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DIFFICULT-TO-MEASURE TOPICS

Difficult-to measure topics in a population and housing census: a United Kingdom perspective

Note by the Office for National Statistics, United Kingdom

Summary

This document identifies the several reasons why a topic that is being considered for inclusion in a traditional census of population and housing may be regarded as 'difficult-to-measure'. The document comments on the reasons why this may be so for a number of those topics which have been recommended for inclusion in a Census by the Conference of European Statisticians¹ and some others that are not included in the Recommendations. The document notes those topics which are unlikely to be included in the 2011 UK Census for one or more of these reasons. The document also recognises that, though difficult to measure, some topics are, nevertheless, being proposed for inclusion. It concludes by suggesting those topics that might be considered the most difficult to measure.

¹ UN Economic Commission for Europe (2006). *Conference of European Statisticians' Recommendations for the 2010 Censuses of Population and Housing*. ECE/CES/STAT/NONE/20006/4. United Nations, New York and Geneva. ISSN 0069-8458.

I. INTRODUCTION

1. When a census topic is described as ‘difficult-to-measure’, what does it mean?
2. Census topics may fail to deliver the sort of information required by users, to the appropriate level of quality demanded, for a number of reasons:
 - (a) because the topic is sensitive to a degree that makes its inclusion in the census unacceptable to a significant proportion of the public;
 - (b) because a question (even if the topic is acceptable) involves concepts, definitions or terminology that are not generally well understood, or that requires a lengthy explanation or instruction to ensure an accurate;
 - (c) because such topics require the knowledge of information not readily known or is unlikely to be recalled accurately;
 - (d) because questions ask for subjective responses or opinions for which there will be no quantifiably correct answer;
 - (e) because the public are suspicious or concerned about the use to which the information will be put; and
 - (f) because changing population dynamics result in necessary changes to the wording of a question between one census and another – making it difficult to measure intercensal change.
3. Some topics may be considered particularly difficult to measure because they fall into more than one of these categories. This document considers, from a UK perspective, why particular topics may be considered difficult for these reasons and will highlight those that, perhaps, should be considered very carefully before including them in a traditional Census.

II. INCOME

4. A case has been made to include a question on income in the last three UK Censuses. Income is widely seen as a more discriminating variable for the purposes of identifying areas of affluence or deprivation than is occupation or housing condition.
5. However, Census Tests prior to both the 2001 and 2011 Censuses have shown a measurable lowering of responses rates among those households in England and Wales where census forms have included a question on income compared with response rates among households where no such question was included. For example, overall household response rates in the 2007 Test in England and Wales were 44,6 per cent for those households who were asked to complete a form that included a question income compared with 47,5 for those without the question.
6. Similar level of non-response in tests prior to the 2001 Census persuaded the UK not to include a question in income at that time, and the outcome of the pre-2011 Census Tests in both Scotland and England and Wales are likely to lead to a similar decision.
7. Income, as well as being a ‘sensitive’ topic is also one that is prone to misunderstanding of the concepts and terminology necessary to seek accurate information. For example, what does

the term ‘income’ mean? The definition offered by the CES Recommendations is only partially helpful:

8. “Income may be defined as (a) income received by each household member and from each source of livelihood (in accordance with the classification of main sources of livelihood proposed excluding loans or reduction of savings and realisation of capital during the preceding twelve months or past year, or (b) total annual household income in cash and in kind from all sources.”

9. Without extensive explanatory notes respondents are often unsure about what to include or not include. For example, does ‘housing benefits’ count as income, and if so if the question is about personal income, to which person in the household does the income apply?

10. The UK experience is that the quality of responses to such a question on its own is poor, but is greatly improved (whether it is about personal or household income) if it is accompanied by a second question on the sources of income that are to be considered. But this requires an additional space on the census form and adds significantly to the burden on households in completing it.

11. Difficulties with questions on income may also arise from a lack of knowledge on the part of the form-filler, leading to the view that this is a particularly difficult topic to measure. In those countries where the responsibility for the completion of the census questionnaire falls on the householder, that person may not always be in a position to report accurately the income of other household members, who may not be able to, or wish to, provide the information themselves.

12. Despite assurances of complete confidentiality given to the public at the time of each censuses, many people have a mistrust of the workings of central government and are determined to remain unconvinced that the personal information collected the census is not passed on to other official organisations for their own administrative purposes.

13. This is most acute when it comes to a question on income, where suspicions that the information will be passed on to the tax authorities are difficult to assuage. Evidence from tests clearly indicate that this concern is a primary cause for non-response rates for this question in the UK to be unacceptably high.

III. ETHNICITY

14. The current CES Recommendations notes that multi-ethnic countries with long-established minorities and/or recently arrived immigrant populations may wish to collect information on the ethnic composition of the population of certain sub-groups of the population. The data are relevant for the understanding of the cultural diversity of the population, the position of ethnic groups in society as well as for the definition and monitoring of anti-discrimination policies.

15. Current UK legislation permits a question on race and nationality to be included in the Census. However it was only after the waves of immigration into the UK in the 1960s and 1970s

that information about racial or ethnic origin could not be accurately derived from the more conventional questions on country of birth and country of parents' birth.

16. A question on ethnic origin was first considered for inclusion in the 1981 Census but despite exhaustive research in the 1970s in getting the wording of the question publicly acceptable, it became clear from the results of the 1979 Census Test in parts of London that there was likely to be demonstration of public opposition to the question that would seriously jeopardise the whole census operation. As a result the question was dropped from the 1981 Census.

17. The difficulty of including these questions in pre-1991 censuses largely stemmed from the concern, at the time, among particular minority groups, about the use to which the information would be put. Particular objections to the 1981 Census question on ethnicity arose from the concerns among the Black African and Caribbean communities in London that the information would be passed on to the immigration officials and used to identify individuals to be forcibly repatriated.

18. However, the demand for such information increased throughout the 1980s, particularly as the number of second and third generation immigrants grew. Further research and question testing showed that public opinion and sensitivity had changed significantly and that there was a call, even among the ethnic minority communities themselves, for this sort of information to be collected in the Census.

19. As a result a question on ethnicity was included in the 1991 Census in England, Wales and Scotland for the first time, and this was widely regarded as one of the key successes. The topic, however, remains one which still presents some particular difficulties.

20. Although the UK has now successfully introduced a question on ethnicity into its Census it should also be noted that the very concept of 'ethnicity' remains unclear to many people, particularly those of mixed parentage or who are second or later generation migrants. Research has shown that people with mixed backgrounds may vary their answer to questions about ethnicity to suit their perception of the form that they are completing; a response to an interviewer may differ from that reported on a self-completion questionnaire. For example, a number of respondents interviewed in the 2001 Census Quality Survey² who had used the 'White British' response category were found, on interview, to be from other ethnic groups. Most explanations for this suggested that the category had been misunderstood to mean 'British nationality'. In total 3.4 per cent of persons interviewed in the Coverage Survey reported an ethnic group different to that recorded on the Census form.

21. In attempt to create a common understanding of the concepts involved in this topic, the UK has in the past sought to use such terms as 'ethnic group', 'ethnic origin', 'racial origin', 'cultural identity' and 'ancestry', but none have achieved a universal clarification. Therefore, the question wording that works the best will continue to be used, for the time being at least,

² Office for National Statistics (2005). *2001 Census: Quality report for England and Wales*. Palgrave Macmillan, London. ISBN 1-4039-8769-6.

even if this refers to a mixture of different characteristics such as geographic origin, nationality and skin colour. For the 2011 Census in England and Wales the concept of ‘national identity’ is being introduced as a distinct element of ethnicity in order to allow indigenous UK residents to identity themselves.

22. In addition to these reasons why ethnicity questions may be considered to be difficult to measure, the topic in UK has to accommodate the ever-changing composition of its multi-cultural society. In recognising additional and new ethnic groups in each successive Census, such as, Arabs, Gypsies, Roma, and Mixed Origin, a direct comparison between the results of one census and other becomes more difficult. This may not make the collection of information in each Census more difficult in itself, but the benefits of including such a topic may become eroded if the measurement of inter-censal change is to be a key requirement.

IV. RELIGION

23. An enquiry into religion was first proposed for the Census in England and Wales as early as 1851 – as a result of the concern, at that time, about declining church attendance. However, because of the concerns expressed by the Parliament of the day that a compulsory census was not the appropriate vehicle to enquire in such matters the question was made voluntary.

24. Though a question had been included in the Census in Northern Ireland since 1971, there was no attempt to repeat it in Great Britain until 2001, when an amendment to the census legislation permitted a question on religion to be included. But, as was the case 150 years earlier, this would only be on provision that the question would again be voluntary.

25. The inclusion of the topic in the 2001 Census enable a better measure of ethnicity to be made, particularly for those minority sub-groups of the population with origins in the Indian sub-continent who tend to prefer to identify themselves in terms of their religion rather than their geographic origins.

26. Despite some public concern that religion was a personal issues and should not be asked in a Census, its inclusion on a voluntary basis diffused some of the major objections, to the extent that despite its voluntary nature, the question suffered only a 7 per cent item non-response rate – this was lower than a number of other question on other more well-established census topics.

27. Issues around subjectivity, similar to those outlined for ethnicity, can apply to questions on religion. For example, some 6,5 per cent of people interviewed in the Census Quality Survey reported having religion different to that recorded in the Census.

28. An additional factor to consider is that religion is a characteristic that may change over time. The religion that person grew up in may not necessarily be that which the person practices later in life.

V. SEXUAL IDENTITY

29. With the recent introduction of legislation in the UK covering a range of equality issues, including sexual equality, a case has been made to include – for the first time in the UK and indeed anywhere – a question on sexual identity for the purposes of providing baseline data to measure levels of discrimination on the grounds of sexual orientation.

30. However, international research in Canada³ and New Zealand⁴, together with more recent investigations by the Census Office in Scotland⁵ has suggested that the topic is not suitable for inclusion in the Census.

31. In a small-scale postal survey carried out by the Census Office in Scotland in 2006, which included a question on sexual orientation, of the 31 per cent of households that responded some 14 per cent did not provide useful data on sexual orientation - either because they elected to tick the 'prefer not to answer' box or declined to complete the question at all. This far outweighed the percentage of respondents who declared a non-heterosexual orientation, and GROS concluded from this that the results would call into question the accuracy of any data gathered by such a question in the Census and hence the utility of the data collected in this way.

32. Furthermore, the terminology and concepts used to attempt to distinguish different sexual behaviour tend to confuse many respondents leading to additional inaccuracies in the responses. If, for example, the topic is seeking to obtain information on sexual practice, research has shown that terms such as 'heterosexual' or 'bi-sexual' are not universally understood or interpreted in the same way.

33. As a result, the UK does not propose to include a question in the 2011 Census. Instead it has initiated a separate project which is seeking to develop a question on sexual identity which can be used in other national surveys.

VI. LEGAL MARITAL STATUS: CIVIL PARTNERSHIP

34. Questions aimed at determining the legal status of the relationship of same sex couples may suffer from different terminology problems. The recent 2006 Census Test in Scotland for example introduced new categories in the marital status question in order to recognise the newly introduced legal same-sex relationship 'civil partnership'. But follow-up research showed that many people did not understand the term. Some thought it referred to a civil marriage ceremony, while others thought it just meant getting on well with their spouse.

³ Statistics Canada (2004). *2006 Census Content Consultation Report*. See <http://www12.statcan.ca/English/census06/products/reference/consultation/contentreport-otherdata.htm>

⁴ Statistics New Zealand (2003). Sexual orientation Focus Group Research. A qualitative study. See <http://www.stats.govt.nz/developments/sexual-orientation-research.htm>

⁵ General Register Office for Scotland (2006). Sexual orientation in the Census. See <http://www.gro-scotland.gov.uk/files/sexual-orientation-in-the-census.pdf>

VII. DISABILITY

35. It is widely recognised, that in order to obtain accurate and relevant information about specific disabilities, no one single question is likely to be successful in the Census. Simple self-completion questions aimed at seeking this information are unlikely to work well. Evidence from the pre-2001 Census question tests for example, showed that the quality of information received from the question asking about a number specific types of disability was poor when compared with an interview-based follow-up.

36. This makes the inclusion of such a topic on a self-completion census form somewhat problematic. Although other countries do so, the UK prefers not to take this approach but instead includes much simpler questions on general health (asking respondent to state whether their health is 'Good', 'Fairly good' or 'Not good' and whether or not a person has any long-term illness or disability which 'limits their daily activities or the work that they do'.

37. However, subjectivity issues are also encountered if any health-related topics are included in the Census since the health of respondent cannot be independently assessed in any follow-up quality check. The UK experience is that asking a very simple question on the general health of a person provides data that correlates very well with use of primary health care and social services at the local area level, and for this reason such a question is now a regular component of the UK Census. Item non-response to this question in the 2001 Census was just 3,1 per cent, though even this question produced different responses from 11,6 per cent of people interviewed in the Quality Survey compared with what was reported in the Census.

VIII. LANGUAGE

38. Subjectivity is also an issue with the topic of language, since questions can only ask the respondent to assess their own linguistic ability or competence. But an additional factor in making this topic difficult to measure is the problem of devising the wording of the question that is appropriate for the purposes for which the information is collected and which the form-filler can understand. If the aim of the topic is to determine the extent to which people are not able to communicate in the national language, this will require an approach different to that if information on mother tongue is required.

39. The UK does not follow a tradition of including a general language question in its Census – though different parts of the UK include a question on knowledge specific to the indigenous Celtic language spoken in Wales, Scotland and Northern Ireland. The UK experience is that it is very difficult to devise a single question on language that effectively delivers information to meet more than one user requirement, particularly so because the very people at whom such a question is aimed are the those that will have the greatest difficulty in understanding and interpreting the question.

IX. CITIZENSHIP

40. After years of pressure from Eurostat and the UN-ECE for the UK to collect information on citizenship, the 2011 Census will for the first time include such a question. Of course, the decision does not only reflect the demand for UK outputs to be as consistent as possible with

those from other EU Member States, but also meets a growing national requirement to collect more relevant information to enable better estimates of international migration to be made.

41. However, the problem still remains that the concept of 'citizenship' is not generally well understood by the British public who have no tradition of recording such a characteristic as part of the various administrative procedures necessary to conduct everyday life. Thus what concepts and wording to use in developing a new question for a UK census?

42. Tests have shown that the best understanding of the purpose of the question is achieved by asking people what passport they are entitled to hold, and this may well be the approach that the UK will adopt for the topic in its 2011 Census. But then an understanding of what is meant by 'entitled to hold' is also by no means universal, and in question testing this wording caused particular problems with persons born outside the UK.

X. ADDRESS FIVE YEARS BEFORE THE CENSUS

43. The Conference of European Statisticians (CES) recommends asking a question on usual address one year before the census as a means of providing information on patterns of recent migration for those countries that do not include a question on place of usual residence and date of arrival. Where this is the case the CES suggest that the place of usual residence five years prior to the census may also be asked. This extension of the time interval allows the capture of a larger number of moves but the CES recognises that this may be cost of an increased uncertainty about the exact timing of the migration.

44. An additional difficulty of such a question (which the UK last included in its 1981 Census) is that while many migrants may be able to recall their previous address five years before the census they are less likely to remember the postcode of that address, which the UK uses to identify the area and location of previous residence. As a result, in such responses the postcode is missing, and this is a difficult variable to impute with accuracy and is both costly and time consuming to attempt to determine the information from alternative sources during data processing.

45. The UK now only includes a question on usual address one year before the Census, but even this question suffered from 4,5 per cent missing responses in 2001.

XI. QUALIFICATIONS

46. Though not recommended by CES as a core topic, the UK has regularly included a question on educational and professional qualifications to assist in the measurement of shortfalls in the provision of education and training and the monitoring of take-up of government initiatives, and in the assessment of the reserves of skilled and qualified people among the unemployed including those not currently seeking work.

47. Though there is always a strong demand for the sort of information that this question can provide, the UK has long recognised that this is one of least well answered questions in the census since many people are not able to recall all the qualification they have obtained.

Particular difficulties are presented: either where qualifications have changed over a number of years people and where people in older age groups tend not to record accurately (or at all) what the equivalent qualification is; or where qualifications have been obtained abroad and where the UK equivalent is not readily known.

48. In the 2001 Census, some 6,2 per cent of respondent failed to answer the question on educational qualifications and 17,2 failed to answer the professional qualifications question, and of those who did respond, 40 per cent were estimated from the Coverage Survey to have failed to report all relevant qualifications obtained.

49. Difficulties also occur when comparing the results from questions on educational qualification in particular in successive censuses, since this is also a topic prone to changing descriptions of response categories not only to reflect the introduction of new qualification and international equivalents but also in an attempt to make the question as simple as possible yet, at the same, meet the users requirements for relevant information.

XII. RESIDENCY TOPICS: (I) USUAL RESIDENCE

50. Though clearly the most fundamental topic for inclusion in a population census, the concept of 'usual residence' is one that is becoming increasingly more difficult to measure. Critical to the understanding of coverage in the Census will be a better measure of those dynamics of societal change that affect the previously well-established concept of usual residence, particularly the increasing tendency towards: weekly commuting; children of divorced or separated parents having more than one home; second homes; and global living patterns.

51. To that end the UK is considering the inclusion of new questions in the 2011 Census asking about second residences and the reasons for, and duration of, staying at such addresses. Together with the information on usual address, responses will enable the UK to better allocate the population to the appropriate area of usual residence determined by the living patterns of households. The information will be particularly useful, for housing and transport planning, to local authorities who will want to know the numbers of people who stay within their area and use local services during the week but who have a usual residence elsewhere.

52. However, evidence from question testing suggests that the concept of 'second residence' is not straightforward. Many people do not know what qualifies as 'another address' for the purposes required and will include holiday accommodation or hotels where they may stay regularly for business purposes. Thus, additional questions also have to be asked to ascertain the reasons for staying at such addresses and the length of stay in order to determine the residency status. As with the income questions these add considerably to the length of the census questionnaire and the burden on the form-filler.

XIII. RESIDENCY TOPICS: (II) INTENTION TO STAY

53. In order to achieve a better understanding of the residency status of recently arrived migrants, the UK is considering including a question on intention to stay for all those persons with a non-UK previous address. This would attempt to record the sort of information to inform

the usual residence status that would be collected from the CES non-core topic on reasons for migration.

54. But the UK accepts that this is a problematic topic. A person's intentions can change quite significantly over time; intentions expressed after a stay of just one or two week can be very different after a migrant has been in the country for six month or more.

XIV. MIGRATION TOPICS

55. Individually, topics aimed at measuring migration, such as **country of birth, previous place of usual residence, citizenship, ever resided abroad and year of entry, and intention to stay**, may not be regarded as being particularly difficult to measure on their own - although, as it was already noted, in the UK citizenship may present particular problems and a question on intention s to stay is as yet unproven. However when included in the Census as a suite of questions (and all of these have been designated as 'core' in the CES Recommendations) there is a risk that the Census may perceived as focusing on only a small sub-group of the population – in this case immigrants.

56. Such a perception is likely to create concern about the purpose of the census and to re-arouse the sort of suspicion and public mistrust that was prevalent at the time when the ethnicity question were first being considered. And yet, there is a growing need for countries, particularly EU Member States to seek to collect this information in order to be able to better measure and understand patterns of cross-European and other international migrations.

XV. INDUSTRY: NAME AND ADDRESS OF EMPLOYER

57. The UK allocates Standard Industrial Classification codes to economically active population not only on the basis of the written responses they give to the question asking about what sort of work they do in their job but also from information supplied in response to the question asking about name their employer.

58. The information is often perceived as being unnecessary and intrusive, and, indeed, the CES Recommendations accept that the collection of this information may be sensitive. It was certainly the case that in the 2001 UK Census the use to which this information was being put caused as much concern as any other topic. Some 7,8 per cent of respondents who were in employment did not complete the question. This non-response was even higher – 17,9 per cent - perhaps not surprisingly, for persons who were not currently employed who had previously worked, reflecting again, the difficulty that people generally have in remembering such information years after the event.

XVI. HOURS WORKED

59. A question on time usually worked in a person's main job is included in the census as a means of distinguishing those people who are in full-time and part-time employment. However, the CES Recommendations noted that this topic is subject to response errors without detailed instruction on how time usually worked should be calculated. In the 2001 UK Census for example, 8 per cent of people failed to answer the question and, of those who did, as many as

one in five reported the time usually worked incorrectly. Difficulties were experienced when the number of hours worked varied considerably from week to week or when respondents were unsure whether to report their contractual hours or the hours they actually worked.

XVII. SIZE OF WORKFORCE

60. Information on the size of the number of people employed at a person's place of work is recommended by the CES for inclusion in the Census in order to help allocate correct occupation codes in data processing. However, difficulties arise in this question in that many people may be unsure whom to include: should for example, cleaning staff and other ancillary workers be included; and if the person is working at a site as a sub-contractor should they count only the people working for them or on the site as a whole.

61. In the 2001 UK Census, some 14 per cent respondents were unable to answer this question, and in terms of item non-response it was the least well answered. There are currently no plans to repeat the question in 2011.

XVIII. NUMBER OF ROOMS

62. Traditionally the UK has included a question on the number of rooms occupied by a private household. However, as with the income question, the definition of what to include as a room and what not to include remains a problem making this topic notoriously difficult to measure. The definition of what to count as a room in the CES Recommendation, for example, takes 180 words and over 12 lines of text to describe, and even the much simpler explanation proposed for the 2011 UK Census requires almost 50 words.

63. The question on number of rooms in the 2001 Census was the least well answered (as it had been in the 1991 Census). While item non-response was only 5.4 per cent, agreement with the responses to the Quality Survey was only 77 per cent, meaning that more than 1 in 5 household reported the number of rooms incorrectly. Particular problems in interpreting the question are seen to exist when additional rooms have been added to an existing dwelling or where two or more rooms have been converted into one with no loss of floor space.

XIX. AGE OF CONSTRUCTION

64. This is a topic that has not previously been considered for inclusion in a UK census. This is primarily because there is no major requirement for such information to be linked with other census-related housing characteristics, but also because it is unlikely that UK households would be able to report this accurately.

65. Many owner occupiers – without access to the deeds of the property – might only have a vague idea, particularly for older properties, of the age of construction, and those households who rent their accommodation would have little or no idea at all.

XX. CONCLUSION

66. In this paper it was discussed why some topics can be hard to measure. In fact, many of the CES core topics can be hard to measure for different reasons, but, nevertheless, Office for National Statistics of the UK still strive to include them in the Census. But which topics are the hardest to measure and which perhaps should not be included at all in the Census?

67. Using the evidence from results of item non response from the 2001 Census it was seen that the topics that suffered from highest levels of item non-response were professional qualifications (17,2 per cent), size of workplace (13,9 per cent) and hours worked (8,0 per cent). None of these are designated as 'core' in the CES Recommendations and none are planned to be included in the 2011 Census.

68. Measuring difficulty by looking at how well questions were answered in the 2001 Census (when they were answered) it can be seen that disagreement with the Quality Check was highest with qualifications (39,4 per cent), number of rooms (22,5 per cent) and hours worked (19,8 per cent).

69. But, in considering topics that have yet to be included in the UK Census it can be suggested that the three most problematic are likely to be: income, sexual identity, and disability.

70. There are no plans to include any of these in the 2011 UK Census generally though questions on income and disability are still being considered in Scotland.



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5. However, Census Tests prior to both the 2001 and 2011 Censuses have shown a measurable lowering of responses rates among those households in England and Wales where census forms have included a question on income compared with response rates among households where no such question was included. For example, overall household response rates in the 2007 Test in England and Wales were 44,6 per cent for those households who were asked to complete a form that included a question income compared with 47,5 for those without the question.
6. Similar level of non-response in tests prior to the 2001 Census persuaded the UK not to include a question in income at that time, and the outcome of the pre-2011 Census Tests in both Scotland and England and Wales are likely to lead to a similar decision.
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the term ‘income’ mean? The definition offered by the CES Recommendations is only partially helpful:

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9. Without extensive explanatory notes respondents are often unsure about what to include or not include. For example, does ‘housing benefits’ count as income, and if so if the question is about personal income, to which person in the household does the income apply?

10. The UK experience is that the quality of responses to such a question on its own is poor, but is greatly improved (whether it is about personal or household income) if it is accompanied by a second question on the sources of income that are to be considered. But this requires an additional space on the census form and adds significantly to the burden on households in completing it.

11. Difficulties with questions on income may also arise from a lack of knowledge on the part of the form-filler, leading to the view that this is a particularly difficult topic to measure. In those countries where the responsibility for the completion of the census questionnaire falls on the householder, that person may not always be in a position to report accurately the income of other household members, who may not be able to, or wish to, provide the information themselves.

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13. This is most acute when it comes to a question on income, where suspicions that the information will be passed on to the tax authorities are difficult to assuage. Evidence from tests clearly indicate that this concern is a primary cause for non-response rates for this question in the UK to be unacceptably high.

III. ETHNICITY

14. The current CES Recommendations notes that multi-ethnic countries with long-established minorities and/or recently arrived immigrant populations may wish to collect information on the ethnic composition of the population of certain sub-groups of the population. The data are relevant for the understanding of the cultural diversity of the population, the position of ethnic groups in society as well as for the definition and monitoring of anti-discrimination policies.

15. Current UK legislation permits a question on race and nationality to be included in the Census. However it was only after the waves of immigration into the UK in the 1960s and 1970s

that information about racial or ethnic origin could not be accurately derived from the more conventional questions on country of birth and country of parents' birth.

16. A question on ethnic origin was first considered for inclusion in the 1981 Census but despite exhaustive research in the 1970s in getting the wording of the question publicly acceptable, it became clear from the results of the 1979 Census Test in parts of London that there was likely to be demonstration of public opposition to the question that would seriously jeopardise the whole census operation. As a result the question was dropped from the 1981 Census.

17. The difficulty of including these questions in pre-1991 censuses largely stemmed from the concern, at the time, among particular minority groups, about the use to which the information would be put. Particular objections to the 1981 Census question on ethnicity arose from the concerns among the Black African and Caribbean communities in London that the information would be passed on to the immigration officials and used to identify individuals to be forcibly repatriated.

18. However, the demand for such information increased throughout the 1980s, particularly as the number of second and third generation immigrants grew. Further research and question testing showed that public opinion and sensitivity had changed significantly and that there was a call, even among the ethnic minority communities themselves, for this sort of information to be collected in the Census.

19. As a result a question on ethnicity was included in the 1991 Census in England, Wales and Scotland for the first time, and this was widely regarded as one of the key successes. The topic, however, remains one which still presents some particular difficulties.

20. Although the UK has now successfully introduced a question on ethnicity into its Census it should also be noted that the very concept of 'ethnicity' remains unclear to many people, particularly those of mixed parentage or who are second or later generation migrants. Research has shown that people with mixed backgrounds may vary their answer to questions about ethnicity to suit their perception of the form that they are completing; a response to an interviewer may differ from that reported on a self-completion questionnaire. For example, a number of respondents interviewed in the 2001 Census Quality Survey² who had used the 'White British' response category were found, on interview, to be from other ethnic groups. Most explanations for this suggested that the category had been misunderstood to mean 'British nationality'. In total 3.4 per cent of persons interviewed in the Coverage Survey reported an ethnic group different to that recorded on the Census form.

21. In attempt to create a common understanding of the concepts involved in this topic, the UK has in the past sought to use such terms as 'ethnic group', 'ethnic origin', 'racial origin', 'cultural identity' and 'ancestry', but none have achieved a universal clarification. Therefore, the question wording that works the best will continue to be used, for the time being at least,

² Office for National Statistics (2005). *2001 Census: Quality report for England and Wales*. Palgrave Macmillan, London. ISBN 1-4039-8769-6.

even if this refers to a mixture of different characteristics such as geographic origin, nationality and skin colour. For the 2011 Census in England and Wales the concept of ‘national identity’ is being introduced as a distinct element of ethnicity in order to allow indigenous UK residents to identity themselves.

22. In addition to these reasons why ethnicity questions may be considered to be difficult to measure, the topic in UK has to accommodate the ever-changing composition of its multi-cultural society. In recognising additional and new ethnic groups in each successive Census, such as, Arabs, Gypsies, Roma, and Mixed Origin, a direct comparison between the results of one census and other becomes more difficult. This may not make the collection of information in each Census more difficult in itself, but the benefits of including such a topic may become eroded if the measurement of inter-censal change is to be a key requirement.

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23. An enquiry into religion was first proposed for the Census in England and Wales as early as 1851 – as a result of the concern, at that time, about declining church attendance. However, because of the concerns expressed by the Parliament of the day that a compulsory census was not the appropriate vehicle to enquire in such matters the question was made voluntary.

24. Though a question had been included in the Census in Northern Ireland since 1971, there was no attempt to repeat it in Great Britain until 2001, when an amendment to the census legislation permitted a question on religion to be included. But, as was the case 150 years earlier, this would only be on provision that the question would again be voluntary.

25. The inclusion of the topic in the 2001 Census enable a better measure of ethnicity to be made, particularly for those minority sub-groups of the population with origins in the Indian sub-continent who tend to prefer to identify themselves in terms of their religion rather than their geographic origins.

26. Despite some public concern that religion was a personal issues and should not be asked in a Census, its inclusion on a voluntary basis diffused some of the major objections, to the extent that despite its voluntary nature, the question suffered only a 7 per cent item non-response rate – this was lower than a number of other question on other more well-established census topics.

27. Issues around subjectivity, similar to those outlined for ethnicity, can apply to questions on religion. For example, some 6,5 per cent of people interviewed in the Census Quality Survey reported having religion different to that recorded in the Census.

28. An additional factor to consider is that religion is a characteristic that may change over time. The religion that person grew up in may not necessarily be that which the person practices later in life.

V. SEXUAL IDENTITY

29. With the recent introduction of legislation in the UK covering a range of equality issues, including sexual equality, a case has been made to include – for the first time in the UK and indeed anywhere – a question on sexual identity for the purposes of providing baseline data to measure levels of discrimination on the grounds of sexual orientation.

30. However, international research in Canada³ and New Zealand⁴, together with more recent investigations by the Census Office in Scotland⁵ has suggested that the topic is not suitable for inclusion in the Census.

31. In a small-scale postal survey carried out by the Census Office in Scotland in 2006, which included a question on sexual orientation, of the 31 per cent of households that responded some 14 per cent did not provide useful data on sexual orientation - either because they elected to tick the 'prefer not to answer' box or declined to complete the question at all. This far outweighed the percentage of respondents who declared a non-heterosexual orientation, and GROS concluded from this that the results would call into question the accuracy of any data gathered by such a question in the Census and hence the utility of the data collected in this way.

32. Furthermore, the terminology and concepts used to attempt to distinguish different sexual behaviour tend to confuse many respondents leading to additional inaccuracies in the responses. If, for example, the topic is seeking to obtain information on sexual practice, research has shown that terms such as 'heterosexual' or 'bi-sexual' are not universally understood or interpreted in the same way.

33. As a result, the UK does not propose to include a question in the 2011 Census. Instead it has initiated a separate project which is seeking to develop a question on sexual identity which can be used in other national surveys.

VI. LEGAL MARITAL STATUS: CIVIL PARTNERSHIP

34. Questions aimed at determining the legal status of the relationship of same sex couples may suffer from different terminology problems. The recent 2006 Census Test in Scotland for example introduced new categories in the marital status question in order to recognise the newly introduced legal same-sex relationship 'civil partnership'. But follow-up research showed that many people did not understand the term. Some thought it referred to a civil marriage ceremony, while others thought it just meant getting on well with their spouse.

³ Statistics Canada (2004). *2006 Census Content Consultation Report*. See <http://www12.statcan.ca/English/census06/products/reference/consultation/contentreport-otherdata.htm>

⁴ Statistics New Zealand (2003). Sexual orientation Focus Group Research. A qualitative study. See <http://www.stats.govt.nz/developments/sexual-orientation-research.htm>

⁵ General Register Office for Scotland (2006). Sexual orientation in the Census. See <http://www.gro-scotland.gov.uk/files/sexual-orientation-in-the-census.pdf>

VII. DISABILITY

35. It is widely recognised, that in order to obtain accurate and relevant information about specific disabilities, no one single question is likely to be successful in the Census. Simple self-completion questions aimed at seeking this information are unlikely to work well. Evidence from the pre-2001 Census question tests for example, showed that the quality of information received from the question asking about a number specific types of disability was poor when compared with an interview-based follow-up.

36. This makes the inclusion of such a topic on a self-completion census form somewhat problematic. Although other countries do so, the UK prefers not to take this approach but instead includes much simpler questions on general health (asking respondent to state whether their health is 'Good', 'Fairly good' or 'Not good' and whether or not a person has any long-term illness or disability which 'limits their daily activities or the work that they do'.

37. However, subjectivity issues are also encountered if any health-related topics are included in the Census since the health of respondent cannot be independently assessed in any follow-up quality check. The UK experience is that asking a very simple question on the general health of a person provides data that correlates very well with use of primary health care and social services at the local area level, and for this reason such a question is now a regular component of the UK Census. Item non-response to this question in the 2001 Census was just 3,1 per cent, though even this question produced different responses from 11,6 per cent of people interviewed in the Quality Survey compared with what was reported in the Census.

VIII. LANGUAGE

38. Subjectivity is also an issue with the topic of language, since questions can only ask the respondent to assess their own linguistic ability or competence. But an additional factor in making this topic difficult to measure is the problem of devising the wording of the question that is appropriate for the purposes for which the information is collected and which the form-filler can understand. If the aim of the topic is to determine the extent to which people are not able to communicate in the national language, this will require an approach different to that if information on mother tongue is required.

39. The UK does not follow a tradition of including a general language question in its Census – though different parts of the UK include a question on knowledge specific to the indigenous Celtic language spoken in Wales, Scotland and Northern Ireland. The UK experience is that it is very difficult to devise a single question on language that effectively delivers information to meet more than one user requirement, particularly so because the very people at whom such a question is aimed are the those that will have the greatest difficulty in understanding and interpreting the question.

IX. CITIZENSHIP

40. After years of pressure from Eurostat and the UN-ECE for the UK to collect information on citizenship, the 2011 Census will for the first time include such a question. Of course, the decision does not only reflect the demand for UK outputs to be as consistent as possible with

those from other EU Member States, but also meets a growing national requirement to collect more relevant information to enable better estimates of international migration to be made.

41. However, the problem still remains that the concept of 'citizenship' is not generally well understood by the British public who have no tradition of recording such a characteristic as part of the various administrative procedures necessary to conduct everyday life. Thus what concepts and wording to use in developing a new question for a UK census?

42. Tests have shown that the best understanding of the purpose of the question is achieved by asking people what passport they are entitled to hold, and this may well be the approach that the UK will adopt for the topic in its 2011 Census. But then an understanding of what is meant by 'entitled to hold' is also by no means universal, and in question testing this wording caused particular problems with persons born outside the UK.

X. ADDRESS FIVE YEARS BEFORE THE CENSUS

43. The Conference of European Statisticians (CES) recommends asking a question on usual address one year before the census as a means of providing information on patterns of recent migration for those countries that do not include a question on place of usual residence and date of arrival. Where this is the case the CES suggest that the place of usual residence five years prior to the census may also be asked. This extension of the time interval allows the capture of a larger number of moves but the CES recognises that this may be cost of an increased uncertainty about the exact timing of the migration.

44. An additional difficulty of such a question (which the UK last included in its 1981 Census) is that while many migrants may be able to recall their previous address five years before the census they are less likely to remember the postcode of that address, which the UK uses to identify the area and location of previous residence. As a result, in such responses the postcode is missing, and this is a difficult variable to impute with accuracy and is both costly and time consuming to attempt to determine the information from alternative sources during data processing.

45. The UK now only includes a question on usual address one year before the Census, but even this question suffered from 4,5 per cent missing responses in 2001.

XI. QUALIFICATIONS

46. Though not recommended by CES as a core topic, the UK has regularly included a question on educational and professional qualifications to assist in the measurement of shortfalls in the provision of education and training and the monitoring of take-up of government initiatives, and in the assessment of the reserves of skilled and qualified people among the unemployed including those not currently seeking work.

47. Though there is always a strong demand for the sort of information that this question can provide, the UK has long recognised that this is one of least well answered questions in the census since many people are not able to recall all the qualification they have obtained.

Particular difficulties are presented: either where qualifications have changed over a number of years people and where people in older age groups tend not to record accurately (or at all) what the equivalent qualification is; or where qualifications have been obtained abroad and where the UK equivalent is not readily known.

48. In the 2001 Census, some 6,2 per cent of respondent failed to answer the question on educational qualifications and 17,2 failed to answer the professional qualifications question, and of those who did respond, 40 per cent were estimated from the Coverage Survey to have failed to report all relevant qualifications obtained.

49. Difficulties also occur when comparing the results from questions on educational qualification in particular in successive censuses, since this is also a topic prone to changing descriptions of response categories not only to reflect the introduction of new qualification and international equivalents but also in an attempt to make the question as simple as possible yet, at the same, meet the users requirements for relevant information.

XII. RESIDENCY TOPICS: (I) USUAL RESIDENCE

50. Though clearly the most fundamental topic for inclusion in a population census, the concept of 'usual residence' is one that is becoming increasingly more difficult to measure. Critical to the understanding of coverage in the Census will be a better measure of those dynamics of societal change that affect the previously well-established concept of usual residence, particularly the increasing tendency towards: weekly commuting; children of divorced or separated parents having more than one home; second homes; and global living patterns.

51. To that end the UK is considering the inclusion of new questions in the 2011 Census asking about second residences and the reasons for, and duration of, staying at such addresses. Together with the information on usual address, responses will enable the UK to better allocate the population to the appropriate area of usual residence determined by the living patterns of households. The information will be particularly useful, for housing and transport planning, to local authorities who will want to know the numbers of people who stay within their area and use local services during the week but who have a usual residence elsewhere.

52. However, evidence from question testing suggests that the concept of 'second residence' is not straightforward. Many people do not know what qualifies as 'another address' for the purposes required and will include holiday accommodation or hotels where they may stay regularly for business purposes. Thus, additional questions also have to be asked to ascertain the reasons for staying at such addresses and the length of stay in order to determine the residency status. As with the income questions these add considerably to the length of the census questionnaire and the burden on the form-filler.

XIII. RESIDENCY TOPICS: (II) INTENTION TO STAY

53. In order to achieve a better understanding of the residency status of recently arrived migrants, the UK is considering including a question on intention to stay for all those persons with a non-UK previous address. This would attempt to record the sort of information to inform

the usual residence status that would be collected from the CES non-core topic on reasons for migration.

54. But the UK accepts that this is a problematic topic. A person's intentions can change quite significantly over time; intentions expressed after a stay of just one or two week can be very different after a migrant has been in the country for six month or more.

XIV. MIGRATION TOPICS

55. Individually, topics aimed at measuring migration, such as **country of birth, previous place of usual residence, citizenship, ever resided abroad and year of entry**, and **intention to stay**, may not be regarded as being particularly difficult to measure on their own - although, as it was already noted, in the UK citizenship may present particular problems and a question on intention s to stay is as yet unproven. However when included in the Census as a suite of questions (and all of these have been designated as 'core' in the CES Recommendations) there is a risk that the Census may perceived as focusing on only a small sub-group of the population – in this case immigrants.

56. Such a perception is likely to create concern about the purpose of the census and to re-arouse the sort of suspicion and public mistrust that was prevalent at the time when the ethnicity question were first being considered. And yet, there is a growing need for countries, particularly EU Member States to seek to collect this information in order to be able to better measure and understand patterns of cross-European and other international migrations.

XV. INDUSTRY: NAME AND ADDRESS OF EMPLOYER

57. The UK allocates Standard Industrial Classification codes to economically active population not only on the basis of the written responses they give to the question asking about what sort of work they do in their job but also from information supplied in response to the question asking about name their employer.

58. The information is often perceived as being unnecessary and intrusive, and, indeed, the CES Recommendations accept that the collection of this information may be sensitive. It was certainly the case that in the 2001 UK Census the use to which this information was being put caused as much concern as any other topic. Some 7,8 per cent of respondents who were in employment did not complete the question. This non-response was even higher – 17,9 per cent - perhaps not surprisingly, for persons who were not currently employed who had previously worked, reflecting again, the difficulty that people generally have in remembering such information years after the event.

XVI. HOURS WORKED

59. A question on time usually worked in a person's main job is included in the census as a means of distinguishing those people who are in full-time and part-time employment. However, the CES Recommendations noted that this topic is subject to response errors without detailed instruction on how time usually worked should be calculated. In the 2001 UK Census for example, 8 per cent of people failed to answer the question and, of those who did, as many as

one in five reported the time usually worked incorrectly. Difficulties were experienced when the number of hours worked varied considerably from week to week or when respondents were unsure whether to report their contractual hours or the hours they actually worked.

XVII. SIZE OF WORKFORCE

60. Information on the size of the number of people employed at a person's place of work is recommended by the CES for inclusion in the Census in order to help allocate correct occupation codes in data processing. However, difficulties arise in this question in that many people may be unsure whom to include: should for example, cleaning staff and other ancillary workers be included; and if the person is working at a site as a sub-contractor should they count only the people working for them or on the site as a whole.

61. In the 2001 UK Census, some 14 per cent respondents were unable to answer this question, and in terms of item non-response it was the least well answered. There are currently no plans to repeat the question in 2011.

XVIII. NUMBER OF ROOMS

62. Traditionally the UK has included a question on the number of rooms occupied by a private household. However, as with the income question, the definition of what to include as a room and what not to include remains a problem making this topics notoriously difficult to measure. The definition of what to count as a room in the CES Recommendation, for example, takes 180 words and over 12 lines of text to describe, and even the much simpler explanation proposed for the 2011 UK Census requires almost 50 words.

63. The question on number of rooms in the 2001 Census was the least well answered (as it had been in the 1991 Census). While item non-response was only 5,4 per cent, agreement with the responses to the Quality Survey was only 77 per cent, meaning that more than 1 in 5 household reported the number of rooms incorrectly. Particular problems in interpreting the question are seen to exist when additional rooms have been added to an existing dwelling or where two or more rooms have been converted into one with no loss of floor space.

XIX. AGE OF CONSTRUCTION

64. This is a topic that has not previously been considered for inclusion in a UK census. This is primarily because there is no major requirement for such information to be linked with other census-related housing characteristics, but also because it is unlikely that UK households would be able to report this accurately.

65. Many owner occupiers – without access to the deeds of the property – might only have a vague idea, particularly for older properties, of the age of construction, and those households who rent their accommodation would have little or no idea at all.

XX. CONCLUSION

66. In this paper it was discussed why some topics can be hard to measure. In fact, many of the CES core topics can be hard to measure for different reasons, but, nevertheless, Office for National Statistics of the UK still strive to include them in the Census. But which topics are the hardest to measure and which perhaps should not be included at all in the Census?

67. Using the evidence from results of item non response from the 2001 Census it was seen that the topics that suffered from highest levels of item non-response were professional qualifications (17,2 per cent), size of workplace (13,9 per cent) and hours worked (8,0 per cent). None of these are designated as 'core' in the CES Recommendations and none are planned to be included in the 2011 Census.

68. Measuring difficulty by looking at how well questions were answered in the 2001 Census (when they were answered) it can be seen that disagreement with the Quality Check was highest with qualifications (39,4 per cent), number of rooms (22,5 per cent) and hours worked (19,8 per cent).

69. But, in considering topics that have yet to be included in the UK Census it can be suggested that the three most problematic are likely to be: income, sexual identity, and disability.

70. There are no plans to include any of these in the 2011 UK Census generally though questions on income and disability are still being considered in Scotland.



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Eleventh Meeting
Geneva, 13-15 May 2008
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DIFFICULT-TO-MEASURE TOPICS

Difficult-to measure topics in a population and housing census: a United Kingdom perspective

Note by the Office for National Statistics, United Kingdom

Summary

This document identifies the several reasons why a topic that is being considered for inclusion in a traditional census of population and housing may be regarded as 'difficult-to-measure'. The document comments on the reasons why this may be so for a number of those topics which have been recommended for inclusion in a Census by the Conference of European Statisticians¹ and some others that are not included in the Recommendations. The document notes those topics which are unlikely to be included in the 2011 UK Census for one or more of these reasons. The document also recognises that, though difficult to measure, some topics are, nevertheless, being proposed for inclusion. It concludes by suggesting those topics that might be considered the most difficult to measure.

¹ UN Economic Commission for Europe (2006). *Conference of European Statisticians' Recommendations for the 2010 Censuses of Population and Housing*. ECE/CES/STAT/NONE/20006/4. United Nations, New York and Geneva. ISSN 0069-8458.

I. INTRODUCTION

1. When a census topic is described as ‘difficult-to-measure’, what does it mean?
2. Census topics may fail to deliver the sort of information required by users, to the appropriate level of quality demanded, for a number of reasons:
 - (a) because the topic is sensitive to a degree that makes its inclusion in the census unacceptable to a significant proportion of the public;
 - (b) because a question (even if the topic is acceptable) involves concepts, definitions or terminology that are not generally well understood, or that requires a lengthy explanation or instruction to ensure an accurate;
 - (c) because such topics require the knowledge of information not readily known or is unlikely to be recalled accurately;
 - (d) because questions ask for subjective responses or opinions for which there will be no quantifiably correct answer;
 - (e) because the public are suspicious or concerned about the use to which the information will be put; and
 - (f) because changing population dynamics result in necessary changes to the wording of a question between one census and another – making it difficult to measure intercensal change.
3. Some topics may be considered particularly difficult to measure because they fall into more than one of these categories. This document considers, from a UK perspective, why particular topics may be considered difficult for these reasons and will highlight those that, perhaps, should be considered very carefully before including them in a traditional Census.

II. INCOME

4. A case has been made to include a question on income in the last three UK Censuses. Income is widely seen as a more discriminating variable for the purposes of identifying areas of affluence or deprivation than is occupation or housing condition.
5. However, Census Tests prior to both the 2001 and 2011 Censuses have shown a measurable lowering of responses rates among those households in England and Wales where census forms have included a question on income compared with response rates among households where no such question was included. For example, overall household response rates in the 2007 Test in England and Wales were 44,6 per cent for those households who were asked to complete a form that included a question income compared with 47,5 for those without the question.
6. Similar level of non-response in tests prior to the 2001 Census persuaded the UK not to include a question in income at that time, and the outcome of the pre-2011 Census Tests in both Scotland and England and Wales are likely to lead to a similar decision.
7. Income, as well as being a ‘sensitive’ topic is also one that is prone to misunderstanding of the concepts and terminology necessary to seek accurate information. For example, what does

the term ‘income’ mean? The definition offered by the CES Recommendations is only partially helpful:

8. “Income may be defined as (a) income received by each household member and from each source of livelihood (in accordance with the classification of main sources of livelihood proposed excluding loans or reduction of savings and realisation of capital during the preceding twelve months or past year, or (b) total annual household income in cash and in kind from all sources.”

9. Without extensive explanatory notes respondents are often unsure about what to include or not include. For example, does ‘housing benefits’ count as income, and if so if the question is about personal income, to which person in the household does the income apply?

10. The UK experience is that the quality of responses to such a question on its own is poor, but is greatly improved (whether it is about personal or household income) if it is accompanied by a second question on the sources of income that are to be considered. But this requires an additional space on the census form and adds significantly to the burden on households in completing it.

11. Difficulties with questions on income may also arise from a lack of knowledge on the part of the form-filler, leading to the view that this is a particularly difficult topic to measure. In those countries where the responsibility for the completion of the census questionnaire falls on the householder, that person may not always be in a position to report accurately the income of other household members, who may not be able to, or wish to, provide the information themselves.

12. Despite assurances of complete confidentiality given to the public at the time of each censuses, many people have a mistrust of the workings of central government and are determined to remain unconvinced that the personal information collected the census is not passed on to other official organisations for their own administrative purposes.

13. This is most acute when it comes to a question on income, where suspicions that the information will be passed on to the tax authorities are difficult to assuage. Evidence from tests clearly indicate that this concern is a primary cause for non-response rates for this question in the UK to be unacceptably high.

III. ETHNICITY

14. The current CES Recommendations notes that multi-ethnic countries with long-established minorities and/or recently arrived immigrant populations may wish to collect information on the ethnic composition of the population of certain sub-groups of the population. The data are relevant for the understanding of the cultural diversity of the population, the position of ethnic groups in society as well as for the definition and monitoring of anti-discrimination policies.

15. Current UK legislation permits a question on race and nationality to be included in the Census. However it was only after the waves of immigration into the UK in the 1960s and 1970s

that information about racial or ethnic origin could not be accurately derived from the more conventional questions on country of birth and country of parents' birth.

16. A question on ethnic origin was first considered for inclusion in the 1981 Census but despite exhaustive research in the 1970s in getting the wording of the question publicly acceptable, it became clear from the results of the 1979 Census Test in parts of London that there was likely to be demonstration of public opposition to the question that would seriously jeopardise the whole census operation. As a result the question was dropped from the 1981 Census.

17. The difficulty of including these questions in pre-1991 censuses largely stemmed from the concern, at the time, among particular minority groups, about the use to which the information would be put. Particular objections to the 1981 Census question on ethnicity arose from the concerns among the Black African and Caribbean communities in London that the information would be passed on to the immigration officials and used to identify individuals to be forcibly repatriated.

18. However, the demand for such information increased throughout the 1980s, particularly as the number of second and third generation immigrants grew. Further research and question testing showed that public opinion and sensitivity had changed significantly and that there was a call, even among the ethnic minority communities themselves, for this sort of information to be collected in the Census.

19. As a result a question on ethnicity was included in the 1991 Census in England, Wales and Scotland for the first time, and this was widely regarded as one of the key successes. The topic, however, remains one which still presents some particular difficulties.

20. Although the UK has now successfully introduced a question on ethnicity into its Census it should also be noted that the very concept of 'ethnicity' remains unclear to many people, particularly those of mixed parentage or who are second or later generation migrants. Research has shown that people with mixed backgrounds may vary their answer to questions about ethnicity to suit their perception of the form that they are completing; a response to an interviewer may differ from that reported on a self-completion questionnaire. For example, a number of respondents interviewed in the 2001 Census Quality Survey² who had used the 'White British' response category were found, on interview, to be from other ethnic groups. Most explanations for this suggested that the category had been misunderstood to mean 'British nationality'. In total 3.4 per cent of persons interviewed in the Coverage Survey reported an ethnic group different to that recorded on the Census form.

21. In attempt to create a common understanding of the concepts involved in this topic, the UK has in the past sought to use such terms as 'ethnic group', 'ethnic origin', 'racial origin', 'cultural identity' and 'ancestry', but none have achieved a universal clarification. Therefore, the question wording that works the best will continue to be used, for the time being at least,

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even if this refers to a mixture of different characteristics such as geographic origin, nationality and skin colour. For the 2011 Census in England and Wales the concept of ‘national identity’ is being introduced as a distinct element of ethnicity in order to allow indigenous UK residents to identity themselves.

22. In addition to these reasons why ethnicity questions may be considered to be difficult to measure, the topic in UK has to accommodate the ever-changing composition of its multi-cultural society. In recognising additional and new ethnic groups in each successive Census, such as, Arabs, Gypsies, Roma, and Mixed Origin, a direct comparison between the results of one census and other becomes more difficult. This may not make the collection of information in each Census more difficult in itself, but the benefits of including such a topic may become eroded if the measurement of inter-censal change is to be a key requirement.

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25. The inclusion of the topic in the 2001 Census enable a better measure of ethnicity to be made, particularly for those minority sub-groups of the population with origins in the Indian sub-continent who tend to prefer to identify themselves in terms of their religion rather than their geographic origins.

26. Despite some public concern that religion was a personal issues and should not be asked in a Census, its inclusion on a voluntary basis diffused some of the major objections, to the extent that despite its voluntary nature, the question suffered only a 7 per cent item non-response rate – this was lower than a number of other question on other more well-established census topics.

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28. An additional factor to consider is that religion is a characteristic that may change over time. The religion that person grew up in may not necessarily be that which the person practices later in life.

V. SEXUAL IDENTITY

29. With the recent introduction of legislation in the UK covering a range of equality issues, including sexual equality, a case has been made to include – for the first time in the UK and indeed anywhere – a question on sexual identity for the purposes of providing baseline data to measure levels of discrimination on the grounds of sexual orientation.

30. However, international research in Canada³ and New Zealand⁴, together with more recent investigations by the Census Office in Scotland⁵ has suggested that the topic is not suitable for inclusion in the Census.

31. In a small-scale postal survey carried out by the Census Office in Scotland in 2006, which included a question on sexual orientation, of the 31 per cent of households that responded some 14 per cent did not provide useful data on sexual orientation - either because they elected to tick the 'prefer not to answer' box or declined to complete the question at all. This far outweighed the percentage of respondents who declared a non-heterosexual orientation, and GROS concluded from this that the results would call into question the accuracy of any data gathered by such a question in the Census and hence the utility of the data collected in this way.

32. Furthermore, the terminology and concepts used to attempt to distinguish different sexual behaviour tend to confuse many respondents leading to additional inaccuracies in the responses. If, for example, the topic is seeking to obtain information on sexual practice, research has shown that terms such as 'heterosexual' or 'bi-sexual' are not universally understood or interpreted in the same way.

33. As a result, the UK does not propose to include a question in the 2011 Census. Instead it has initiated a separate project which is seeking to develop a question on sexual identity which can be used in other national surveys.

VI. LEGAL MARITAL STATUS: CIVIL PARTNERSHIP

34. Questions aimed at determining the legal status of the relationship of same sex couples may suffer from different terminology problems. The recent 2006 Census Test in Scotland for example introduced new categories in the marital status question in order to recognise the newly introduced legal same-sex relationship 'civil partnership'. But follow-up research showed that many people did not understand the term. Some thought it referred to a civil marriage ceremony, while others thought it just meant getting on well with their spouse.

³ Statistics Canada (2004). *2006 Census Content Consultation Report*. See <http://www12.statcan.ca/English/census06/products/reference/consultation/contentreport-otherdata.htm>

⁴ Statistics New Zealand (2003). Sexual orientation Focus Group Research. A qualitative study. See <http://www.stats.govt.nz/developments/sexual-orientation-research.htm>

⁵ General Register Office for Scotland (2006). Sexual orientation in the Census. See <http://www.gro-scotland.gov.uk/files/sexual-orientation-in-the-census.pdf>

VII. DISABILITY

35. It is widely recognised, that in order to obtain accurate and relevant information about specific disabilities, no one single question is likely to be successful in the Census. Simple self-completion questions aimed at seeking this information are unlikely to work well. Evidence from the pre-2001 Census question tests for example, showed that the quality of information received from the question asking about a number specific types of disability was poor when compared with an interview-based follow-up.

36. This makes the inclusion of such a topic on a self-completion census form somewhat problematic. Although other countries do so, the UK prefers not to take this approach but instead includes much simpler questions on general health (asking respondent to state whether their health is 'Good', 'Fairly good' or 'Not good' and whether or not a person has any long-term illness or disability which 'limits their daily activities or the work that they do'.

37. However, subjectivity issues are also encountered if any health-related topics are included in the Census since the health of respondent cannot be independently assessed in any follow-up quality check. The UK experience is that asking a very simple question on the general health of a person provides data that correlates very well with use of primary health care and social services at the local area level, and for this reason such a question is now a regular component of the UK Census. Item non-response to this question in the 2001 Census was just 3,1 per cent, though even this question produced different responses from 11,6 per cent of people interviewed in the Quality Survey compared with what was reported in the Census.

VIII. LANGUAGE

38. Subjectivity is also an issue with the topic of language, since questions can only ask the respondent to assess their own linguistic ability or competence. But an additional factor in making this topic difficult to measure is the problem of devising the wording of the question that is appropriate for the purposes for which the information is collected and which the form-filler can understand. If the aim of the topic is to determine the extent to which people are not able to communicate in the national language, this will require an approach different to that if information on mother tongue is required.

39. The UK does not follow a tradition of including a general language question in its Census – though different parts of the UK include a question on knowledge specific to the indigenous Celtic language spoken in Wales, Scotland and Northern Ireland. The UK experience is that it is very difficult to devise a single question on language that effectively delivers information to meet more than one user requirement, particularly so because the very people at whom such a question is aimed are the those that will have the greatest difficulty in understanding and interpreting the question.

IX. CITIZENSHIP

40. After years of pressure from Eurostat and the UN-ECE for the UK to collect information on citizenship, the 2011 Census will for the first time include such a question. Of course, the decision does not only reflect the demand for UK outputs to be as consistent as possible with

those from other EU Member States, but also meets a growing national requirement to collect more relevant information to enable better estimates of international migration to be made.

41. However, the problem still remains that the concept of 'citizenship' is not generally well understood by the British public who have no tradition of recording such a characteristic as part of the various administrative procedures necessary to conduct everyday life. Thus what concepts and wording to use in developing a new question for a UK census?

42. Tests have shown that the best understanding of the purpose of the question is achieved by asking people what passport they are entitled to hold, and this may well be the approach that the UK will adopt for the topic in its 2011 Census. But then an understanding of what is meant by 'entitled to hold' is also by no means universal, and in question testing this wording caused particular problems with persons born outside the UK.

X. ADDRESS FIVE YEARS BEFORE THE CENSUS

43. The Conference of European Statisticians (CES) recommends asking a question on usual address one year before the census as a means of providing information on patterns of recent migration for those countries that do not include a question on place of usual residence and date of arrival. Where this is the case the CES suggest that the place of usual residence five years prior to the census may also be asked. This extension of the time interval allows the capture of a larger number of moves but the CES recognises that this may be cost of an increased uncertainty about the exact timing of the migration.

44. An additional difficulty of such a question (which the UK last included in its 1981 Census) is that while many migrants may be able to recall their previous address five years before the census they are less likely to remember the postcode of that address, which the UK uses to identify the area and location of previous residence. As a result, in such responses the postcode is missing, and this is a difficult variable to impute with accuracy and is both costly and time consuming to attempt to determine the information from alternative sources during data processing.

45. The UK now only includes a question on usual address one year before the Census, but even this question suffered from 4,5 per cent missing responses in 2001.

XI. QUALIFICATIONS

46. Though not recommended by CES as a core topic, the UK has regularly included a question on educational and professional qualifications to assist in the measurement of shortfalls in the provision of education and training and the monitoring of take-up of government initiatives, and in the assessment of the reserves of skilled and qualified people among the unemployed including those not currently seeking work.

47. Though there is always a strong demand for the sort of information that this question can provide, the UK has long recognised that this is one of least well answered questions in the census since many people are not able to recall all the qualification they have obtained.

Particular difficulties are presented: either where qualifications have changed over a number of years people and where people in older age groups tend not to record accurately (or at all) what the equivalent qualification is; or where qualifications have been obtained abroad and where the UK equivalent is not readily known.

48. In the 2001 Census, some 6,2 per cent of respondent failed to answer the question on educational qualifications and 17,2 failed to answer the professional qualifications question, and of those who did respond, 40 per cent were estimated from the Coverage Survey to have failed to report all relevant qualifications obtained.

49. Difficulties also occur when comparing the results from questions on educational qualification in particular in successive censuses, since this is also a topic prone to changing descriptions of response categories not only to reflect the introduction of new qualification and international equivalents but also in an attempt to make the question as simple as possible yet, at the same, meet the users requirements for relevant information.

XII. RESIDENCY TOPICS: (I) USUAL RESIDENCE

50. Though clearly the most fundamental topic for inclusion in a population census, the concept of 'usual residence' is one that is becoming increasingly more difficult to measure. Critical to the understanding of coverage in the Census will be a better measure of those dynamics of societal change that affect the previously well-established concept of usual residence, particularly the increasing tendency towards: weekly commuting; children of divorced or separated parents having more than one home; second homes; and global living patterns.

51. To that end the UK is considering the inclusion of new questions in the 2011 Census asking about second residences and the reasons for, and duration of, staying at such addresses. Together with the information on usual address, responses will enable the UK to better allocate the population to the appropriate area of usual residence determined by the living patterns of households. The information will be particularly useful, for housing and transport planning, to local authorities who will want to know the numbers of people who stay within their area and use local services during the week but who have a usual residence elsewhere.

52. However, evidence from question testing suggests that the concept of 'second residence' is not straightforward. Many people do not know what qualifies as 'another address' for the purposes required and will include holiday accommodation or hotels where they may stay regularly for business purposes. Thus, additional questions also have to be asked to ascertain the reasons for staying at such addresses and the length of stay in order to determine the residency status. As with the income questions these add considerably to the length of the census questionnaire and the burden on the form-filler.

XIII. RESIDENCY TOPICS: (II) INTENTION TO STAY

53. In order to achieve a better understanding of the residency status of recently arrived migrants, the UK is considering including a question on intention to stay for all those persons with a non-UK previous address. This would attempt to record the sort of information to inform

the usual residence status that would be collected from the CES non-core topic on reasons for migration.

54. But the UK accepts that this is a problematic topic. A person's intentions can change quite significantly over time; intentions expressed after a stay of just one or two week can be very different after a migrant has been in the country for six month or more.

XIV. MIGRATION TOPICS

55. Individually, topics aimed at measuring migration, such as **country of birth, previous place of usual residence, citizenship, ever resided abroad and year of entry**, and **intention to stay**, may not be regarded as being particularly difficult to measure on their own - although, as it was already noted, in the UK citizenship may present particular problems and a question on intention s to stay is as yet unproven. However when included in the Census as a suite of questions (and all of these have been designated as 'core' in the CES Recommendations) there is a risk that the Census may perceived as focusing on only a small sub-group of the population – in this case immigrants.

56. Such a perception is likely to create concern about the purpose of the census and to re-arouse the sort of suspicion and public mistrust that was prevalent at the time when the ethnicity question were first being considered. And yet, there is a growing need for countries, particularly EU Member States to seek to collect this information in order to be able to better measure and understand patterns of cross-European and other international migrations.

XV. INDUSTRY: NAME AND ADDRESS OF EMPLOYER

57. The UK allocates Standard Industrial Classification codes to economically active population not only on the basis of the written responses they give to the question asking about what sort of work they do in their job but also from information supplied in response to the question asking about name their employer.

58. The information is often perceived as being unnecessary and intrusive, and, indeed, the CES Recommendations accept that the collection of this information may be sensitive. It was certainly the case that in the 2001 UK Census the use to which this information was being put caused as much concern as any other topic. Some 7,8 per cent of respondents who were in employment did not complete the question. This non-response was even higher – 17,9 per cent - perhaps not surprisingly, for persons who were not currently employed who had previously worked, reflecting again, the difficulty that people generally have in remembering such information years after the event.

XVI. HOURS WORKED

59. A question on time usually worked in a person's main job is included in the census as a means of distinguishing those people who are in full-time and part-time employment. However, the CES Recommendations noted that this topic is subject to response errors without detailed instruction on how time usually worked should be calculated. In the 2001 UK Census for example, 8 per cent of people failed to answer the question and, of those who did, as many as

one in five reported the time usually worked incorrectly. Difficulties were experienced when the number of hours worked varied considerably from week to week or when respondents were unsure whether to report their contractual hours or the hours they actually worked.

XVII. SIZE OF WORKFORCE

60. Information on the size of the number of people employed at a person's place of work is recommended by the CES for inclusion in the Census in order to help allocate correct occupation codes in data processing. However, difficulties arise in this question in that many people may be unsure whom to include: should for example, cleaning staff and other ancillary workers be included; and if the person is working at a site as a sub-contractor should they count only the people working for them or on the site as a whole.

61. In the 2001 UK Census, some 14 per cent respondents were unable to answer this question, and in terms of item non-response it was the least well answered. There are currently no plans to repeat the question in 2011.

XVIII. NUMBER OF ROOMS

62. Traditionally the UK has included a question on the number of rooms occupied by a private household. However, as with the income question, the definition of what to include as a room and what not to include remains a problem making this topic notoriously difficult to measure. The definition of what to count as a room in the CES Recommendation, for example, takes 180 words and over 12 lines of text to describe, and even the much simpler explanation proposed for the 2011 UK Census requires almost 50 words.

63. The question on number of rooms in the 2001 Census was the least well answered (as it had been in the 1991 Census). While item non-response was only 5.4 per cent, agreement with the responses to the Quality Survey was only 77 per cent, meaning that more than 1 in 5 household reported the number of rooms incorrectly. Particular problems in interpreting the question are seen to exist when additional rooms have been added to an existing dwelling or where two or more rooms have been converted into one with no loss of floor space.

XIX. AGE OF CONSTRUCTION

64. This is a topic that has not previously been considered for inclusion in a UK census. This is primarily because there is no major requirement for such information to be linked with other census-related housing characteristics, but also because it is unlikely that UK households would be able to report this accurately.

65. Many owner occupiers – without access to the deeds of the property – might only have a vague idea, particularly for older properties, of the age of construction, and those households who rent their accommodation would have little or no idea at all.

XX. CONCLUSION

66. In this paper it was discussed why some topics can be hard to measure. In fact, many of the CES core topics can be hard to measure for different reasons, but, nevertheless, Office for National Statistics of the UK still strive to include them in the Census. But which topics are the hardest to measure and which perhaps should not be included at all in the Census?

67. Using the evidence from results of item non response from the 2001 Census it was seen that the topics that suffered from highest levels of item non-response were professional qualifications (17,2 per cent), size of workplace (13,9 per cent) and hours worked (8,0 per cent). None of these are designated as 'core' in the CES Recommendations and none are planned to be included in the 2011 Census.

68. Measuring difficulty by looking at how well questions were answered in the 2001 Census (when they were answered) it can be seen that disagreement with the Quality Check was highest with qualifications (39,4 per cent), number of rooms (22,5 per cent) and hours worked (19,8 per cent).

69. But, in considering topics that have yet to be included in the UK Census it can be suggested that the three most problematic are likely to be: income, sexual identity, and disability.

70. There are no plans to include any of these in the 2011 UK Census generally though questions on income and disability are still being considered in Scotland.
