1991 Census was reported on boundaries published in 1984 and the 2001 Census was reported on boundaries published in 1992.
- 7.7 A planned review of local government boundaries prior to the 2011 Census was deferred and accordingly Census Office used the current LGD and ward boundaries (that is, the 26 LGDs and 582 wards defined by the 1992 local government boundary review) as the basic geography for the main outputs from the 2011 Census.
- 7.8 A parliamentary boundary review of the 18 areas used for elections both to the Assembly and Westminster reported in 2008 (The Parliamentary Constituencies (Northern Ireland) Order 2008³⁸). These 18 constituencies are all defined as aggregates of the current electoral wards (that is, those wards defined by the 1992 local government boundary review), subject to one exception. The parliamentary boundary review placed one part of Derryagh ward (in Lisburn LGD) in the Belfast West constituency and the remainder of the ward in the Lagan Valley constituency. Census Office produced outputs for each of the 582 local government wards, and also for the two constituent parts of Derryagh ward to enable outputs to be produced for each of the 18 Assembly Areas/Westminster Parliamentary Constituencies.

Areas within Electoral Wards – Background

- 7.9 NISRA aimed to meet users’ requirements for statistical results to be made available, at varying levels of detail, for a number of geographies, subject to

³⁸ ‘The Parliamentary Constituencies (Northern Ireland) Order 2008’ is available from: <http://www.legislation.gov.uk/ukdsi/2008/9780110813172/contents>

the overriding requirement to protect statistical confidentiality. Such geographies have been created essentially from the same building bricks as in the 2001 Census – Output Areas.

- 7.10 For the 2001 Census, 5,022 Census Output Areas (COAs) were designed for output purposes. The size of areas (~125 households) was decided upon because it was the smallest possible size of unit that simultaneously provided sufficient protection for confidentiality. The derivation of COAs within wards was based on a model that tried to make COAs as socio-economically homogeneous as possible.
- 7.11 Although the COAs met many user needs through being as small as possible, their small size also imposed limitations, for example, some data sources were not available at this fine scale. Accordingly, a higher level geography (Super Output Area (SOA)) was developed. SOAs, which are of roughly similar size in population terms across Northern Ireland (target size of 2,000 people), are aggregates of COAs and are constrained to ward boundaries, see Figure 7.1.

Figure 7.1 2001 Census Statistical Geography Units



An exception to this approach applies to Moyle LGD, which has a relatively small population, and consequently relatively small ward populations. In order that they have a similar population size to those in the rest of Northern Ireland, SOAs in Moyle are aggregates of wards. The important point is that wards and SOAs share common boundaries across Northern Ireland. With their more robust statistical base, SOAs have become the main geographic unit on which spatial deprivation measures are now produced for Northern Ireland. The most recent deprivation measures (Northern Ireland Multiple Deprivation Measure 2010) use SOAs as the main geographic base.

- 7.12 Census Office held a number of information events in 2010 and 2011 to initiate discussion and consultation with users on outputs from the 2011 Census. Output geography was discussed at these events, and Census Office also raised the issue with the Census Advisory Group and other users. There was a general consensus that, if the current LGD and ward boundaries were still in place, then, as far as possible the, COA and SOA structure

should be retained for the 2011 Census, as this facilitates comparisons over time.

2011 Census Geographies

7.13 NISRA has kept the 2011 Census output geography as stable as possible. An information paper – ‘Policy for main geographic outputs from the 2011 Census’³⁹ – has been published, discussing the geographical basis for the statistical outputs.

7.14 The population and household thresholds for output areas remain the same as in 2001.

Standard geographies for 2011 Census outputs

7.15 Statistical tables and outputs from the 2011 Census provide exact-fit figures for a number of standard geographies:

- Small Area (SA) – broadly equivalent to COA (see paragraph 7.16);
- Super Output Area (SOA);
- Electoral ward;
- Assembly Area (AA);
- Local Government District (LGD);
- Nomenclature of Units for Territorial Statistics (NUTS) 3;
- Education and Library Board (ELB); and
- Health and Social Care Trust (HSCT).

Small Areas

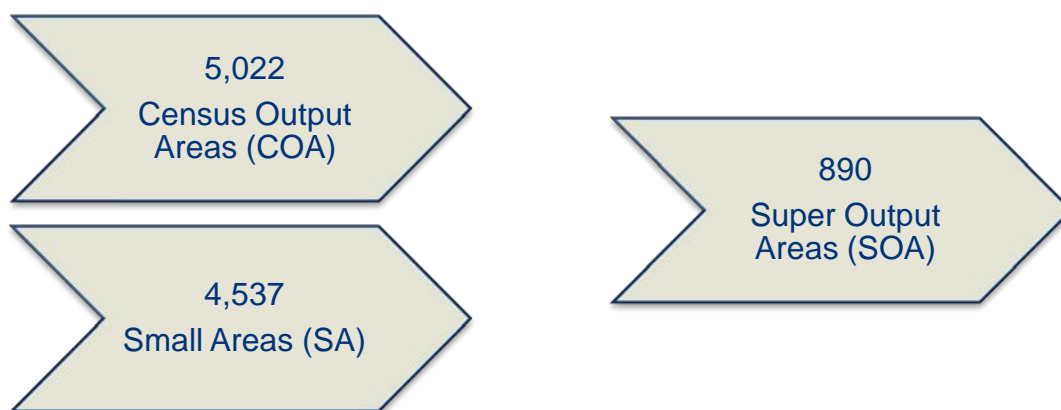
7.16 New Small Areas have been created for the 2011 Census outputs. Maintaining stability as far as possible was important for the 2011 Census. Therefore, the 2011 Small Areas are equivalent to the 2001 Census Output Areas, although some merging of the previous 2001 Census Output Areas has taken place where significant population size changes have occurred since 2001. An information paper – ‘A guidance note on comparisons of

³⁹ More information on ‘Policy for main geographic outputs from the 2011 Census’ is available from: <http://www.nisra.gov.uk/archive/census/2011/geographic-outputs.pdf>

Census outputs from the 2001 and 2011 Censuses for geographic areas within Northern Ireland⁴⁰ – outlining these modifications was published on 10 January 2013.

- 7.17 For the 2011 Census, Small Areas and Super Output Areas align to the current Local Government District boundaries. All Small Areas have new nine character codes assigned in line with the ONS geography coding system. Figure 7.2 shows the alignment of statistical geographies.

Figure 7.2 Statistical Geography Alignment



UK Harmonisation

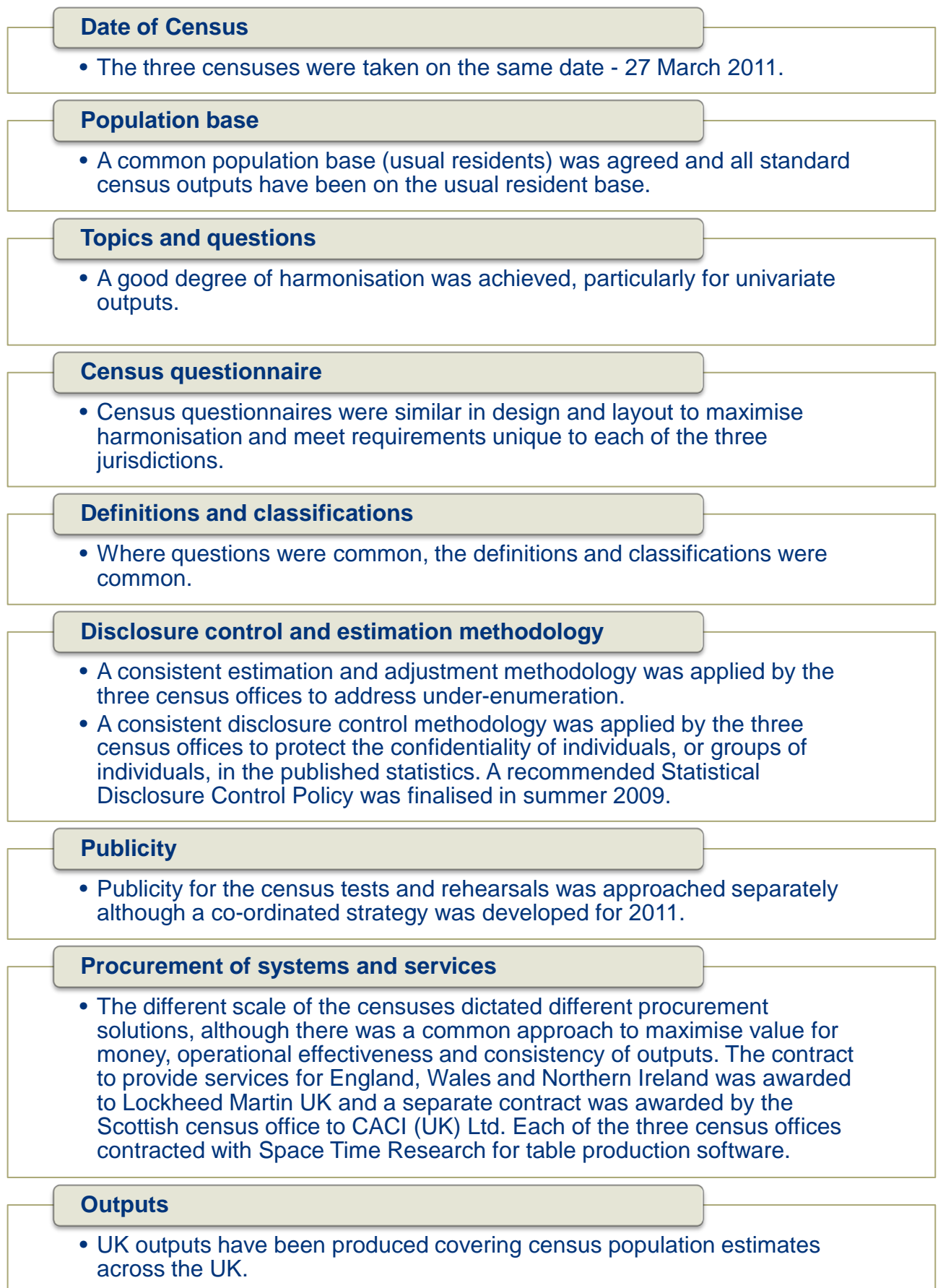
- 7.18 In disseminating the results of the 2011 Census, emphasis was placed on responsiveness to users' requirements on content, format and means of access, and on high standards in the production of statistics.
- 7.19 The National Statistician and the Registrars General for Northern Ireland and Scotland presented the results from the 2011 Censuses in reports to the Westminster Parliament, the National Assembly for Wales, the Northern Ireland Assembly and the Scottish Parliament respectively. The National Statistician and the Registrars General for Northern Ireland and Scotland are co-signatories to an Agreement on the general conduct of the 2011 Census, in particular, on the production of harmonised statistics, with specific attention being given to common questions, population bases, definitions, disclosure control methodologies and output formats. This Agreement came about in the light of the concerns of users that the 2001 Census outputs were insufficiently

⁴⁰ 'A guidance note on comparisons of Census outputs from the 2001 and 2011 Censuses for geographic areas within Northern Ireland' is available from: <http://www.nisra.gov.uk/archive/census/2011/comparison-geographic-areas-from-2001-and-2011.pdf>

co-ordinated across the three Census Offices to allow for the production of fully comparable UK statistics, and in recognition of the importance of providing more harmonised and consistent outputs across the UK.

- 7.20 While there is no statutory requirement to present such reports for the UK, the National Statistician and the Registrars General for Northern Ireland and Scotland planned that results for the UK as a whole would be available, where the data collected permit, as a priority, once the processing of the data had been completed. Indeed, the National Statistician has the responsibility to fulfil the UK's obligations to provide results of the UK Censuses to the European Union and the United Nations Statistical Commission. There was, therefore, a vital need for co-ordination and consistency in the presentation of outputs from the Censuses in Northern Ireland, England and Wales and Scotland.
- 7.21 As a result of this, an increased volume of UK harmonised tables are available for 2011 Census outputs. The UK statistical agencies (NISRA, ONS and NRS) agreed a single point of access for UK harmonised outputs. In its capacity as the National Statistics office for the UK, ONS compiles and releases Census tables for the UK when the data from England and Wales, Scotland and Northern Ireland are complete.
- 7.22 The Registrars General of Northern Ireland and Scotland and the National Statistician agreed a number of aspects of the Census where they aimed to achieve harmonisation. These were set out in the agreement of the National Statistician and the Registrars General in February 2005. This agreement was monitored and updated regularly at meetings of the UK Census Committee.

Figure 7.3 Harmonisation of UK Censuses



Comparisons with 2001 Census

- 7.23 The 2011 Census outputs reflect a decade of societal change. Comparability has been retained with 2001 statistics where possible, as this was an important design principle in the development of the questionnaire and the processing of the statistics. It was also a strong message from users gathered during the output consultation.
- 7.24 To help users to be aware of potential differences when comparing census figures, Census Office produced a set of guidance documents: 'Comparability of the Census questionnaire in Northern Ireland between 2001 & 2011'⁴¹ and 'Appendix: Comparability of the Census outputs in Northern Ireland between 2001 and 2011'⁴².
- 7.25 Comparability of Census 2001 and 2011 outputs was aided by having the same main geographic base in 2001 and 2011.

New Developments for 2011 Census Results

- 7.26 The Census product base has been widened, providing better access to Census data, meeting the needs of more users and exploring Census data more effectively, while following open data principles and the Code of Practice for Official Statistics.
- 7.27 Many new outputs have been produced for the 2011 Census. Some are for new questions, such as main language, passports held and national identity; others reflect user-identified gaps in 2001 products. In addition to increasing the volume of tabular outputs, these topics featured strongly in a number of statistical bulletins. A new form of output is the introduction of Census Short Stories, which make extensive use of infographics to present information on such subjects as National Identity, Older People and Religion⁴³ in a readily available format. In addition, NISRA and the Central Statistics Office (CSO) took the opportunity presented by the holding of the Censuses in Northern Ireland and the Republic of Ireland within a two week period to produce the

⁴¹ 'Comparability of the Census questionnaire in Northern Ireland between 2001 & 2011' is available from: <http://www.nisra.gov.uk/archive/census/2011/comparability-questionnaires-between-2001-and-2011.pdf>

⁴² 'Appendix: Comparability of the Census outputs in Northern Ireland between 2001 and 2011' is available from: <http://www.nisra.gov.uk/archive/census/2011/comparability-outputs-between-2001-and-2011.pdf>

⁴³ Census Short Stories are available from: <http://www.ninis2.nisra.gov.uk/public/census2011analysis/index.aspx>

report 'Census 2011 Ireland and Northern Ireland'⁴⁴.

- 7.28 New statistical products have been developed, representing international innovation and enhancing NISRA's reputation, as well as providing value for money and more effective use of Census data. These include products for small population groups, as well as more accessible microdata products, including public use samples of anonymised records.
- 7.29 The 2011 Census outputs were released via the Northern Ireland Neighbourhood Information Service (NINIS)⁴⁵, which was redeveloped to provide access to high volumes of large datasets. Users are able to find and select 2011 Census outputs, and choose to download or view the statistics online. The website features all statistics and tables, commissioned tables, metadata, look-up files, data visualisations, Short Stories, maps and charts.
- 7.30 All NISRA census data available on NINIS are published under Open Government Licence (OGL)⁴⁶, and are available to all users.
- 7.31 Supporting reference materials accompany the statistics and are found on the NISRA website⁴⁷. This includes a 2011 Census Definitions and Output Classifications document⁴⁸, statistical commentary in the form of statistical bulletins and statistical press notices and geography products⁴⁹.

Statistical Disclosure Control

- 7.32 A great strength of Census data is the level of detail that they allow, while protecting the confidentiality of the individual, which has always been paramount. In order to ensure confidentiality for 2011, statistical disclosure control (protecting the attributes of an individual) was applied (see Chapter 6 – Confidentiality, Privacy and Security for further details).

⁴⁴ 'Census 2011 Ireland and Northern Ireland' report is available from:

<http://www.cso.ie/en/census/census2011irelandandnorthernireland/>

⁴⁵ Northern Ireland Neighbourhood Information Service (NINIS): <http://www.nisra.gov.uk/ninis>

⁴⁶ More information on 'Open Government Licence' is available from:

<http://www.nationalarchives.gov.uk/doc/open-government-licence/>

⁴⁷ Supporting information for the 2011 Census results is available from:

<http://www.nisra.gov.uk/census/2011/results/supporting-information.html>

⁴⁸ '2011 Census Definitions and Output Classifications' is available from:

<http://www.nisra.gov.uk/archive/census/2011/definitions-and-output-classifications.pdf>

⁴⁹ More information on NISRA geography products is available from:

<http://www.nisra.gov.uk/geography/home.htm>

NISRA, like colleagues in ONS and NRS, used two complementary strategies for protecting individuals while minimising damage to the results:

- targeted record swapping; and
- restriction of detail particularly at low level geographies.

7.33 The key principles and objectives of SDC remain unchanged, that is to enable as much detailed output as possible while protecting the confidentiality around individual Census returns. The 2011 methodology was described in detail in Chapter 6 – Confidentiality, Privacy and Security. It bears much similarity with the 2001 approach but has some key improvements. In 2001, record swapping was the primary method of SDC employed. Record swapping is a perturbation of the raw data set, prior to tabulation. In 2001, a further perturbation was applied to the tabular output, namely small cell adjustment. This use of small cell adjustment was not popular with users as it removed the internal consistency of Census tabular outputs.

7.34 For 2011, the record swapping methodology was developed further, as described in Chapter 6 – Confidentiality, Privacy and Security. As a consequence the Census Offices are content that the use of record swapping – in an enhanced manner to that used in 2001 – provides sufficient protection. Consequently, small cell adjustment is no longer considered necessary and all 2011 Census outputs are internally consistent.

Output Products, Data Access and Dissemination

7.35 2011 Census outputs have taken advantage of new online developments to publish structured datasets, complemented by rich supporting information in the form of reference metadata, linked or attached to the datasets and classifications which constitute them.

7.36 The publication of 2011 results exploited techniques and processes that built on the experience gained from the 2001 Census and made full use of the opportunities for online dissemination.

The aims for dissemination of the 2011 Census results included:

- the publication of all Census outputs in open, explorable formats, available from a single web platform, so that users can easily find the data they need;

- integration of rich supporting information with and within datasets – reference metadata linked to each dataset and the classifications that constitute them – so that the information users can understand and interpret the data; and
- the simultaneous publication of data and supporting metadata, so that users have the information they need to understand the data, and how they relate or differ from previous the Census or other current outputs.

Tabular Outputs

- 7.37 Historically, tabular output from the Census in Northern Ireland has been the main output medium for the dissemination of census results. Such outputs have been released mainly in printed reports prior to (and including) the 2001 Census, and more recently (that is, 2001 and 2011 Censuses) online tables and other electronic media (for example, CDs, Email). For the 2001 Census, Microsoft Excel tables were the main output media – with tables being available online via the NISRA website and via Census Customer Services upon request.
- 7.38 Similar to 2001, results from the 2011 Census have mainly been published using Microsoft Excel tables. However, this time the tables were available through NINIS (as mentioned in paragraph 7.29) and were released with supporting metadata information, which provided users with supplementary information on the data, including relevant methodological references and, for example, information on geography levels that the tables were being released for.
- 7.39 Because of the breadth and depth of census results generally, the statistics have historically been published in several releases. For the 2011 Census, each release comprised several output phases. In summary these comprised:

First release – Population and Household Estimates

- Population and Household Estimates for Northern Ireland (16 July 2012)
- Population and Household Estimates by Local Government District for Northern Ireland (19 September 2012)
- Population and Household Estimates for Wards and Small Areas for Northern Ireland (28 February 2013)

- Population Estimates for New 11 Districts in Northern Ireland (24 September 2013)

Second release – Key and Quick Statistics

- Key Statistics for Northern Ireland (11 December 2012)
- Key Statistics for Wards and Small Areas for Northern Ireland (30 January 2013)
- Quick Statistics for Northern Ireland (28 February 2013)
- Quick Statistics for Northern Ireland on Communal Establishments and Approximated Social Grade (18 April 2013)
- Key Statistics for New 11 Districts in Northern Ireland (30 January 2014)
- Additional Quick Statistics (Northern Ireland) (26 March 2015)

Third release – Detailed Characteristics

- Detailed Characteristics for Northern Ireland on Identity, Religion and Health (16 May 2013)
- Detailed Characteristics for Northern Ireland on Ethnicity, Country of Birth and Language (28 June 2013)
- Detailed Characteristics for Northern Ireland on Housing, Labour Market and Voluntary Work (11 September 2013)
- Detailed Characteristics for Local Government Districts and Super Output Areas in Northern Ireland (28 November 2013)
- Detailed Characteristics on Travel to Work or Place of Study for Northern Ireland (26 February 2015)
- Additional Detailed Characteristics (Northern Ireland) (26 March 2015)

Fourth release – Local Characteristics

- Local Characteristics for Northern Ireland (20 March 2014)
- Local Characteristics on Travel to Work or Place of Study for Northern Ireland (26 February 2015)

- Additional Local Characteristics (Northern Ireland) (26 March 2015)

Postcodes Estimates

- Headcount and Household Estimates for Postcodes in Northern Ireland (26 September 2013)

Alternative Populations

- Short-Term Resident Population Statistics for Northern Ireland (24 September 2014)
- Workplace Population Statistics for Northern Ireland (19 November 2014)
- Daytime Population Statistics for Northern Ireland (18 December 2014)
- Additional Workplace and Daytime Population Statistics for Northern Ireland (26 February 2015)

Subsequent releases

- Headcount and Household Estimates for Settlements in Northern Ireland (26 March 2015)
- Grid Square Product (spring 2015)
- Key Statistics for Settlements in Northern Ireland (spring/summer 2015)

7.40 Commentary, in the form of a statistical bulletin, appeared alongside every major release, providing:

- description and context around each topic;
- comparability with the 2001 Census outputs where appropriate; and
- links to sources of information where applicable.

7.41 Reference material was updated for each release, including definitions of terms and concepts for any new topics covered.

7.42 The planned tables and layouts were published in advance on the NISRA

website as part of the Northern Ireland Census 2011 Output Prospectus⁵⁰, although they were subject to change or redesign before release, to better fulfil user requirements, for data quality issues, or as a result of SDC.

Bulk Data

- 7.43 The main statistics from the 2011 Census were published in sets of tables. Users that required all the tables in a given set were able to download these as bulk data from the NINIS website or request them from Census Customer Services.
- 7.44 The format of the bulk data was agreed with a set of users in advance of publication, the purpose of which was to provide a consistent, machine readable format for tables to be loaded into existing and/or customised systems for the analysis and dissemination of census statistics. The advantage of this approach was that third-party suppliers could readily gain access to large amounts of published Census data and disseminate these to their users in a consistent format.

Anonymised Microdata Samples and Secure Environment

- 7.45 For some more detailed Census information, where the impact of disclosure control on the usefulness of the data would be too great, special access arrangements have been put in place for approved researchers.
- 7.46 Microdata are samples of individual and household records, drawn from the Census data, which have been anonymised to protect confidentiality. The microdata samples have been used by academics and researchers to develop more sophisticated analyses of population data than are available from the standard published Census tables, for example, in studies of the health and labour market status of specific groups within the population, such as carers, people with disabilities and ethnic and religious minorities.
- 7.47 The availability of such samples was a major, and successful, innovation of the 1991 Census, and these were extended in 2001. Access to these data is controlled securely, with access to the samples containing a more detailed level of information being provided only under supervision in the NISRA secure environment.

⁵⁰ 'Northern Ireland Census 2011 Output Prospectus' is available from: <http://www.nisra.gov.uk/census/2011CensusProposedOutputs.html>

- 7.48 NISRA hosts a secure environment through which researchers and other parties can access Census Secure Microdata Files. These are samples of anonymised (but detailed) data from the Census, which researchers can use to perform statistical analyses. Access to secure microdata files for Northern Ireland can be provided through NISRA Census Office.⁵¹
- 7.49 As in 2001, a Secure Individual sample and a Secure Household sample have been specified that will only be available via the NISRA secure environment. Two Safeguarded Individual samples have also been specified (one at Northern Ireland level and one at LGD level), which will provide users with licensed access to less detailed microdata, for which they must adhere to a number of terms and conditions before they are granted access.
- 7.50 The products mentioned above are planned for release in spring 2015 and are intended to be accessible via the UK Data Service (UKDS)⁵². Figure 7.4 provides more details on their content and access arrangements.

Figure 7.4 Microdata Products for 2011

<p style="text-align: center;">Secure: Individual Controlled Access Microdata Sample (iCAM)</p> <ul style="list-style-type: none"> • Licence: Approved researcher • Sample Size: 10% • Availability: NISRA Secure Environment <ul style="list-style-type: none"> • LGD 	<p style="text-align: center;">Secure: Household Controlled Access Microdata Sample (hCAM)</p> <ul style="list-style-type: none"> • Licence: Approved researcher • Sample Size: 10% • Availability: NISRA Secure Environment <ul style="list-style-type: none"> • LGD 	<p style="text-align: center;">Safeguarded: Individual Regional</p> <ul style="list-style-type: none"> • Licence: End user licence • Sample size: 5% • Special user agreement <ul style="list-style-type: none"> • NI 	<p style="text-align: center;">Safeguarded: Individual LGD</p> <ul style="list-style-type: none"> • Licence: End user licence • Sample size: 5% • Special user agreement <ul style="list-style-type: none"> • LGD (less variable detail)
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⁵¹ More information on microdata, including secure microdata files, is available from: <http://www.nisra.gov.uk/census/2011/results/specialist-products.html>

⁵² More information on how to access the safeguarded microdata files is available from: <http://ukdataservice.ac.uk/get-data/how-to-access/registration.aspx>

UK-based Statistics

7.51 ONS has responsibility for disseminating 2011 Census statistics for the UK as a whole (such as those required to fulfil international obligations as well as meet domestic users' requirements). Because the outputs for Northern Ireland and for England and Wales were produced before the corresponding tables for Scotland, the following UK statistics were released in stages, to a timetable in line with the release of the equivalent Scottish data by NRS:

- preliminary population figures (rounded to the nearest thousand) – UK level only (December 2012);
- population figures (rounded to the nearest hundred) and household figures (rounded to the nearest ten) – UK level only (March 2013);
- unrounded population figures by single year of age and sex – for the UK and all local authorities (or equivalent) in the UK, along with UK historic population pyramids (1911 to 2011) (July 2013);
- Key Statistics and Quick Statistics for all local authorities – Part 1 (October 2013), Part 2 (December 2013), and Part 3 (January 2014); and
- a compendium of data already released by each country – Key Statistics and Quick Statistics for OAs, SOAs and equivalents in the UK (May 2014).

These statistics, together with interactive maps and tools, are available on the 2011 UK Census web pages⁵³.

European Union Outputs

7.52 A new EU regulation⁵⁴ requiring Member States to make available to Eurostat a set of harmonised 2011-based census-type statistics came into force on 9 July 2008. This was aimed at meeting the European Commission's long-standing need for reliable, detailed coherent and comparable data on

⁵³ More information on 2011 UK Censuses is available from: <http://www.ons.gov.uk/ons/guide-method/census/2011/uk-census/index.html>

⁵⁴ 'European Union (2010) Commission Regulation (EU) 1151/2010 of 9 December 2010 Eurostat/ Methodologies and Working Papers EU legislation on the 2011 Population and Housing Censuses' is available from: <http://eur-lex.europa.eu/legal-content/en/ALL/?uri=OJ:L:2010:324:TOC>

population and housing across the EU. Earlier attempts to collate such information from previous European censuses (using instruments such as directives or the less formal ‘gentlemen’s agreement’) had resulted in a lack of a consistent set of EU data. The new regulation specified the outputs to be delivered, but not the way that Member States should collect the data.

- 7.53 The data is publically available from the European Census Hub⁵⁵ which went live on 31 March 2014. Census data from all EU Member States can be accessed from this website. To meet the EU obligation under the Regulations, all Member States were required to join the EU Census Hub but with the interactive service hosted in their own country, so that the national experts can answer any enquiries about their own census data. People around the world can now compare and contrast the UK data provided by ONS (some 660 million data observations) with those from the 27 other Member States.
- 7.54 The UK’s 60 data hypercubes (large multi-dimensional tables) and 21 quality cubes were built by a small team from ONS, with assistance from NISRA and NRS. At the same time they built the infrastructure to host this information and provide the web service. Reusing existing components wherever possible and developing lean processes to support the project meant that meeting this EU obligation was also very cost effective.

UN Outputs

- 7.55 As in previous decades, ONS has also provided the UN Statistical Division with a set of tabular UK outputs as part of its commitment under the 2005-2014 World Census Programme.

Origin-Destination Statistics

- 7.56 Origin-Destination statistics (also known as flow data) included the travel to work and migration patterns of individuals, cross-tabulated by key variables of interest (for example, occupation). As in previous censuses, the travel to work flows used the area of usual residence as the origin and the area of workplace as the destination, while the migration flows respectively used the areas of usual residence one year before the census and at the census as the origin and destination. New products for the 2011 Census, however,

⁵⁵ More information on the ‘Census Hub’ is available from:

<http://ec.europa.eu/eurostat/web/population-and-housing-census/census-data/2011-census>

provided the flow patterns separately for those living at a student address one year before the census.

- 7.57 The Origin-Destination statistics are also available at UK level, providing flows for usual residents within and between Northern Ireland, England, Wales and Scotland.
- 7.58 For the 2011 Census, the SDC policy requires that access to the most detailed Origin-Destination tables should be controlled, in the main, through a secure environment, the Virtual Microdata Laboratory (VML) environment and through special user licence (dependent on the detail available in the data). This is a change from the 2001 Census, where the protection for similar outputs came from the post-tabular small cell adjustment that still allowed wide and easy access, but, also adversely affected the utility of the outputs.

Grid Square Statistics

- 7.59 In keeping with Northern Ireland Censuses since 1971, NISRA plans to produce the traditional Grid Square product⁵⁶ (scheduled for spring 2015). The Grid Square product provides basic Census statistics (population and household estimates) for 1km and 100m grid squares in Northern Ireland based on grid references.

Settlement Statistics

- 7.60 Following publication of the 2001 Census outputs, NISRA published a Statistical Classification and Delineation of Settlements report⁵⁷ in February 2005. This complemented the main outputs based on administrative geographies (electoral wards) by defining geographic units that approximate the built-up areas of settlements. A Key Statistics for Settlements report⁵⁸ was also published in 2005.

⁵⁶ More information on the Grid Square product is available from:

<http://www.nisra.gov.uk/geography/default.asp5.htm>

⁵⁷ 'Report of the Inter-Departmental Urban-Rural Definition Group – Statistical Classification and Delineation of Settlements (February 2005)' is available from:

http://www.nisra.gov.uk/archive/geography/digital_products/urban_rural_classifications/ur_report.pdf

⁵⁸ 'Northern Ireland Census 2001 Key Statistics for Settlements' report is available from:

<http://www.nisra.gov.uk/archive/census/2001/reports/key-statistics-for-settlements.pdf>

7.61 An updated Statistical Classification and Delineation of Settlements report will be published in March 2015, with a Key Statistics for Settlements product scheduled to follow in spring/summer 2015.

Commissioned Tables

7.62 NISRA continues to provide a commissioned table service for census statistics, for which some charges will apply (see above). Commissioned tables (from the 2011 Census and earlier censuses) can be requested from Census Customer Services. Commissioned tables are constrained by the data that are available at each stage, by the similarity to what NISRA has released, or plans to release, and by any necessary statistical disclosure control measures. All commissioned tables are published on the NINIS website under an OGL.

Corrections and Updates

7.63 In line with Census Office's Revisions and corrections policy⁵⁹, rigorous quality checks have been applied to all released 2011 Census statistics. Census Office may occasionally need to correct statistics and update information. In this event, users are informed via Census newsletter/email alerts, notifications on the relevant website systems and by an update to a dedicated document on the NISRA website.

Reconciling the Census and the Mid-Year Population Estimates

7.64 NISRA produces annual estimates of the resident population of Northern Ireland. The population estimates refer to the number of people in the population at 30 June each year; the statistics are, therefore, often referred to as the mid-year population estimates.

7.65 The population estimates for each year in the period from 2001 to 2011 have been revised in light of the 2011 Census population estimates. This has also provided an opportunity to review data sources and the methodology.

7.66 Population estimates are widely used to express other statistics as a rate (per 1,000 population), and therefore enable comparisons across the UK and other countries. They are also used to allocate public funds to the devolved Northern Ireland administration through the Barnett formula. These estimates

⁵⁹ Census Office's 'Revisions and corrections policy' is available from:
<http://www.nisra.gov.uk/archive/census/2011/revisions-and-corrections-policy.pdf>

form the basis for future population statistics, such as population projections and estimates for smaller geographical areas.

7.67 Mid-year population estimates are created using the cohort component methodology⁶⁰. This method starts with the population at the last reported Census (2011). It is important to note that the reported Census figures were derived from enumerated people plus an estimate of additional people to account for Census under-enumeration. The 2011 mid-year population estimates were created from the 2011 Census with small adjustments made covering the time difference between Census Day (27 March) and the reference date for mid-year population estimates (30 June). For each year thereafter, the population is 'aged on' by one year, and adjustments are made to account for subsequent births, deaths and migration.

Table 7.1 Comparison: Previously Published and Revised Population Estimates 2001 – 2011

Year	Previously Published Population Estimate (2001 rolled forward)	Revised Population Estimate (2011 Census-based)
Mid 2001	1,689,300	1,688,800
Mid 2002	1,696,600	1,697,500
Mid 2003	1,702,600	1,704,900
Mid 2004	1,710,300	1,714,000
Mid 2005	1,724,400	1,727,700
Mid 2006	1,741,600	1,743,100
Mid 2007	1,759,100	1,761,700
Mid 2008	1,775,000	1,779,200
Mid 2009	1,788,900	1,793,300
Mid 2010	1,799,400	1,804,800
Mid 2011	1,806,900	1,814,300

7.68 For Northern Ireland as a whole, the official (2011 Census-based) mid-2011 population estimate was 1,814,300, some 7,400 (0.4 per cent) higher than the 2011 mid-year population estimate rolled forward from the 2001 Census, see Table 7.1. This reflects the fact that the Census revealed that the rolled-forward estimates slightly underestimated the total population.

⁶⁰ 'How are Population Estimates created? The Methodology' published in June 2014 is available from: http://www.nisra.gov.uk/archive/demography/population/midyear/Methodology_2014.pdf

8 Evaluation and Strategic Development

Introduction

8.1 This report contains a wealth of information about the planning and conduct of the 2011 Census in Northern Ireland. It has noted that many aspects of the Census were new and worked well. However, it also reports some challenges and issues, for which, in resolving, NISRA identified lessons to be learned in taking forward plans for any similar census operation in the future. Consequently, this chapter looks at the key conclusions to emerge from the 2011 Census project and summarises the key lessons learned.

Highlights from the 2011 Census

8.2 There are many highlights from the 2011 Census, which, where relevant, will be used and built upon for the next Census. But the value of any census is determined by the quality and utility of outputs. One of the key aims of the census was not only to maximise coverage across Northern Ireland but also to minimise variation in levels of response between areas and within population sub-groups (such as between age/sex population groups). In effect, the whole census design and operation was geared to ensuring that this could be achieved through:

- appropriate design of the field operation and the accompanying processes such as publicity, public interface (being able to answer the public's questions) and online completion;
- maintaining the confidentiality of the information collected to ensure public trust and, therefore, public response both for this census and future censuses;
- user and community engagement to advise and support the operation; and
- capture and processing of census questionnaires and responses and the effective and efficient cleansing and validating of the associated data.

8.3 The key successes of the 2011 Census were:

- better engagement with users and other stakeholders, thereby engendering higher levels of support for and confidence in the census;
- inclusion of several new topics on the census questionnaire;
- a high level of overall response;
- development of a purpose-built address register to facilitate mail-out of questionnaires and improved management of the field operation, including questionnaire tracking;
- restructuring of field force duties to enable more resource to be focused on following up non-response, while employing a reduced field force;
- introduction of a secure online response facility;
- outsourcing of a range of support activities to specialist service providers; and
- more flexible means of dissemination and analysis of an increased range of census data via the NINIS and NISRA websites, including the development of innovative data visualisation techniques.

Looking forward to the 2021 Census

8.4 The information paper ‘The Future Provision of Census of Population Information for Northern Ireland’⁶¹ sets out NISRA’s position for a 2021 Census. With the technological and societal changes that are likely to occur over the next decade in mind, it will be important to build on some of the key lessons from the 2011 Census in order to deliver a census of equivalent quality or better next time. NISRA will focus on planning for a census in 2021 which will be primarily online, while offering alternative modes of completion where necessary. It also aims to make best use of technology and administrative data in its design, building on the online approach used successfully in the 2011 Census.

⁶¹ ‘The Future Provision of Census of Population Information for Northern Ireland’ is available from: <http://www.nisra.gov.uk/archive/census/2021/planning/the-future-provision-of-census-of-population-information-for-northern-ireland.pdf>

Programme Management

8.5 The management structure adopted for the 2011 Census, with representation from the three UK Census Offices at each level, allowed for the necessary coordination required between the offices. Any strategic approach to the governance of the 2021 Census should include a commitment from the National Statistician and the Registrars General for Scotland and for Northern Ireland to work together towards unifying approaches to the Census across the UK, with particular emphasis again on establishing common outputs.

Project management

8.6 Project managers and their teams were able to meet the majority of project objectives. External consultants were brought in to support contract and risk management activities as sufficient in-house expertise and experience was not available. Early assessment should be made for the 2021 Census of the extent to which internal resource needs to be supplemented, so that this can be put in place prior to any planned tests and rehearsal.

Financial management

8.7 The 2011 Census was delivered to an overall budget of £25 million over the 10 year cycle 2005/2006 to 2014/2015. It is clear that NISRA benefited from being part of a joint Census operation with ONS, although the extent of this is not readily quantifiable.

Legislation and the Parliamentary Process

8.8 The legislative programme for a census in 2021 is likely to be broadly similar to that conducted for the 2011 Census. That is, before any census can be carried out, the primary legislation – the Census Act (Northern Ireland) 1969 – requires two pieces of secondary legislation to be approved by the Northern Ireland Assembly: a Census Order, followed by Census Regulations.

8.9 In securing the necessary legislation for the 2011 Census, there were a number of lessons should be considered for the next census:

- The 2011 Census of Northern Ireland Proposals paper is a statement covering key aspects of the census operation, such as: the topics for which information is to be collected on the questionnaire; the arrangements for conducting the census in the field; the processing of data and disseminating results; the confidentiality provisions to protect

the data; and requirements for the legislation necessary to implement these arrangements. This is a valuable document setting out plans for the census well in advance of the event, and becomes a useful reference tool in the run up to the legislation process and the census itself. A similar document should be produced for 2021.

- Involving experienced NISRA staff, who are aware of the detailed and legislative procedures for the census and of the Census Order, is beneficial.
- Keeping up-to-date, detailed briefing materials, designed for multi-purpose use is critical. This ensures the necessary preparation of timely, consistent and clear briefings at short notice, making the passage of the legislation smoother.
- When dealing with Ministers, government departments and the Northern Ireland Assembly, the timing of planned activities and events can easily be disrupted by procedural delays and other circumstances beyond the control of NISRA. Therefore, a clear plan with good risk mitigation to minimise delays is crucial to ensure legislation is approved by the imposed deadline.

Address Register

- 8.10 The address register was central to the operational design of the 2011 Census. The register developed for the 2011 Census enabled NISRA to address and uniquely code every Census questionnaire before distribution. As plans for the 2021 Census are developed, with the primary form of response online, the address register will be even more central to a good design and successful operation.
- 8.11 Since 2011, NISRA has been working with the Land and Property Services (LPS) to further develop the Ordnance Survey of Northern Ireland's POINTER address database, which provides one definitive source of accurate spatial address data. NISRA will continue to work with LPS to share some of the key lessons to ensure that this service will meet the address requirements of any future census design.

The issues include:

- Continuing to work and build new relationships with stakeholders to maximise the quality of the address register and identify new information that may also be relevant to addresses and the census operation (for example, whether or not the property is vacant).
- Further work will be needed to research and test the business rules to decide which addresses should be included and excluded. The hardest judgement is balancing the risk of under-coverage with the risk of over-coverage.
- NISRA's field address check prior to delivery to identify new addresses gave some value for money but should be used only as a last resort. Fulfilling any requirement for the manual reviewing of individual addresses should fully explore automated or office based checking rather than by field staff.
- Building a separate register of CEs remains a requirement because of the specific definitions involved. Any source products need to be thoroughly understood in terms of coverage, definitions, and whether they contain sub-addresses. The task should not be divorced from compiling the residential list because this increases the risk of duplication. The residential and communal establishment lists should be linked and maintained in tandem.
- Addresses change all the time – it is impossible to get a perfect list – and so it is essential to clearly define and communicate quality goals at the start. It is important to be aware of the weaknesses of lists used and how these will impact the public and other processes, ideally with targeted testing in the field.

Stakeholder Management

8.12 A census has an exceptionally large number of stakeholders having varying degrees of influence and interest in the various aspects of the census operation. Managing the several interactions with these stakeholders is important to a successful operation, achieving good coverage and realising the benefits of the census through the use of the census results.

- 8.13 It was recognised that the numerous stakeholder groups would require different methods and degrees of approach, and thus, different modes of engagement were developed to reflect this. Overall, the engagement process can be considered a success and was a key contributory factor in assisting NISRA in reaching its objectives and the utilisation of its outputs.
- 8.14 The local knowledge and intelligence provided by certain stakeholders helped NISRA to target its communications more effectively. In looking ahead ten years, a more diverse society can be expected, suggesting that building on the successful 2011 engagement programme will be crucial to delivering a successful census.

Community liaison programme

- 8.15 While the 2011 Community Liaison initiative was designed as a result of the success of the 2001 Census liaison activities. Pro-active engagement was recognised as an essential part of the 2011 Census process, and this began at an early stage in the run-up to the 2007 Test. In support of the strategic aims and objectives of the 2011 Census, the strategy supported the active engagement of communities at local levels to increase the overall response rates in their areas.
- 8.16 The programme clearly played its part in helping NISRA to achieve its 2011 Census response rates, further tangible achievements flowed from the engagement with local communities. These can be summarised as follows:
- access to current, established, and effective networks and communication channels set up by such communities;
 - access to translators (contract with NICEM);
 - designing tailored approaches to what best suits different groups (for the Traveller community, for example, invitation to present and interact at a Traveller related event organised by Belfast City Council);
 - partnership with influential and strategic organisations, including RNIB and RNID, that resulted in targeted information campaigns and sign-posting to help lines and facilities provided; and
 - hints and tips on best methods of engagement.

Lessons learned

- 8.17 Notwithstanding the success of the programme, some key lessons were learned, which have informed recommendations for a similar programme in any future census. These included:
- *Supporting material.* It is important to provide supporting publicity materials, which can be passed on direct to community organisations, to enable them to give their own presentations with the right messages to be cascaded down through networks, much earlier in the programme.
 - *Face-to-face contact.* There is no substitute for personal, face-to-face contact. The most effective engagement is achieved in-person; in such a way that there is no competition or conflict of interest in asking direct questions that really make the difference to a particular section of the population.
 - *Strategic planning.* To develop an approach where regional activities are followed-up at the local level allows both parties to assimilate first-hand, up-to-date information into effective plans.
 - *Early engagement, consultation and planning.* At regional level to enable discussions and reasoning to cascade down to grassroots and preparations to be made for supplemental actions to maximise participation.

Data Collection and the Field Operation

- 8.18 The collection of responses from 750,000 households is the most challenging aspect of the census and is critical to delivering robust, high quality census statistics. Data collection covers a number of different activities that are heavily inter-related to ensure that the public are aware of the census, can easily respond and/or access additional information/support that they require to complete their questionnaire. And to ensure that this takes place requires the recruitment, training and management of a large field force, a complex logistical operation to provide the field staff with relevant materials and pay systems, and for the public, an online completion facility.
- 8.19 Planning for the field operation of the 2011 Census in Northern Ireland began in 2005, alongside other elements of the programme. The issues encountered in 2001 informed a number of key design decisions that led to

further fundamental changes to the structure and management of the large field force.

- 8.20 NISRA assessed these design decisions through a large-scale test in 2007, and a rehearsal in 2009. The testing programme enabled processes and procedures to be refined and ensured decisions were evidence based.
- 8.21 The decision to make the 2011 Census the first one to deliver questionnaires primarily by post enabled the size and structure of the field force to be primarily based on the effort needed to follow-up non-responding households, rather than on the effort needed to deliver questionnaires. The savings from using Post Out rather than hand delivery meant that the focus of effort shifted to follow-up, with considerably more hours being spent on follow-up activities compared to 2001.
- 8.22 Recruiting, paying and training the field force was managed in-house in conjunction with the provider of these services to the NICS – HRConnect. The approach worked very well. Notable achievements were: the streamlining of the recruitment processes; the implementation of required disclosure checks for all field staff; and the robustness and accuracy of the payroll function. Although cascade training worked well, it was felt that the delivery of training by field managers could have been improved. Additionally, field staff found that the Field Staff training DVD (developed in-house by Census Office HQ staff) was extremely useful and expressed a view that a more detailed DVD covering all aspects of the job would have helped them understand the role and duties better.
- 8.23 Although some issues arose, such as, a shortfall of enumerators in some areas, NISRA had mitigated against such risks. As NISRA had anticipated there would be some localised recruitment difficulties, procedures were in place to allow field staff to undertake double workloads where appropriate. This meant that the issue did not adversely affect the follow-up operation.
- 8.24 Around 765,000 questionnaires were successfully delivered by Royal Mail in the week from 14 March – 19 March, with 95 per cent of these delivered by Wednesday 16 March. By the end of the follow-up operation, they had collected, receipted and delivered to the data capture centre 85 per cent of questionnaires returned.
- 8.25 The development of a questionnaire tracking system that could track each single questionnaire was important and provided key field information that was lacking in 2001. This system enabled NISRA and the field managers to

monitor and manage the follow-up operations far more effectively. The QT was updated daily as questionnaires were returned.

- 8.26 The enumeration of CEs, special accommodation sites and special population groups was improved by NISRA's greater focus on such groups and by having this work undertaken by Census Office HQ staff (for large CEs) and by CTCs (for smaller CEs).
- 8.27 The 2011 Census has been highly successful in meeting or exceeding some very demanding targets. The follow-up field operation played a significant part in this success, despite the adverse trends of a changing society and lower response rates in survey taking generally.
- 8.28 Each census is very different and is designed to take account of the societal challenges relevant at the time and to maximise the benefit of improved and increased use of technology; the next census will be no different. There were some key generic lessons learned during the data collection phase that should be considered in the design and operation of the next census.

Key Lessons Learned

- 8.29 An issue for the 2011 field operation was the overloading of the CTC role in relation to the interaction with the QT system, particularly in areas where there were high volumes of questionnaire deactivations, activation of new addresses and Dummy form completion). As a result, NISRA had to assist CTCs with new address activations and had to pay additional fees to certain CTCs where time spent on the tasks significantly exceeded that anticipated.
- 8.30 With respect to the CAM role, it was apparent that CAMs were recruited slightly early (September 2010). Unlike in 2001, CAMs were not involved in the recruitment process in 2011 and, consequently their appointment could have been delayed until November 2010.
- 8.31 Arising from these lessons learned, the recommendations for any field operation for the 2021 Census are:
- Build considerable contingency time into the field management roles – for this type of operation it is a fair assumption that there will be unplanned operational issues to deal with, and contingency should be allowed for these in the task analysis.
 - Ensure IT related tasks are properly scoped and volume tested.

- Consider impact of external commitments (to other jobs) of managers on Census operations.
- Make sure that the management roles include time to actually manage – coaching, developing and motivating their teams should be a key task that, if done properly, should optimise the value of the field operation.
- Avoid late operational changes if possible, for example the mail drop of replacement questionnaires at final follow-up, or at least be realistic as to what the operational impact might be, and work harder to mitigate for potential problems.
- Produce a more comprehensive training DVD for use by all field staff.
- Consider revising the field staff terms and conditions of employment to require staff to work a certain proportion of their time (possibly 50 per cent) at evenings and weekends. This might vary for 2021 (assuming a fair proportion of visits need to be made to support members of the public who are not willing or able to complete the census online).

8.32 The main enumeration problems that were encountered in 2011 (such as: second homes/holiday homes; new developments; gated communities; and particular hard to count student areas) are set to remain relevant for the 2021 census. To deal with these, NISRA stuck with a tried and tested method – follow-up visits if a response was not received. This may result in persuading a reluctant householder to take part, or in the completion of Dummy forms. Although the field work required to complete Dummy forms was quite labour intensive, it often resulted in enumerators just making educated guesses on what lay behind the front doors. NISRA needs to think through more what can be done with any address information gathered in advance and if there are alternative ways of obtaining some of the Dummy form information.

8.33 A key principle to bear in mind with any large operation is the importance of simplicity. A modern census is intrinsically complex with large numbers of inter-related teams, systems and processes. For field staff, there is a need to try and keep their tasks simple enough for them to be trained en masse in a relatively short period, so they understand their tasks and can do them effectively. It is difficult to communicate complex changes to procedures without leaving room for misinterpretation. Various last minute training instructions tended to result in processes that were more convoluted and

labour intensive for field staff. A clear and simple process, that field staff understood from the start and were properly trained on, would have maximised the effectiveness of the procedures.

8.34 The recommendations for the 2021 Census in relation to field operations are:

- Work is needed to further develop the 2011 strategy of using field staff to identify and resolve local enumeration problems. For example, having a local presence to investigate address issues that are hard to resolve centrally could bring much value both before and during the operational period. These aspects should be considered early, as part of the overall field design.
- Consider creating a team within Census Office HQ to undertake the enumeration all CEs and secure accommodation addresses.
- Review the effectiveness of the Dummy form as a way of sourcing information on non-responding households. In some cases, administrative data, or work done on the address register could perhaps provide more accurate information in a more cost effective way.
- Consider procedures to cope with the clustering effect of the 2011 enumeration problems in student areas and second homes in holiday areas and non-response. There may be a need to prepare different field strategies for different types of hard to count areas.
- Contingencies for all enumeration problems need to be developed early, so that their effectiveness can be optimised. A guiding principle is to avoid late changes unless they are really necessary and attempt to keep field processes simple.
- Consider revising the field staff terms and conditions of employment to require staff to work a certain proportion of their time (possibly 50 per cent) at evenings and weekends. This might vary for 2021 (assuming a fair proportion of visits need to be made to support members of the public who are not willing or able to complete the census online).

8.35 In some instances, field staff experienced problems in receiving all the supplies they needed to do their jobs. Issues ranged from the incorrect supply of materials and delays with restocking of essential supplies of questionnaires, to a shortage of printer cartridges needed for CTCs to print

out their follow-up lists. Additionally, late changes in operational procedures caused issues with the unavailability of Dummy forms and replacement questionnaires. Although many of these issues were somewhat small and pertinent to 2011, it is anticipated that similar issues may still be relevant in 2021.

8.36 The higher lessons to learn are:

- The problem of issuing the right supplies to the right people at the right time remains a high risk to the success of any field operation. Even if a future field operation is much smaller than in 2011 (because of the anticipated increased levels of online responses), the field operation will still be a vast and complex logistical process with the potential to cause a good deal of error and delay.
- As well as creating practical problems, failure to deliver supplies has a big effect on field staff morale and on their confidence in NISRA.

8.37 The key recommendations for the 2021 Census in relation to supplies are:

- It is probable that the demand for the provision of supplies to field will be lower than in previous censuses. However, the success of this part of the operation presents significant risks if it is not done well, and it should not be taken for granted that problems will be resolved in an ad hoc way. It is important to test the associated processes, systems and any contractors as fully as possible.
- Undertake more contingency planning to establish the processes if supply routes break down.
- The use of one or two field offices should be considered. Although there are likely to be fewer paper questionnaires issued, additional hubs could help alleviate other supply issues and could double up as venues for recruitment, training, etc.

8.38 In the earlier years of the census cycle, the major procurements of systems and services soaked up a lot of the most experienced resource. This was understandable given their size and impact. Timings around contract management were challenging, and the size and cost of these projects meant that they often constrained other parts of the operation. The timing of the award of contracts had several negative effects on the development of field procedures:

- The operational design of the field work was sometimes constrained by what the supplier could do in the time, such that not all the requirements were fully delivered.
- Procedures were constrained by the limitations of what the QT system could deliver, which led to more labour intensive planning of, for example, the special enumeration.
- The 2007 Test was very different to the 2009 Rehearsal and 2011 Census, using many different systems and contractors to interface with field staff. Consequently, NISRA was not able to test all the field activities that would take place in the census itself.
- Limited time to test some of the systems remotely led to issues such as localised connectivity problems during the main operation.

8.39 The key recommendations for the 2021 Census are:

- The resource required for contract management and its timing remains an area that could lead to risks for any field operation next time. From a field perspective, awarding the contracts earlier would be ideal, but this may not be possible due to financial and practical implications. More emphasis should be placed on strengthening the links between the operational delivery and the contract management teams, to generate the best from both.
- The testing programme needs to be realistic for the timescales to which NISRA needs to work. It may be better to have more smaller-scale tests initially than to carry out a full-scale test at a time when systems and processes are still too under-developed.
- The complexity of special enumeration should not be under-estimated; early development of this work should save money and effort later on.

Census Coverage Survey

8.40 As in 2001, NISRA carried out a census coverage survey soon after the main Census fieldwork was completed. This was described in Chapter 4 – Data Collection. The main purpose of the CCS was to gather information about a representative sample of the population to enable, after comparisons with the census respondents, measurement and adjustment for both undercount and overcount.

8.41 The Northern Ireland CCS was conducted by NISRA's Central Survey Unit (CSU). It involved contacting approximately 15,000 households to establish – through a face-to-face interview – the number and key characteristics of everyone living within each household. The CCS was successful in that it was conducted on schedule, within budget and provided sufficiently robust information to enable the statistical adjustments for coverage. The overall response rate (81.9 per cent) was disappointing, compared with that achieved by ONS in England and Wales (90.4 per cent, including self-completed questionnaires which were left at households that had not been contacted by the end of the field period).

8.42 In any future CCS, there should be a review of the sample that may provide further changes/improvements to the measurement of coverage. In addition, in the light of the main lessons learned from the 2011 CCS, several of recommendations have been proposed for consideration in any future similar exercise.

- Consider promoting the CCS in all publicity material for the main census, to raise its profile as an essential part of the census process.
- Ensure that the CCS is put high on the agenda of local districts, while being careful to assure the independence of the survey.
- Review the interview methods, particularly for hard-to-contact householders to understand possible alternative methods for achieving contact and interviews earlier in the process.
- Understand the evolving survey environment and how this can improve the CCS operation, in particular:
 - the changes in working patterns, which can mean that a householder is available at varying times of the day;
 - the increase in gated communities and households with limited access (such as concierge controlled buildings and personal intercoms); and
 - the rise in householders emailing Census Office HQ direct to query the voluntary nature of the CCS and their obligation to take part.

8.43 A key difference between Northern Ireland (and Scotland and Wales) and England in 2011 was the Assembly elections in May 2011 – while there were council elections in England, they were much lower key in England than Northern Ireland Assembly elections. Accordingly, Northern Ireland CCS interviewers were in the field in the immediate aftermath of Assembly elections and this may have affected response rates. A similar position is likely to occur in 2021, with Assembly elections scheduled for May 2021.

Data Processing

8.44 In future censuses, the requirements and implementation of data processing may be very different because of an increased use of online completion, changes in the requirements for outputs and the methods for producing them, and the timing and the dissemination methods. Therefore, it is likely that a number of the more detailed lessons learned from the 2011 Census processing will not be relevant. However, there are some strategic lessons that are important to heed for any future census, and this section seeks to highlight these.

Data capture and coding

8.45 Chapter 5 – Data Processing and Quality Assurance reported that the levels of accuracy of the data capture and coding processes were assessed against set targets. However, the setting of targets, the training of coders, and the quality checks around this work should be reviewed against the main requirements for census information from decade to decade.

Coding of workplace data

8.46 One of the main uses of the census data in recent years has been the analysis of workplace statistics and information on commuting patterns. Although the achieved levels of accuracy were higher than the targets, there were some small localised issues that meant that in some areas some of the commuting patterns looked implausible. The coding of this information has always been problematic as the respondents often do not know either their own workplace address or the address for others in the household. This situation is not likely to change, but more needs to be considered in the design of the online questionnaire, the capture and coding of responses, and data processing to improve the accuracy of the information collected.

Date of birth capture

- 8.47 Age, derived from date of birth, is critical to later statistical processing and is a key constituent of almost all census output. Despite the very high level of capture and coding accuracy, some issues were associated with scanning of information. There was evidence that the numbers 6 and 7 were sometimes scanned as 1s. For the vast majority of errors, this has a negligible and unnoticeable effect, although, for example, the impact of year of birth of 1961 being captured as 1911 was noticeable as the number of centenarians did not accord with comparator data sources during the quality assurance phase.

Downstream Processing

- 8.48 The various systems and processes that were designed to clean, validate, adjust and protect the data largely worked as they were designed to within the overall timetable that had been set for outputs. Again, given developments in technology and online data capture, this is an area that is likely to undergo significant change for the next census. However, there are some over-arching strategic design and methodological lessons that should be considered as part of the future census design.

Timetable

- 8.49 In the 2011 Census, the first results were produced on 16 July 2012, nearly 16 months after Census Day. The speed of the release of results from the census depends on how quickly the information can be processed, validated, quality assured, tabulated, and made ready for publication. Although this date met the target that was set for the census and was, in fact, a small improvement on the equivalent date in 2001, much more work needs to be done to further improve processing time.
- 8.50 Such improvement will rely on a number of factors, in particular on the extent of any increase in the take-up of online response, which can significantly reduce the amount of time required to capture and code the responses. Another potential opportunity for time saving rests in the two major statistical processes of coverage assessment and adjustment, and edit and imputation – both of which are designed to be carried out sequentially on an area by area basis. The method of assessing and evaluating the quality of the data in this way needs to be reconsidered, so that these processes can still accurately clean and adjust the data but do not have to rely on the completion of the processing of entire areas before they can be signed off.

Systems and system development

8.51 One of the main difficulties experienced in downstream processing was that the systems did not undergo complete testing prior to live processing using data with census type scenarios. The effect of this was that:

- many requests for change needed to be implemented to ensure that the processing would work in an automated, robust manner; and
- delays within individual processes had knock-on effects on later processes, and which in turn created pressure on the operational teams and reduced time for some other activities such as quality checking.

8.52 For the next census, the design and development of systems need to be ready earlier in the process, so that a full end-to-end test using simulated census data can be undertaken. This would ideally form an integral part of any census rehearsal to enable small corrections and improvements to be made as necessary prior to the live processing.

Edit and imputation

8.53 As in previous censuses (and as noted in Chapter 5 – Data Processing and Quality Assurance) the primary objective of the 2011 item editing and imputation strategy was to produce a complete and consistent database that was adjusted for non-response bias by estimating the unobserved observations (non-responses). The following three key principles were adopted to achieve this objective:

- impute all missing data (except the voluntary question religion) to provide a complete and consistent database;
- minimise the number of changes to inconsistent data; and
- ensure all changes made to observed data maintain the quality of the data.

8.54 Overall, the implementation of the methodology and processes to impute the 2011 Census data was considered to be successful in meeting the main aims and objectives of the project in that:

- After edit and imputation, the database of responding persons was complete and consistent.

- Changes to observed data were minimised by imputing inconsistencies and non-response simultaneously with Census Edit and Imputation System (CANCEIS), which minimises the changes made to failed records by selecting from a list of nearest minimum-change donors.
- Priority was given to the key variables that defined the population estimates and bases.
- The distributions of non-response were estimated for all questions, with the majority having no issues. For age, there was some movement in the distributions of single years of age around the working and student age boundaries. This has identified areas for future research.

8.55 Processing was generally smooth and efficient; there were, however, some challenges in implementing the methods in an automated production environment:

- The implementation of the method was more iterative than originally planned. Future statistical projects such as this would benefit from an iterative design and testing approach with strong feedback loops and flexibility to make changes to the methods during live operations.
- The period for tuning and parameterisation was also longer than expected. This is an important phase in the implementation and should be adequately timetabled.
- Edit and imputation is the first step that validates consistency between different questions. It would be beneficial to allow time for analysis and modification to the underlying database when edit and imputation is first run on the live data.
- The proliferation of rare characteristics (soft edit conditions) was higher than expected. This has been identified as an area for future research, with the possibility of using reordering within the donor household, or including additional edits before or during imputation.
- Additional deterministic edits were applied prior to imputation. Although imputing non-response and editing inconsistencies worked well for the majority of questions, deterministic editing is likely to be required to address systematic response errors in the data. Some of these may be anticipated based on past census data, although new errors are always

also likely to arise. Flexibility for adding new deterministic edits prior to imputation would therefore be an advantage; for example, in deciding whether or not a child aged under four should be recorded as being in full-time education. This would help to improve the plausibility of the outputs and improve user confidence in the results.

Coverage assessment and adjustment

8.56 The primary objective of the coverage assessment strategy was to identify and adjust for the number of people and households not counted in the 2011 Census. A secondary objective was to identify and adjust for the number of people and households counted more than once, or counted in the wrong place, in the 2011 Census. The strategy was to build on the 2001 One Number Census (ONC) framework, using it as a platform to develop an improved methodology. A detailed description of the methods and results are described in Chapter 5 – Data Processing and Quality Assurance.

Census Under Enumeration Project

8.57 As described in Chapter 5 – Data Processing and Quality Assurance, the CUE project was initiated to augment the coverage of the Census enumeration by using activity based administrative data from the medical records system to supply core information on non-responding households. The CUE is considered to have been a major successful innovation in the 2011 Census. Ultimately, in the database from which Census outputs were produced, 94 per cent of households were populated direct through Census returns, 4 per cent were populated through CUE records and the remaining 2 per cent populated through the coverage adjustment based on the CCS. CUE records are inherently more robust than records imputed through coverage adjustment, and the spatial distribution is particularly robust. The CUE approach attracted international attention and will form the basis of NISRA's methodological approach in 2021.

CCS sample design

8.58 The sample design for the CCS was another of the key improvements made to the methodology, and it proved to be successful in providing the data for measuring coverage patterns across local authorities and by age and sex. It also contributed to the aim of reducing the variability in quality of estimates between areas by allocating a larger sample to harder-to-count areas.

8.59 While the CCS sample design was more skewed to harder-to-count areas than in 2001, the methodology for defining hard-to-count strata in Northern Ireland was essentially unchanged, being based on strata defined by deprivation, urban/rural and religion. In 2001, the CCS design was aided by the design of the 1997 Census Test that provided up-to-date response rates for the resulting design strata. Similar up-to-date response rates by strata were not available for 2011 – the 2007 Test did not use a representative sample design. For 2021, the design of the CCS will require some fundamental considerations, including: will the deprivation, urban/rural and religion strata are still appropriate; and will there be up-to-date estimates of likely response rates. More importantly perhaps, if administrative data play a major role in population estimation, the design of the CCS will be required to incorporate an assessment of the population coverage of the relevant administrative sources.

Matching

- 8.60 The overall matching strategy worked well, although there were some issues with its implementation. The automatic strategy was good and the methodology worked flexibly and extremely well. Constrained by the requirement for no false positive matches, the automatic matching made exact and very high probability matches for 60 per cent of households and 70 per cent of persons. This was despite the quality of the capture of names from both the census and CCS being lower than expected, mainly due to poor handwriting.
- 8.61 The main issue with the matching implementation was the structure of the clerical matching. The system specification was very rigid in an attempt to achieve near perfect accuracy. This included enforced triple checking of all unmatched records (one by one) by experts and supervisors. The system as specified did ensure accuracy, although with an unsatisfactory effect on timeliness. There was no flexibility within the specified system to adjust the matching strategy.
- 8.62 In summary, the lessons learned from this were that:
- systems that involve a large manual element, particularly where high quality is essential, are more challenging in practice than the underpinning methodology might suggest; and

- operational procedures require significant time and resource to develop, test and refine.

Estimation

- 8.63 The estimation methodology worked well to provide a consistent analysis of census coverage. The outcomes met prior expectations, and provided a rich source of information on patterns across Northern Ireland and within each estimation area. The improvements to the methodology, which were the use of simpler ratio-based estimators, improved bias adjustments and the use of bootstrapping for variance estimation, worked as expected and were integrated into the processing procedures. The Dual System Estimation (DSE) bias adjustment was successful, and the adjustments made were plausible (based on the alternative household estimate).
- 8.64 There were some issues with elements of the estimation methodology. Most importantly, the method for measuring coverage within household bias, using social survey data, did not detect any bias. This did not mean it did not exist, and any residual bias was included as part of the national adjustment process. The lesson is that it is highly likely that coverage within household in a CCS and social surveys is equally correlated with non-response within households captured in the census. For any future assessment, some form of administrative data may be the only source that should be used for this.

Adjustment

- 8.65 The basic imputation methodology worked well to provide a database that was fully adjusted to take account of the measured coverage, adding wholly missed households and persons within existing households.
- 8.66 However, the implementation of the methodology was challenging. The main issue was with the calibration process, which derived the household weights for imputing wholly missed households (and the people within them). The method attempted to calibrate the household weights to both household estimates (tenure and household size) and person estimates (age-sex group, activity last week and religion). The issue was that, although it was guaranteed to obtain the correct weighted total of households by tenure, it was not always close enough to the person estimates by age and sex. The development work had not highlighted this issue, although further simulations might have done so. A solution was delivered that allowed the adjustment process to proceed, although with delays that impacted on later processes.

8.67 The key lessons learned from the adjustment system problems were not to leave development and testing of the most complex part of the methodology until last, and to ensure there are sufficient statistical resources to deal with any unforeseen methodological problems. This will, however, be part of a more major consideration – if administrative data play a greater direct role in population estimation (such as CUE in Northern Ireland), the adjustment process will need to be reconsidered to include assessment of the coverage of the administrative sources.

Conclusions

8.68 Statistical developments and operations utilised within a coverage system must have flexibility in their development and implementation, allowing planned time for the methods and systems to be updated when real data become available, as development using old data may not tease out all issues and not all results can be predicted.

8.69 The key messages arising from the evaluation of the coverage system, which will feed into future developments, are that:

- working groups, involving relevant experts and business areas, and external reviews are critical to ensuring that high quality methods are developed to provide the basis for engaging with stakeholders; and
- transparency in communications is important to help users understand complex methods.

8.70 There are also some lower level recommendations for any future methodological development and implementation:

- any future hard-to-count index can be refined using the data obtained from the 2011 Census;
- it is important to consider the possibility that any sample can be, due to random chance, unbalanced and, therefore, a mitigation strategy (such as a specific adjustment) is important;
- for any future area-based survey, construction of a good estimate of the number of households within each sampled area would make implementation easier; and
- for any future assessment of within household bias in a DSE, some form of administrative data may be the only source that could be used for this.

Statistical Disclosure Control

- 8.71 In both 2001 and 2011, NISRA and ONS applied common SDC procedures. Although the following text is based on evaluation reports from ONS, the same lessons apply equally to Northern Ireland and England & Wales. The record swapping measures described in Chapter 6 – Confidentiality, Privacy and Security proved to be a satisfactory method for the protecting the statistical confidentiality during data processing, although they did create some difficulties during later stages of output production. The level of detail available was slightly lower (in terms of number of rows and columns) in many tables compared with equivalent output in 2001, and this may have disappointed some users, although it did have a distinct advantage of providing considerably more detail in terms of small counts.
- 8.72 This was not apparent to users at first and, in hindsight, ONS and NISRA might have assisted users more by demonstrating clearly how the advantages outweighed the perceived disadvantages. One of the main alternative SDC options considered (a form of cell perturbation developed by the Australian Bureau of Statistics) had shown considerable promise, and would have allowed both small counts and the detail, although there was insufficient confidence in being able (a) to test the method within the tight timescale, and (b) convince users that a method that gave rise to inconsistent counts, albeit rarely, was better.
- 8.73 The fall-out from the users' well-voiced dissatisfaction with the 2001 small cell adjustment methodology weighed heavily on ONS's and NISRA's shoulders, and record swapping was regarded as a safe option, compared to the relatively untried Australian method. Engagement with users was quite strong, although the user community were pushing for assurance that ONS and NISRA were definitely not going to use small cell adjustment again.
- 8.74 The SDC evaluation and development work started at around the same time as the statement made by the National Statistician and Registrars General in November 2006. They agreed to aim for a common UK SDC methodology for 2011 Census outputs, and considered that, as long as there has been systematic perturbation of the data, the guarantee in the Code of Practice would be met. It was, therefore, agreed that small counts (0s, 1s, and 2s) could be included in publicly disseminated Census tables provided that:
- uncertainty as to whether the small cell is a true value has been systematically created; and

- creating that uncertainty does not significantly damage the data.
- 8.75 Though pre- and post-tabular methods were considered, the National Statistician and Registrars General expressed a preference for pre-tabular methods, provided there was no undue damage to the data.
- 8.76 Subsequent to agreeing the UK SDC Policy, the Statistics and Registration Service Act 2007 (SRSA) came into force; Section 39 (2) of which defined 'personal information' as information which relates to and identifies a particular person, or body corporate. It specified what constitutes a disclosure of information and the sanctions that may apply for any breach of confidentiality.
- 8.77 The UK SDC Policy was in line with Section 39 of the SRSA. In hindsight, however, there was confusion as to what was meant by 'uncertainty' and, particularly, the level of uncertainty that would be acceptable. It would have been advisable to have obtained a clear statement at this point as to what was the appropriate level, how to measure it, and any related legal issues.
- 8.78 Key lessons to emerge from the 2011 Census experience were that in any future census:
- a record key/cell key perturbation method should be considered in order to provide small counts and greater detail in tables. The challenge will be to persuade users that the presence of a small number of slight inconsistencies between tables is acceptable;
 - 'Real' test data should be available;
 - any census test or rehearsal should test the whole of the process from start to finish, including SDC processing and outputs;
 - a UK-wide disclosure control Working Group should be set up during the evaluation and development phases;
 - a clear steer on legal issues should be obtained early in the evaluation; and
 - the measures of 'doubt' should be revisited.

Quality Assurance

- 8.79 QA of the 2011 Census was more rigorous and comprehensive than in any previous Northern Ireland Censuses given the availability of:

- a very accurate, up-to-date Address Register;
- data from early Census returns;
- a wider range of external administrative ‘comparator’ datasets in a format that could be readily incorporated into the QA systems; and
- the latest IT resources available (with more functionality etc).

8.80 The evidence assessed also included operational intelligence and diagnostics from the coverage estimation process.

8.81 Access to the ‘Early Extract Data’ proved invaluable as it gave NISRA the opportunity to examine the data prior to the planned formal deliveries. Hence, the QA team were able to identify, at an early stage:

- if the data that would eventually be delivered by the processing contractor were being captured and processed in accordance with the agreed data capture requirement specification;
- if there was any evidence of systematic errors being introduced through, for example, phantom ticks arising from marks on the questionnaire being mistakenly read as proper responses, automated coding errors that require fine tuning and other inconsistencies arising from the manual coding process; and
- how well the questionnaire had been understood by the general public (for example, whether the routing had been followed correctly).

8.82 In relation to Comparator Datasets, NISRA invested considerable effort on the liaison with suppliers (on both securing and understanding their data) which enhanced the use made of the data and undoubtedly minimised the burden on data suppliers.

8.83 All QA work on the Northern Ireland data was undertaken within a secure environment in NISRA, which necessitated the ONS supply of the Northern Ireland data in ‘extracts’, taken after each stage of the Downstream Processing (DSP) operation. A data management structure was developed using SAS software that catered for the management of different versions of the extracts due to data rollbacks etc. Although this worked well, the use of a SAS environment necessitated a lot of ‘housekeeping’ code, which consisted of lengthy, complicated routines. In hindsight, the use of a SQL environment

may have been better, in that it would have resulted in smaller routines that would have been quicker to execute and many more staff could have developed their skills in the use of SQL.

- 8.84 A lot of effort was required to ensure that the stored data could be read into the QA systems and the data matched, and many data matching problems were encountered, for example, Male/Female did not match with M/F. The way forward on this next time would be to establish agreed categories for each variable in advance of the work.
- 8.85 This was a challenging stage in the work due to our lack of SAS expertise; in hindsight, our SAS training in January 2010 was too early and too generic. Although we would have been clearer on our requirements a year later, that would have been too late.
- 8.86 A key issue to take forward for the QA process would be to further improve the tools used to QA the results, in particular focusing on those that can be used to readily generate visualisations of possible errors or implausible estimates.
- 8.87 QA checks on the base numbers by age and sex for each Local Government District (LGD) were agreed at an early stage; these numbers were checked and confirmed after each new delivery extract of data from the ONS DSP.
- 8.88 The second level of checking, referred to as 'Topic' checks, was developed in conjunction with ONS colleagues. This process checked each Census output variable against: (i) related output variables; and (ii) the distributions of external comparators. For each, the list of related output variables and external comparators (together with the corresponding detailed checks to be carried out) was agreed in advance. In practice, each member of the QA team was responsible for the QA of a list of variables. Each variable was quality assured and the findings were presented to Census Senior Management for their consideration, with a view to being either signed-off or subject to further checks prior to further consideration. This process worked particularly well, and an overview sheet was maintained, so that daily and weekly progress could be generated at any stage.
- 8.89 Combined, these two sets of checks provided invaluable reassurance to the Census Senior Management team that: (i) ongoing database changes were as expected due to the DSP processes; and (ii) previously specified data-file amendments had been applied successfully.

- 8.90 A further QA exercise was undertaken for each CE to examine the geographic location of each, its 'establishment type' and how that matched the characteristics of its residents, this approach worked well and provided a lot of reassurance.
- 8.91 Throughout all of the QA work (which was integral to DSP), NISRA staff attended daily teleconferences with ONS colleagues (Data Quality Forum and Processing Operations Management Forum); this approach worked particularly well and again reinforced the harmonised approach taken with ONS.
- 8.92 The CQS provided a very useful and reassuring insight into the overall quality of the information being reported through the Census. It found that there was a high degree of similarity between the overall response distributions derived from the answers provided through the CQS face-to-face interviews, and the corresponding Census returns. Against this background, the results from the CQS were generally encouraging and confirm that the 2011 Census data are of a high quality and fit for purpose. These findings were reinforced as they were generated using a harmonised approach to that taken by ONS, involving close liaison on the design and selections, and more importantly the analysis and reporting.
- 8.93 The detail and range of the QA process, combined with the findings of the CQS, all of which were undertaken using a harmonised approach with that of ONS, have given NISRA confidence that the Census estimates are fit for purpose.

Benefits Realisation

- 8.94 The ultimate benefits of a census are realised only when users of census data exploit the published outputs. Therefore, the investment of time and resources in a census can be justified only when the results are made accessible, and the outputs meet the needs of users.
- 8.95 In seeking to measure the benefits users have realised from the 2011 Census outputs, NISRA's primary objectives have been to:
- raise awareness of the outputs;
 - maximise the utility of these outputs by facilitating and encouraging their widespread use;

- evaluate the benefits arising to key users from these outputs; and
- learn lessons to be taken into account when planning for the 2021 Census with a view to further enhancing the user experience.

8.96 Ahead of a separate, more detailed report on benefits realisation, this section presents some case studies to illustrate how the 2011 Census has realised benefits for key users, including:

- NISRA senior managers based across NICS;
- members of CAG;
- respondents to the 2011 Census User Satisfaction Survey;
- customers requesting commissioned outputs;
- customers requiring assistance with research projects;
- ONS Census colleagues working on UK products and benefits realisation; and
- ONS census advisory groups.

Examples of Benefits Realised

8.97 Benefits from the 2011 Census have accrued across a wide range of areas, notably:

- business and commerce;
- resource allocation;
- funding bids;
- service planning;
- regional and local comparisons;
- policy making and monitoring;
- equality and diversity assessments;
- social and academic research;
- benchmark for other data sources;

- media coverage; and
- user engagement.

Business and commerce

- 8.98 The benefits of census data to the private sector fall broadly into two categories. Firstly, they provide an intermediate input to the geo-demographic resellers and specialist consultants, who, in turn, generate added value. Secondly, they help to inform the business decisions of a large and varied set of private sector users, including market researchers, retailers and financial service providers.
- 8.99 For instance, to inform multi-million pound investment decisions, such as suitable locations for new stores and related decisions on marketing, recruitment, products to stock and service provision, the commercial sector utilises a wide range of data. These decisions depend heavily on the availability of relevant, accurate, localised data. In this respect, the gravity models used by large retailers typically incorporate census data on: resident, workplace and daytime populations; household type; social grade; origin-destination; and car/van availability.

Resource allocation

- 8.100 Population data from the 2011 Census at low geography levels inform the Barnett Formula, used by Treasury to allocate marginal resources on a comparable basis across the UK. In addition, DHSSPS uses 2011 Census data in its Weighted Capitation Formula to determine equitable allocation of available resources, based on population characteristics and relative need across nine care programme areas.

Service planning

- 8.101 Origin-destination data from the 2011 Census (on journeys to work and place of study at Small Area level) have been supplied to Transport NI (Department for Regional Development (DRD)), and will play an important part of the evidence base for a £1.8 million project to develop new transport models for Belfast and Northern Ireland.
- 8.102 The Northern Ireland Housing Executive (NIHE) commissioned research to develop a Census-based model of future housing need in Northern Ireland. In addition, to take into account the different school sectors within Northern

Ireland, the Department of Education (DE) has used 2011 Census data on religion or religion brought up in at electoral ward level to inform the planning of the schools' estate.

Regional and local comparisons

- 8.103 With the reform of local government in Northern Ireland reducing the number of LGDs to eleven from 1 April 2015, Belfast City Council has used 2011 Census data to produce demographic and socio-economic profiles of the Small Areas that constitute the new council areas, enabling comparisons across the new LGDs.
- 8.104 The inclusion for the first time of a question on Ulster-Scots in the 2011 Census has enabled the Department of Culture, Arts and Leisure (DCAL) to identify Irish speaking Gaeltacht areas and Ulster-Scots homelands across Northern Ireland and to compare the characteristics of those living in such areas with other areas.

Policy making and monitoring

- 8.105 On behalf of the NIHE, 2011 Census data have been used to model three key housing quality indicators at LGD level in relation to strategies on fuel poverty, decent homes and dwelling unfitness. This research, which benefited from additional work by Census Office staff in relation to the full 2011 Census dataset, enabled a reduction in the sample size of a recent Northern Ireland House Condition Survey and realised cost savings in the region of £250,000.
- 8.106 The Department of Enterprise, Trade and Investment (DETI) has used 2011 Census-based data on population and household projections to support the evidence base for the development of a Financial Inclusion Strategy for Northern Ireland. DHSSPS has also used 2011 Census commissioned outputs to produce the report 'Kinship Care – Children Living in Households without a Parent Present Northern Ireland 2011'. In addition, the Department for Social Development (DSD) used 2011 Census data in 'grossing up' Family Resources Survey data when modelling the impact of Welfare Reform.

Equality and diversity assessments

- 8.107 Linked to the Racial Equality Strategy, the Office of the First Minister and Deputy First Minister (OFMDFM) will use some of the ethnicity, identity and

language questions included for the first time in the 2011 Census to develop an algorithm to supplement data on minority ethnic groups or migrants gathered through surveys or administrative data sources. In addition, the Equality Commission wishes to utilise 2011 Census data for travel to work areas as an evidence base for employers to conduct Article 55 Reviews of the composition of their workforces and employment practices.

Social and academic research

8.108 Several NILS projects have already utilised the 2011 Census, including those on: national identity and religion affiliation over time; housing tenure, residential mobility and health transitions; and in/out migration from rural areas. In relation to such research, only the census collects the required information at the relevant individual, household and spatial scales.

Media coverage

8.109 Members of CAG highlighted the greater media exposure given to the 2011 Census than to its predecessor. While this was attributed in part to additional media briefings by Census Office staff and the inclusion of new questions relating to identity, passports and language, the release of the Key Statistics at a time of street protests linked to the Belfast City Council decision to restrict the flying of the union flag to designated days was a major factor. Rather than the usual focus on religion, the results on national identity dominated local media coverage of the Key Statistics and were the subject of several television programmes.

User engagement

8.110 Key users generally praised the quality of the customer service function provided by Census Office and the extent of communication with users, including newsletters, roadshows, consultations and advance notification of table specifications and outputs. They acknowledged the greater range of outputs and accompanying analysis from the 2011 Census, including recent developments in data visualisation, for example, the re-launched NINIS website, infographics and interactive content. They were also appreciative of the additive nature of the tabular outputs and the publication of the four main 2011 Census releases to a pre-announced timetable.

8.111 In addition, users also highlighted some challenges to build on for the 2021 Census, including the need for a shortening of the tail of outputs following the main releases and a more flexible, online analysis or table-building facility.

Abbreviations

A

AA	Assembly Area
AD	Attribute Disclosures
ADRC-NI	Administrative Data Research Centre for Northern Ireland

B

BSL	British Sign Language
BSS	Broadcasting Support Services

C

CAG	Census Advisory Group
CAM	Census Area Manager
CAMS	Controlled Access Microdata Sample
CANCEIS	Census Edit and Imputation System
CCS	Census Coverage Survey
CE	Communal Establishment
CMIS	Census Management Information System
COA	Census Output Area
COB	Census Operations Board
CPB	Census Programme Board
CPNI	Centre for Protection of National Infrastructure
CQS	Census Quality Survey
CRM	Census Regional Manager
CSO	Central Statistics Office
CTC	Census Team Co-ordinator
CUE	Census Under Enumeration

D

DC	District Council
DCAL	Department of Culture, Arts and Leisure
DE	Department of Education
DETI	Department of Enterprise, Trade and Investment
DFP HR	Department of Finance and Personnel's Human Resource branch
DHSSPS	Department of Health, Social Services and Public Safety
DPB	Demographic Policy Board
DRD	Department for Regional Development

DSD	Department for Social Development
DSE	Dual Systems Estimation
DSP	Downstream Processing
DVO	Derived Variables for Outputs
DVP	Derived Variables for Processing

E

EC	European Commission
ED	Enumeration District
EDRN	Enumeration District Record Number
ELB	Education and Library Board
ERB	Enumeration Record Book
EU	European Union

F

FSM	Flat-bed Sorting Machine
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G

GDP	Gross Domestic Product
GRO	General Register Office
GROS	General Register Office for Scotland

H

HMO	Houses of Multiple Occupancy
HQ	Head Quarters
HSCT	Health and Social Care Trust
HSSB	Health and Social Services Board
HtC	Hard to Count

I

IA	Information Assurance
IAC	Internet Access Code
IACP	Invariant ABS Cell Perturbation
IDC	Internet Data Capture
IPS	International Passenger Survey
IVR	Interactive Voice Response

L

LGD	Local Government District
LMUK	Lockheed Martin UK Ltd
LPS	Land and Property Services

M

MEP	Member of the European Parliament
MLA	Member of the Legislative Assembly
MoD	Ministry of Defence
MP	Members of Parliament
MSOA	Middle Super Output Area

N

NAO	National Audit Office
NICEM	Northern Ireland Council for Ethnic Minorities
NICFC	Northern Ireland Census Fulfilment Centre
NICS	Northern Ireland Civil Service
NICVA	Northern Ireland Council for Voluntary Action
NIHE	Northern Ireland Housing Executive
NILS	Northern Ireland Longitudinal Study
NINIS	Northern Ireland Neighbourhood Information Service
NIO	Northern Ireland Office
NIPS	Northern Ireland Prison Service
NISRA	Northern Ireland Statistics and Research Agency
NRS	National Records of Scotland
NUTS	Nomenclature of Units for Territorial Statistics

O

OFMDFM	Office of the First Minister and Deputy First Minister
OGL	Open Government Licence
ONC	One Number Census
ONS	Office for National Statistics
OOH	Out-of-Home

P

PIA	Privacy Impact Assessment
PPS	Public Prosecution Service
PRINCE	Projects In Controlled Environment (project management system)

PSNI Police Service for Northern Ireland
PSO Project Support Office

Q

QA Quality Assurance
QT Questionnaire Tracking

R

RNIB Royal National Institute of Blind People
RNID Royal National Institute for Deaf People

S

SA Small Area
SAC Statistics Advisory Committee
SCG Statistics Co-ordinating Group
SDC Statistical Disclosure Control
SIC2007 Standard Industrial Classification 2007
SLA Service Level Agreement
SOA Super Output Area
SOC2010 Standard Occupational Classification 2010
SRO Senior Responsible Owner
SRSA Statistics and Registration Service Act 2007
STR Space-Time Research

U

UAA Undelivered As Addressed
UK United Kingdom
UKCC United Kingdom Census Committee
UKCHC United Kingdom Census Harmonisation Committee
UKCQDWG United Kingdom Census Questionnaire Design Working Group
UKDC UK Data Capture
UKDS United Kingdom Data Service
UN United Nations
UNECE United Nations Economic Commission for Europe

V

VML Virtual Microdata Laboratory

Annex

Sample 2011 Census Household Questionnaire





Household Questionnaire

Northern Ireland



Return to:
FREEPOST 2011 Census,
Processing Centre

Why the Census Matters

The census is used to help plan and fund services for your community - services like transport, education and health.

Everyone should be included in the census - all people, households and overnight visitors.

Please complete your census questionnaire on 27 March 2011, or as soon as possible afterwards. You can fill it in online or on paper.

Taking part in the census is very important and it is also compulsory. You could face a fine if you don't participate or if you supply false information.

Your personal information is protected by law and will be kept confidential.

So help tomorrow take shape and be part of the 2011 Census.

TN Caven

Dr T N Caven
Registrar General, Northern Ireland

Complete online

www.census.gov.uk/ni

Your personal internet access code is:

OR fill in this paper questionnaire and post it back using the pre-paid envelope supplied.

If your address is incorrect or missing, enter your correct address here:

Postcode

Declaration

This questionnaire has been completed to the best of my knowledge and belief.

Signature

Date

Telephone number

We may contact you if we need to collect missing information.

If you have lost your envelope, please return to:
FREEPOST 2011 Census, Processing Centre.

Where can you get help?



www.census.gov.uk/ni



Census helpline 0300 0201 120



Text Relay 18001 0300 0201 170

Help is available in large print and Braille.

H4



122001

Before you start

Who should complete this questionnaire?

The householder is responsible for ensuring that this questionnaire is completed and returned.

The **householder** is the person who lives, or is present, at this address who:

- owns/rents (or jointly owns/rents) the accommodation; and/or
- is responsible (or jointly responsible) for paying the household bills and expenses.

A **household** is:

- one person living alone; or
- a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area.

What should you complete on this questionnaire?

- **Household questions on pages 3-6** about this household and its accommodation.
- **Individual questions on pages 7-30** for every person who usually lives in this household.
Every person who has been, or intends to be, in the UK for 3 months or more should be included in these questions at their usual UK address.
- **Visitor questions on the back page (page 32)** for all other people staying overnight in this household on 27 March 2011.

It is important to include visitors staying overnight in this household to make sure no-one is missed. Visitors who usually live elsewhere in the UK must also be included on a census questionnaire at their usual address.

You will find further information about who to include in this questionnaire on page 31.

Will you need extra questionnaires?

- If there are more than six people in this household, or there are more than three visitors staying overnight, you can choose to either complete the entire questionnaire online, or fill in this questionnaire and contact us to request one or more **Continuation Questionnaires**.
- If any member of this household aged 16 or over does not want to disclose their information to others in the household, you can request an **Individual Questionnaire**. Remember to include these people in Household questions (H1 to H14) on this questionnaire, but leave blank their Individual questions (1 to 45).
- If there is more than one household at this address, contact us to request one or more additional **Household Questionnaires**.

You can request extra questionnaires online at www.census.gov.uk/ni or by calling 0300 0201 120.

This questionnaire will be scanned by a computer.

You should:

- use black or blue ink to answer;
- tick your answers within the box like this:
- print your answers within the box like this:

S	M	I	T	H
---	---	---	---	---

 Use capital letters - one letter per box;
- correct any mistakes by filling in the box like this:

S	M	✗	I	T	H		
---	---	---	---	---	---	--	--

 or:

S	M	✗	I	T	H		
---	---	---	---	---	---	--	--
- continue onto the next line (if possible) when a word will not fit, like this:

U	N	I	V	E	R	S	I	T
Y		S	T	R	E	E	T	
- follow the ➔ **Go to** instructions and leave any questions or pages you do not need to answer completely blank; any marks or lines can be mistaken for answers.



Household questions

H1 Who usually lives here? ↪ Tick all that apply.

- Me, this is my permanent or family home
- Family members including partners, children, and babies born on or before 27 March 2011
- Students and/or schoolchildren who live away from home during term time
- Housemates, tenants or lodgers
- People who work away from home within the UK, or are members of the Armed Forces, if this is their permanent or family home
- People staying, or expecting to stay, in a residential establishment (such as a hospital, care home, or hostel) for less than 6 months
- People who usually live outside the UK who are staying in the UK for 3 months or more
- People who are temporarily outside the UK for less than 12 months
- People staying temporarily who usually live in the UK but do not have another UK address (for example, relatives, friends)
- Other people who usually live here, including anyone temporarily away from home (see page 31 for further information)

OR No-one usually lives here (for example, this is a second address or holiday home) → **Go to H4**

H2 Counting everyone you included in question H1, how many people usually live here?

H3 Starting with yourself, list the names of all the people counted in question H2 including children, babies and lodgers.

↪ If a member of this household has requested an Individual Questionnaire, tick the box beside their name and leave blank the Individual questions (1 to 45) for that person.

	First name	Last name	Individual Questionnaire requested?
Youself (Person 1)	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>	<input type="checkbox"/>
Person 2	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>	<input type="checkbox"/>
Person 3	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>	<input type="checkbox"/>
Person 4	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>	<input type="checkbox"/>
Person 5	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>	<input type="checkbox"/>
Person 6	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>	<input type="checkbox"/>

↪ If there are more than six people, complete the entire questionnaire online or contact us to get a Continuation Questionnaire.

H4 Apart from everyone counted in question H2, who else is staying overnight here on 27 March 2011? These people are counted as visitors. Remember to include children and babies.

↪ Tick all that apply.

- People who usually live somewhere else in the UK (for example, boy/girlfriends, friends, relatives)
- People staying here because it is their second address (for example, for work). Their permanent or family home is elsewhere
- People who usually live outside the UK who are staying in the UK for less than 3 months
- People here on holiday

OR There are no visitors staying here on 27 March 2011 → **Go to H6**

H5 Counting only the people included in question H4, how many visitors are staying overnight here on 27 March 2011?

- ↪ Remember to answer the Visitor questions on the back page (page 32) for these people.
- ↪ If no-one usually lives here (there are only visitors staying here) answer questions H7 to H11 on page 6 and then go to the back page (page 32) to answer the Visitor questions.



Household questions - continued

H6 How are members of this household related to each other? If members are not related, tick the 'Unrelated' box.

- If there are more than six people, contact us to request a Continuation Questionnaire.
- If you live alone ➔ **Go to H7**
- If no-one usually lives here and there are no visitors staying overnight here on 27 March 2011, answer questions H7 to H11 on page 6 and then go to the Declaration on the front page.

Example:

This shows how a household with two parents and four children are related to each other.

Name of Person 1	Name of Person 2	Name of Person 3
First name ROBERT	First name MARY	First name GILLIAN
Last name SMITH	Last name SMITH	Last name SMITH
	How is Person 2 related to Person: ➔ 1	How is Person 3 related to Persons: ➔ 1 2
	Husband or wife <input checked="" type="checkbox"/>	Husband or wife <input type="checkbox"/> <input type="checkbox"/>
	Same-sex civil partner <input type="checkbox"/>	Same-sex civil partner <input type="checkbox"/> <input type="checkbox"/>
	Partner <input type="checkbox"/>	Partner <input type="checkbox"/> <input checked="" type="checkbox"/>
	Son or daughter <input type="checkbox"/>	Son or daughter <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	Stepchild <input type="checkbox"/>	Stepchild <input type="checkbox"/> <input type="checkbox"/>
	Brother or sister <input type="checkbox"/>	Brother or sister <input type="checkbox"/> <input type="checkbox"/>

- Using the same order you used in question H3 (page 3), write the name of everyone who usually lives here at the top of each column. Remember to include children, babies and people who have requested an Individual Questionnaire. Do not include visitors.
- Tick a box to show the relationship of each person to each of the other members of this household.

Name of Person 1	Name of Person 2	Name of Person 3
First name <input type="text"/>	First name <input type="text"/>	First name <input type="text"/>
Last name <input type="text"/>	Last name <input type="text"/>	Last name <input type="text"/>
<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>ENTER NAME OF PERSON 1 HERE AS IN QUESTION H3</p> </div>	How is Person 2 related to Person: ➔ 1	How is Person 3 related to Persons: ➔ 1 2
	Husband or wife <input type="checkbox"/>	Husband or wife <input type="checkbox"/> <input type="checkbox"/>
	Same-sex civil partner <input type="checkbox"/>	Same-sex civil partner <input type="checkbox"/> <input type="checkbox"/>
	Partner <input type="checkbox"/>	Partner <input type="checkbox"/> <input type="checkbox"/>
	Son or daughter <input type="checkbox"/>	Son or daughter <input type="checkbox"/> <input type="checkbox"/>
	Stepchild <input type="checkbox"/>	Stepchild <input type="checkbox"/> <input type="checkbox"/>
	Brother or sister <input type="checkbox"/>	Brother or sister <input type="checkbox"/> <input type="checkbox"/>
	Stepbrother or stepsister <input type="checkbox"/>	Stepbrother or stepsister <input type="checkbox"/> <input type="checkbox"/>
	Mother or father <input type="checkbox"/>	Mother or father <input type="checkbox"/> <input type="checkbox"/>
	Stepmother or stepfather <input type="checkbox"/>	Stepmother or stepfather <input type="checkbox"/> <input type="checkbox"/>
	Grandchild <input type="checkbox"/>	Grandchild <input type="checkbox"/> <input type="checkbox"/>
	Grandparent <input type="checkbox"/>	Grandparent <input type="checkbox"/> <input type="checkbox"/>
	Relation - other <input type="checkbox"/>	Relation - other <input type="checkbox"/> <input type="checkbox"/>
Unrelated (including foster child) <input type="checkbox"/>	Unrelated (including foster child) <input type="checkbox"/> <input type="checkbox"/>	





For Person 5 (James), there is a tick next to 'Son or daughter' in the columns for Persons 1 and 2 to show he is the son of Robert and Mary. Columns 3 and 4 show he is the brother of Persons 3 and 4 (Gillian and Peter).

Name of Person 4

First name

Last name

How is Person 4 related to Persons: → **1** **2** **3**

Husband or wife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Same-sex civil partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Son or daughter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stepchild	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brother or sister	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name of Person 5

First name

Last name

How is Person 5 related to Persons: → **1** **2** **3** **4**

Husband or wife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Same-sex civil partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Son or daughter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stepchild	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brother or sister	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Name of Person 6

First name

Last name

How is Person 6 related to Persons: → **1** **2** **3** **4** **5**

Husband or wife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Same-sex civil partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Son or daughter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stepchild	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brother or sister	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Name of Person 4

First name

Last name

How is Person 4 related to Persons: → **1** **2** **3**

Husband or wife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Same-sex civil partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Son or daughter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stepchild	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brother or sister	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stepbrother or stepsister	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mother or father	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stepmother or stepfather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grandchild	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grandparent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relation - other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unrelated (including foster child)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Name of Person 5

First name

Last name

How is Person 5 related to Persons: → **1** **2** **3** **4**

Husband or wife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Same-sex civil partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Son or daughter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stepchild	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brother or sister	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stepbrother or stepsister	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mother or father	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stepmother or stepfather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grandchild	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grandparent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relation - other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unrelated (including foster child)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Name of Person 6

First name

Last name

How is Person 6 related to Persons: → **1** **2** **3** **4** **5**

Husband or wife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Same-sex civil partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Son or daughter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stepchild	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brother or sister	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stepbrother or stepsister	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mother or father	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stepmother or stepfather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grandchild	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grandparent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relation - other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unrelated (including foster child)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Household questions - continued

H7 What type of accommodation is this?

A whole house or bungalow that is:

- detached
- semi-detached
- terraced (including end-terrace)

A flat, maisonette or apartment that is:

- in a purpose-built block of flats or tenement
- part of a converted or shared house (including bedsits)
- in a commercial building (for example, in an office building, hotel, or over a shop)

A mobile or temporary structure:

- a caravan or other mobile or temporary structure

H8 Is this household's accommodation self-contained?

- This means that all the rooms, including the kitchen, bathroom and toilet, are behind a door that only this household can use.
- Yes, all the rooms are behind a door that only this household can use
- No

H9 How many rooms are available for use only by this household?

- Do not count bathrooms, toilets, halls or landings, or rooms that can only be used for storage such as cupboards.
- Count all other rooms (for example, kitchens, living rooms, utility rooms, bedrooms, studies and conservatories).
- If two rooms have been converted into one, count them as one room.

Number of rooms

H10 Has this accommodation been designed or adapted for:

- Tick all that apply.
- wheelchair usage?
- other physical or mobility difficulties?
- visual difficulties?
- hearing difficulties?
- other, write in

- none of the above

H11 What type of central heating does this accommodation have?

- Tick all that apply, whether or not you use it.
- Central heating is a central system that generates heat for multiple rooms.
- No central heating
- Gas
- Electric (including storage heaters)
- Oil
- Solid fuel (for example, wood, coal)
- Other central heating

H12 Does your household own or rent this accommodation?

- Tick one box only.
- Owns outright ➔ **Goto H14**
- Owns with a mortgage or loan ➔ **Goto H14**
- Part owns and part rents (shared ownership)
- Rents (with or without housing benefit)
- Lives here rent-free

H13 Who is your landlord?

- Tick one box only.
- Northern Ireland Housing Executive
- Housing association or charitable trust
- Private landlord or letting agency
- Employer of a household member
- Relative or friend of a household member
- Other

H14 In total, how many cars or vans are owned, or available for use, by members of this household?

- Include any company car(s) or van(s) available for private use.
- None
- 1
- 2
- 3
- 4 or more, write in number



Individual questions - Person 1 start here

1 What is your name? (Person 1 on page 3)

First name

Last name

2 What is your sex?

- Male Female

3 What is your date of birth?

Day Month Year

4 On 27 March 2011, what is your legal marital or same-sex civil partnership status?

- | | |
|--|--|
| <input type="checkbox"/> Never married and never registered a same-sex civil partnership | <input type="checkbox"/> In a registered same-sex civil partnership |
| <input type="checkbox"/> Married | <input type="checkbox"/> Separated, but still legally in a same-sex civil partnership |
| <input type="checkbox"/> Separated, but still legally married | <input type="checkbox"/> Formerly in a same-sex civil partnership which is now legally dissolved |
| <input type="checkbox"/> Divorced | <input type="checkbox"/> Surviving partner from a same-sex civil partnership |
| <input type="checkbox"/> Widowed | |

5 Are you a schoolchild or student in full-time education?

- Yes
 No → **Go to 7**

6 During term time, do you live:

- at the address on the front of this questionnaire?
 at another address? → **Go to 45**

7 What is your country of birth?

- Northern Ireland → **Go to 10**
 England → **Go to 10**
 Scotland → **Go to 10**
 Wales → **Go to 10**
 Republic of Ireland
 Elsewhere, write in the current name of country

8 If you arrived to live in the United Kingdom:

- on or after 27 March 2010 → **Go to 9**
- before 27 March 2010 → **Go to 10**

9 Including the time you have already spent in the United Kingdom, how long do you intend to stay in the UK?

- Less than 6 months
 6 months or more but less than 12 months
 12 months or more

10 Have you lived outside Northern Ireland for a continuous period of one year or more?

- Yes
 No → **Go to 13**

11 During this time outside Northern Ireland, what was the last country you lived in?

12 When did you most recently arrive to live in Northern Ireland?

Month Year

13 One year ago, what was your usual address?

- If you had no usual address one year ago, state the address where you were staying.
- The address on the front of this questionnaire
 Student term-time/boarding school address in the UK, write in term-time address below
 Another address in the UK, write in below

Postcode

OR Outside the UK, write in country

14 What passports do you hold?

- Tick all that apply.
- United Kingdom
 Ireland
 Other, write in

- None



Person 1 - continued

15 How would you describe your national identity?

➔ Tick all that apply.

- British Irish Northern Irish
 English Scottish Welsh
 Other, write in

16 What is your ethnic group?

➔ Tick one box only.

- White
 Chinese
 Irish Traveller
 Indian
 Pakistani
 Bangladeshi
 Black Caribbean
 Black African
 Black Other
 Mixed ethnic group, write in

Any other ethnic group, write in

17 What religion, religious denomination or body do you belong to?

- Roman Catholic ➔ Go to **19**
 Presbyterian Church in Ireland ➔ Go to **19**
 Church of Ireland ➔ Go to **19**
 Methodist Church in Ireland ➔ Go to **19**
 Other, write in ➔ Go to **19**

None

18 What religion, religious denomination or body were you brought up in?

- Roman Catholic
 Presbyterian Church in Ireland
 Church of Ireland
 Methodist Church in Ireland
 Other, write in

None

19 What is your main language?

- English ➔ Go to **21**
 Other, write in (including British/Irish Sign Languages)

20 How well can you speak English?

Very well Well Not well Not at all

-

21 Can you understand, speak, read or write Irish or Ulster-Scots?

➔ Tick all that apply.

	No ability	Understand	Speak	Read	Write
Irish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ulster-Scots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22 Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months?

➔ Include problems related to old age.

- Yes, limited a lot
 Yes, limited a little
 No

23 Do you have any of the following conditions which have lasted, or are expected to last, at least 12 months?

➔ Tick all that apply.

- Deafness or partial hearing loss
 Blindness or partial sight loss
 Communication difficulty (a difficulty with speaking or making yourself understood)
 A mobility or dexterity difficulty (a condition that substantially limits one or more basic physical activities such as walking, climbing stairs, lifting or carrying)
 A learning difficulty, an intellectual difficulty, or a social or behavioural difficulty
 An emotional, psychological or mental health condition (such as depression or schizophrenia)
 Long-term pain or discomfort
 Shortness of breath or difficulty breathing (such as asthma)
 Frequent periods of confusion or memory loss
 A chronic illness (such as cancer, HIV, diabetes, heart disease or epilepsy)
 Other condition
 No condition



**24** How is your health in general?

Very good Good Fair Bad Very bad

 25 Do you look after, or give any help or support to family members, friends, neighbours or others because of either:

- long-term physical or mental ill-health/disability?
- problems related to old age?
- Do not count anything you do as part of your paid employment.
 - No
 - Yes, 1 - 19 hours a week
 - Yes, 20 - 49 hours a week
 - Yes, 50 or more hours a week

26 If you are aged 16 or over ➔ **Go to 27**If you are aged 15 or under ➔ **Go to 43****27** Which of these qualifications do you have?

- Tick **every** box that applies if you have **any** of the qualifications listed.
- If your UK qualification is not listed, tick the box that contains its nearest equivalent.
- If you have qualifications you gained outside the UK, tick the box that indicates this and the nearest UK equivalents (if known).
- 1-4 O Levels/CSEs/GCSEs (any grades), Entry Level, Foundation Diploma
- NVQ Level 1, Foundation GNVQ, Basic/Essential Skills
- 5+ O Levels (passes)/CSEs (grade 1)/GCSEs (grades A*-C), School Certificate, 1 A Level/2-3 AS Levels/VCEs, Higher Diploma
- NVQ Level 2, Intermediate GNVQ, City and Guilds Craft, BTEC First/General Diploma, RSA Diploma
- Apprenticeship
- 2+ A Levels/VCEs, 4+ AS Levels, Higher School Certificate, Progression/Advanced Diploma
- NVQ Level 3, Advanced GNVQ, City and Guilds Advanced Craft, ONC, OND, BTEC National, RSA Advanced Diploma
- Degree (for example, BA, BSc), Higher degree (for example, MA, PhD, PGCE)
- NVQ Level 4-5, HNC, HND, RSA Higher Diploma, BTEC Higher Level, Foundation degree
- Professional qualifications (for example, teaching, nursing, accountancy)
- Other vocational/work-related qualifications
- Qualifications gained outside the UK
- No qualifications

28 In the past year, have you helped with or carried out any voluntary work without pay? Yes No**29** Last week, were you:

- Tick all that apply.
- Include any paid work, including casual or temporary work, even if only for one hour.
- working as an employee? ➔ **Go to 35**
- on a government sponsored ➔ **Go to 35** training scheme?
- self-employed or freelance? ➔ **Go to 35**
- working, paid or unpaid, for your own or your family's business? ➔ **Go to 35**
- away from work ill, on maternity leave, on holiday or temporarily laid off? ➔ **Go to 35**
- doing any other kind of paid work? ➔ **Go to 35**
- none of the above

30 Were you actively looking for any kind of paid work during the last four weeks? Yes No**31** If a job had been available last week, could you have started it within two weeks? Yes No**32** Last week, were you waiting to start a job already obtained? Yes No**33** Last week, were you:

- Tick all that apply.
- retired (whether receiving a pension or not)?
- a student?
- looking after home or family?
- long-term sick or disabled?
- other

34 Have you ever worked? Yes, write in the year that you last worked ➔ **Go to 35** No, have never worked ➔ **Go to 43**

Further information

Students / schoolchildren who live away from home during term time

All students or schoolchildren who live away from home during term time need to be included on a questionnaire at both their home and term-time addresses.

- At their home address they must be included in Household questions (H1 to H3 and H6) and Individual questions (1 to 6).
- At their term-time address they must be included in Household questions (H1 to H3 and H6) and Individual questions (1 to 45).

Children with parents who live apart

Children with parents who live apart should be included on the questionnaire for the address where they spend the majority of their time. They should be included in Household questions (H1 to H3 and H6) and Individual questions (1 to 45).

If they are staying overnight at their other address on 27 March 2011, they must also be included on the questionnaire for that other address in Household questions (H4 and H5) and Visitor questions (V1 to V4).

If they live equally between two addresses, they should be included at the address where they are staying overnight on 27 March 2011, in Household questions (H1 to H3 and H6) and Individual questions (1 to 45).

People from outside the UK

People from outside the UK whose total length of stay in the UK will be 3 months or more should be included on the questionnaire where they usually stay. They should be included in Household questions (H1 to H3 and H6) and Individual questions (1 to 45).

If their total length of stay is less than 3 months, they should only be included as a visitor on the questionnaire at the address where they are staying overnight on 27 March 2011, in Household questions (H4 and H5) and Visitor questions (V1 to V4).

People with no usual address

People who usually live in the UK, but have no usual address, should be included on the questionnaire at the address where they are staying overnight on 27 March 2011, in Household questions (H1 to H3 and H6) and Individual questions (1 to 45).

Households away on 27 March 2011

If this address is unoccupied overnight on 27 March 2011 because the whole household is away, the questionnaire should be completed as soon as possible upon their return.

If no-one usually lives here, please answer questions H7 to H11 only.

People temporarily away from home

Anyone who is temporarily away from their permanent or family home on 27 March 2011 should be included at their home address, in Household questions (H1 to H3 and H6) and Individual questions (1 to 45). This includes people who are:

- staying, or expecting to stay, in an establishment (such as a hospital, care home or hostel) for less than 6 months;
- living away from home while working, on holiday or travelling (unless outside the UK for 12 months or more);
- members of the Armed Forces;
- staying at their second address;
- visiting friends or relatives;
- in prison on remand (for any length of time), or sentenced to less than 6 months' imprisonment.

People who live at more than one UK address

People with more than one UK address (for example, people who live away from home while working) should be included on the questionnaire at:

- their permanent or family home; or
- the address where they spend the majority of their time, if they do not have a permanent or family home.

They should be included in Household questions (H1 to H3 and H6) and Individual questions (1 to 45).

If they are staying overnight at their second UK address on 27 March 2011, they must also be included as a visitor on the questionnaire for that address in Household questions (H4 and H5) and Visitor questions (V1 to V4).

Lodgers

Lodgers who live full time at their lodging address should be included on the questionnaire where they lodge, in Household questions (H1 to H3 and H6) and Individual questions (1 to 45).

People who only lodge part time should refer to the other section on this page 'People who live at more than one UK address'.

Unrelated / shared households

One of the householders/tenants must complete Household questions (H1 to H14) and ensure Individual questions (1 to 45) are completed for each household member. The Individual questions may be completed separately by requesting an Individual Questionnaire.



Visitor questions

V How many visitors did you include in question H5?

- None → **Go to** the Declaration on the front page
- 1 to 3 - answer questions V1 to V4 below for each visitor
- 4 or more - answer questions V1 to V4 below for the first three visitors then go to www.census.gov.uk/ni or call 0300 0201 120 to request a Continuation Questionnaire

Visitor A

V1 What is this person's name?

First name

Last name

V2 What is this person's sex?

- Male Female

V3 What is this person's date of birth?

Day Month Year

V4 What is this person's usual UK address?

Postcode

OR Outside the UK, write in country

Visitor B

V1 What is this person's name?

First name

Last name

V2 What is this person's sex?

- Male Female

V3 What is this person's date of birth?

Day Month Year

V4 What is this person's usual UK address?

- Same address as Visitor A

OR

Postcode

OR Outside the UK, write in country

Visitor C

V1 What is this person's name?

First name

Last name

V2 What is this person's sex?

- Male Female

V3 What is this person's date of birth?

Day Month Year

V4 What is this person's usual UK address?

- Same address as Visitor A

OR

Postcode

OR Outside the UK, write in country

Now → Go to the Declaration on the front page.

