



CeLSIUS News

Issue 16

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All comments and queries on CeLSIUS News should be sent to:

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To join our free e-discussion list, go to:
www.jiscmail.ac.uk/lists/ls-support.html

We would like to thank all those who have contributed to this issue of the newsletter. As always, we are keen to spread the word about the ONS LS and the CeLSIUS service, so please help us to do this by passing on the link to CeLSIUS news to your colleagues in the UK academic community.

About CeLSIUS

CeLSIUS is funded by the ESRC Census Programme to provide free advice, information and support to UK based academics, including students, who wish to use the ONS Longitudinal Study.

Our website at <http://www.celsius.lshtm.ac.uk> offers a range of resources to help LS users including:

- web based training modules on themes such as ethnicity, geography, household and families
- searchable data dictionary
- searchable list of publications using the LS
- downloadable tables from LS research studies

NEW! from the CeLSIUS website

Online training module: Fertility

This new module looks at what fertility data are available in the LS and explains how to calculate commonly used fertility measures. After working through the module you will understand about:

- How fertility is measured
- What fertility data are available in the LS
- How we create fertility rates using the LS
- Some estimates of fertility rates using the LS and how they compare with national estimates for England and Wales
- What has been done before using the LS

Sample page with pop up tables and charts

The screenshot displays the CeLSIUS website interface for the 'Fertility' module. The sidebar on the left contains navigation links such as 'Introduction', 'Measures of fertility', 'Fertility data in the LS', 'Birth tables in the LS', 'Family', 'Data issues', 'National birth statistics', 'How we create rates', 'Estimates of fertility rates using the LS', 'Summary', and 'Previous studies'. The main content area is titled 'Fertility' and contains the following sections:

- Birth tables in the LS**: Explains that two tables relate to births to women who are sample live births and another for stillbirths. A third table records people who are the distinction between these tables is important for fertility analysis as there are also tables for births to sample fathers, but these are only available between 1971 and 1981.
- New births (Data dictionary table - NBIR)**: Describes new LS sample members who enter the LS at birth based on the LS birth dates, and are added to the LS database every year. New using an annual date of birth search of the ONS birth file. This is an entry and other file events and census data can be linked to the birth data.
- Live births to LS sample mothers (Data dictionary table - LBSM)**: Explains that births to sample mothers are identified using an annual date of birth search of the ONS birth file. This is not an entry event and the mother's existing sample member for the birth to be added to the database. Inform the birth registration and birth certificate. Information includes the date of baby, the age of mother at the birth of the child, the birthweight of the baby, a multiple birth indicator for multiple births (there is a separate record for stillbirths: so if the mother had twins, there would be two records), before live births and stillbirths is only recorded for births within marriage. The birth is recorded, but analysis is usually carried out using the date of birth about the father of the child is available if the father appears on the birth certificate.

A table titled 'Table 1 - Live births to LS Sample Mothers 1972-2007 (Calendar years) ever traced (LS)' is displayed, showing the number of live births to LS sample mothers by year. The table is as follows:

Year	Live births to LS sample mothers	Year	Live births to LS sample mothers
1972	7,438	1990	7,268
1973	6,999	1991	7,346
1974	6,459	1992	7,561
1975	6,030	1993	7,214
1976	5,950	1994	7,040
1977	5,941	1995	6,944
1978	6,137	1996	7,223
1979	6,526	1997	6,947
1980	6,520	1998	6,790
1981	6,490	1999	6,803
1982	6,405	2000	6,440
1983	6,622	2001	6,793
1984	6,750	2002	6,679
1985	6,798	2003	6,529
1986	6,725	2004	7,245
1987	6,807	2005	7,180
1988	7,070	2006	7,569
1989	7,106	2007	7,914

Below the table, a line chart titled 'Figure 1 - Live births to LS sample mothers (Calendar years) ever traced 1972-2007' is shown. The chart plots the number of live births to LS sample mothers from 1972 to 2007. The y-axis represents 'Live births to LS sample mothers' ranging from 0 to 9,000. The x-axis represents 'Year of birth' from 1972 to 2007. The chart shows a general downward trend from 1972 to the mid-1980s, followed by a period of relative stability and a slight increase towards the end of the period.

Technical report: Self rated health and care giving in the 2001 Census

The 2001 Census included new questions on self-rated health and on care giving. The self-rated health question asked respondents how they rated their health over the last 12 months (good, fair or poor). The caring question asked whether they had looked after, given any help to or supported family members or friends because of their physical or mental health or problems due to old age, and for how many hours per week (1-19 hours, 20-49 hours or 50+ hours)

However, using data from these questions requires that some attention be paid to non-response and the edit and imputation rules applied to deal with this. The self-rated health question had a non-response rate of 3.1% and the carer question of 6.1%. In these cases procedures developed by ONS to produce a complete and consistent database were employed. Two types of procedure are relevant. The first relates to 'edit rules' used to change or add values for particular variables where they were missing or appeared inconsistent. The second relates to 'imputation'. Under this procedure, if it was not possible to assign a value (even after editing), then the variable was imputed by finding a donor household to provide all the missing individual and household values in the recipient household.

CeLSIUS has produced a technical report to better understand how the edit and imputation rules affect the self rated general health and carer variables in the study population, which outlines the implications of this system in dealing with missing data during the analysis of the Longitudinal Study.

Overall, non-response for the health and carer questions was affected by: age; by whether people lived in a communal establishment; and whether they completed a supplementary or individual form. There were also differences in the distribution of fair/poor health and the number of carers when including and excluding those who did not respond, with the greatest differences in those groups affected by age.

The edit rules for missing data on the self rated health and the carer question had the most marked effects in those aged 75 and over. This is because those aged over 75 with missing information on these variables were assumed to have valid economic activity even though they were not required to complete the questions on this topic; therefore their health was edited to 'good' and they were categorized as 'not a carer'. This implies that fair/poor self rated health and the number of carers will be underestimated for this age group if the edited and imputed data is used by researchers.

Therefore, it is important for researchers to have the opportunity to exclude all those who did not respond to the self-rated health and carer questions when undertaking analysis using these questions. Particular care must be taken when looking at sub-groups, especially those with a large proportion of older people.

For further information on the edit and imputation rules and processes see:
ONS (2003) Census 2001 Review and Evaluation - Edit and Imputation: Evaluation Report.

The full technical report containing a detailed series of tables demonstrating the implications of using datasets including or excluding edited and imputed data is available via the CeLSIUS website at: <http://www.celsius.lshtm.ac.uk/resource.html>

Fertility research using the Office for National Statistics Longitudinal Study for England and Wales: estimating the population exposed to the risk of childbearing.

James Robards, University of Southampton

Introduction

The Office for National Statistics (ONS) Longitudinal Study (LS) is a dataset which has been used in numerous family formation and fertility research projects¹. Indeed, one premise for creating the LS was to better understand the spacing of births². The LS has many advantages over retrospective survey data, particularly the fact that event information is extracted from official records and its large sample size. This article describes research on residence of female LS members in the 1991-2001 intercensal period. There are systematic trends in the census to census linkage of LS members and these must be understood when selecting a sample for analysis.

The suitability of the ONS LS for fertility research

A unique aspect of the LS is the way in which birth registration data is combined with National Health Service (NHS) and census data to give detailed information on events to LS members. There is no scope for recall error in event information. Data on the quality of birth sampling from the LS for the population of England and Wales (measured through sampling fractions³) show that for the period since 1991 there is a higher degree of accuracy than in the first two decades of the study. Linkage of birth events into the LS (measured through linkage rates⁴) has also improved since 1991.

The large sample size means that the LS can be used for understanding the fertility of some population sub-groups which are too small in other datasets. For fertility research, the numerator is known to be robust because the matching of births is accurate. The denominator is easy to get wrong and this has been the initial focus of this research using the LS and explained in the next section.

Estimating the population exposed to the risk of childbearing

The first step in using the LS has been to understand the characteristics of the population exposed to risk—women of childbearing age resident in England and Wales and captured in the LS. Reports are produced by the ONS on LS membership in the intercensal period, but the LS does not have coding for residence forms in the intercensal period, at the mid point of a particular year (the denominator) or for a calendar year (for the numerator). The exposure to risk for an LS member must be understood in the context of the whole intercensal period because exits from and re-entries to the LS are recorded by the NHS. The key research question was: How many female LS members have complete information on their residence throughout a decade?

Findings – identifying residence trajectories for 1991-2001

To understand exposure to risk in the intercensal period (1991-2001) for different age groups 'residence trajectories' were created. These comprised:

- 'Consistent cases' – LS members where residence information may be complete⁵ (in that it tells a coherent story), and:
- 'Inconsistent cases' – LS members where there must be at least one missing piece of residence information (e.g. an unrecorded exit).

Key findings from the 1991-2001 residence trajectories are:

- Around 90% of LS members at the 1991 census fell into a consistent type in the 1991-2001 period. Therefore, the residence patterns for 90% of LS members who were at the 1991 census can be fully understood.
- Among LS members born between 1972 and 1981, a relatively high percentage were not continuously resident between the 1991 and 2001 censuses.
- The highest proportion of new LS members entering between 1991 and 2001 came from the 1972-1976 birth cohort.
- Most 'inconsistent cases' were due to an unrecorded exit from the LS sometime in the 1991-2001 period.
- Unrecorded exits between 1991 and 2001 were concentrated among those not born in the United Kingdom, single people and those living in rented accommodation in 1991.

The work on understanding the denominator from the LS exposed to risk through the 1990s has shown systematic bias in the sample exposed to risk. Using the conventional approach of selecting LS members based on residence at a census decreases the number of LS members from certain age groups and with certain characteristics.

Conclusions

The LS is a highly detailed and very large dataset and one which is suited for many fertility related questions, especially related to the timing of fertility. This work has identified systematic trends in the longitudinal tracing of LS members through the 1990s. For accurate analysis using the LS the denominator which is selected must be considered carefully to minimise bias.

James Robards is a Postgraduate Research Student in the Division of Social Statistics at the University of Southampton. His core research interest is below-replacement fertility and he is currently researching the fertility of recent immigrants to England and Wales under the supervision of Ann Berrington and Andrew Hinde.

Acknowledgements

Thanks to Andrew Hinde and Ann Berrington (University of Southampton), the Economic and Social Research Council (ESRC) for funding this research (studentship number ES/G018766/1), the staff at CeLSIUS and the ONS LS Development team.

The permission of the Office for National Statistics to use the Longitudinal Study is gratefully acknowledged, as is the help provided by staff of the Centre for Longitudinal Study Information & User Support (CeLSIUS). CeLSIUS is supported by the ESRC Census of Population Programme (Award Ref: RES-348-25-0004).

¹ See for example:

Portanti, M. and Whitworth, S. (2009) A comparison of the characteristics of childless women and mothers in the ONS Longitudinal Study, *Population Trends*, 136: 10-20.

Rendall, M. and Smallwood, S. (2003) Higher qualifications, first-birth timing and further childbearing in England and Wales, *Population Trends*, 111, 18-25.

Rendall, M., Couet, C., Lappegard, T., Robert-Bobee, I., Ronsen, M., Smallwood, S. (2005) First births by age and education in Britain, France and Norway, *Population Trends*, 121, 27-34.

Rendall, M. S., Ekert-Jaffé, O., Joshi, H., Lynch, K. and Mougin, R. (2009) Universal versus Economically Polarized Change in Age at First Birth: A French-British Comparison, *Population and Development Review*, 35, 1, 89-115.

² Office of Population Censuses and Surveys (OPCS) (1973) *Cohort Studies: New Developments, Studies on Medical and Population Subjects*, No. 25, London.

³ Sampling fractions express the degree to which births to LS members represent all births in England and Wales.

⁴ Linkage rates express the degree to which births to LS members represent the births expected to be in the LS based on the number of births in England and Wales.

⁵ There is no reason to believe any information is missing (e.g. an unrecorded exit and subsequent re-entry).

ONS News: IMPORTANT Consultation on the ONS LS and the Virtual Microdata Laboratory (VML)

The Office for National Statistics (ONS) is seeking views to help determine the shape of its future statistical work programme. The budget reductions announced as part of the 2010 Spending Review mean that ONS has to consider where savings can be found. It is critically important that our statistical outputs reflect our users' priorities. User feedback can also help us strive to become a more efficient and effective organisation.

The consultation document outlines our approach to reducing our budget, including the core principles which determine this approach, and asks stakeholders to let us know:

- what ONS outputs they use and how they use them
- the impact on them of possible reductions in various areas of ONS work

Responses will be used to inform our work programme for the next four years.

Email: stakeholderconsultation@ons.gsi.gov.uk

Work Programme Consultation
Room 1301
Office for National Statistics
Government Buildings
Cardiff Road
Newport
NP10 8XG

Please note that this consultation closes at 2pm on 24 December.

The consultation document and response form can be downloaded through the following link: http://www.ons.gov.uk/about/consultations/work_programme_consultation/index.html

NOTE FROM CeLSIUS:

Among the data sets and services the document asks about are the Longitudinal Study (see section 5 under Demographic statistics) and the Virtual Microdata Lab (Section 5, ONS services, and item 42). If you value the data and access via the VML please do respond to the consultation and say so!

Apart from number of replies, weight is also paid to 'quality' of replies, i.e. examples of the usefulness of particular pieces of analysis so please do consider spending a little longer to provide information on that too, if relevant.

You can send your response by email or post to the address given above.

ONS LS/2011 Census Link

ONS are currently planning to link 2011 Census data into the Longitudinal Study (LS) which will then include five censuses. ONS aim to launch in 2013.

Preliminary work includes planning for rigorous security arrangements and legal and contractual compliance, and obtaining approvals. System design and development are also well underway.

Census day is Sunday 27th March 2011.

Census operations include the load of enumeration data, passing it through statistical processes and checks, and publishing the population estimates in 2012. The LS is part of this major programme. It initially receives the minimal data which are used for linkage, and later takes on fully-processed census variables. It provides quality assurance analysis feedback to Census as well as creating the updated 2011 LS dataset.

The LS Census tables for LS members and their household members are basically constructed from the linked Census data. The steps in preparation of research-ready data include: resolving inconsistencies; identifying and classifying multiple enumerations of the same individual; designing and creating LS-specific variables, and building 2011 metadata.

An Alpha test will be performed to evaluate the quality of the data and fix problems. For Beta test, researchers will be invited to submit proposals for appropriate projects that challenge and make good use of the updated LS using a pre-release version of the final database and metadata. Expressions of interest in Beta test projects that benefit both Researchers and ONS will be asked for in due course.

Final launch is currently scheduled for Autumn 2013.

Outline plan as at November 2010

Activity	2010				2011				2012				2013			
LS planning & development	■	■	■	■												
Census Day March 27 th 2011				■												
Census processing					■	■	■	■	■	■	■	■				
LS linkage						■	■	■								
LS QA of Census enumeration								■	■	■	■	■				
LS receive Census final extract											■					
Construction of LS database												■				
LS metadata & derived variables													■	■		
Alpha Test (internal)														■		
Beta Test (researchers)															■	■
LS database Launch																■

ESRC Census Programme

Conferences

ESRC Census Unit Conference

All census programme units will participate in a conference to mark the completion of the current round of the programme and the 2011 census, to be held in Manchester on 7-8 July 2011.

The conference will aim to explain to a broad user community what services and outputs can be expected from the 2011 census in general and the ESRC programme specifically. This is being hosted by the Centre for Census & Survey Research (CCSR) with input from the full range of programme units. The three UK census organisations have already agreed to participate.

Forthcoming workshops

Workshop: Mapping and visualising census data

Location: University College London

Date: 15 December 2010

Workshop: Geo-referencing, geo-demographics, postcodes and classifications

Location: University of Cardiff

Date: 18 February 2011

Workshop: Combining and mapping census, postcode and other geographical data

Location: New Technology Institute, Birmingham City University

Date: 3 March 2011

For further information and booking please contact:

<http://www.census.ac.uk/News/Workshops.aspx>



CeLSIUS Conference Report

CeLSIUS attended the 54th Annual Meeting of the Society for Social Medicine in Belfast on the 6th-8th September 2010, and the British Society of Population Studies Annual Conference in Exeter on the 13th-15th of September. These events drew delegates from range of disciplines including demography, epidemiology and medical sociology, as well attracting researchers and specialists from government organisations and think-tanks and, in the case of the BSPS conference in particular, colleagues from local government.

CeLSIUS support staff were on hand at poster and parallel sessions to discuss the various ways in which the LS could be used to supplement and strengthen current research programmes. There was also a specific session allocated to the dissemination of LS research findings at the BSPS conference.

A poster was presented at these events, outlining what the LS is and how it can be used in academic research - it can be downloaded from the CeLSIUS website using the following link: [www.celsius.lshtm.ac.uk/documents/LS Poster 2010.pdf](http://www.celsius.lshtm.ac.uk/documents/LS%20Poster%202010.pdf)

Other events

British Society for Population Studies 2011

The 2011 BSPS Annual Conference will be held at the University of York from Wednesday 7 – Friday 9 September 2011. The call for papers for the Conference will be issued in January when electronic submissions will be invited.

BSPS Council invites members (including new members) to suggest ideas for individual Conference sessions, and to propose session organisers. BSPS also welcomes suggestions of innovative formats, such as panels, forums, training sessions, discussions or workshops.

If you would like to contribute your ideas, please send an outline description to: pic@lse.ac.uk by 15 January 2011.

Recently approved new projects supported by CeLSIUS

A social analysis of ethnic segregation.

Eric Kaufman, Birkbeck College, University of London.

Dynamics of immigrant residential locations in the UK.

Anke Hoeffler & Paul Collier, University of Oxford.

Immigration to Europe against the backdrop of the ageing population

Pavel Paluchowski, University of Bristol

Long term trends in lifetime spent living with children.

Ursula Henz, London School of Economics & Political Science, University of London.

Modelling the effect of social mobility on health.

Heather Turner, University of Warwick.

The effect of children on the probability of dying from infectious disease.

Paul Schweinzer, University of York

The effects of educational attainment on fertility rates.

Dan Anderberg, Royal Holloway, University of London.

The fertility of ethnic and religious groups in the UK.

Sylvie Dubuc, University of Oxford.

Selection of recent publications from projects supported by CeLSIUS

Journal articles and book chapters

- Blomgren J, Martikainen P, Grundy E, Koskinen S (2010) Marital history 1971-91 and mortality 1991-2004 in England & Wales and Finland. *Journal of Epidemiology & Community Health* (published online in advance of printed journal)
- Grundy E (2010) Household transitions and subsequent mortality among older people in England and Wales: trends over three decades. *Journal of Epidemiology & Community Health* (published online in advance of printed journal)
- Grundy E, Tomassini C (2010) Marital history, health and mortality among older men and women in England and Wales. *BMC Public Health* 10: 554, 15th Sept 2010
- Hirst M, Corden A (2010) Living arrangements of couples separated by the death of a partner in England and Wales, 1971 to 2001. *Population Trends* 141 (Autumn): 130-150
- Jones HM (2010) Welsh speakers: age profile and out-migration. In: Morris D, editor. *Welsh in the Twenty-First Century*. Cardiff: University of Wales Press
- Muttarak R (forthcoming 2011) Occupational mobility in the life course of intermarried ethnic minorities in Britain. Chapter in Wingens M, Windzio M, Aybek C, de Valk H (eds) *Migration and the Life Course*. New York: Springer.

Dissertations and theses

- Goh, Ai Tee (2010) Courtyard housing in the UK: potentials for high density low energy urban housing. PhD Thesis, University of Liverpool

Conference Presentations and Proceedings

- Feng Z, Boyle P, van Ham M, Raab G (2010) Are mixed ethnic unions more likely to dissolve than co-ethnic unions, and does neighbourhood ethnic mix have an influence? British Society for Population Studies Annual Conference, Exeter 13-15 Sept
- Feng X, Flowerdew R, van Ham M, Feng Z (2010) Ethnic inequalities in social mobility at the neighbourhood scale. 'People Like Us', a one-day conference in Manchester, 6 April 2010
- Hansell A, Blangiardo M, Morris C et al (2010) Association between black smoke and SO₂ air pollution exposures in 1971, PM10 in 2001 and mortality 1972-2007 in the longitudinal study in England and Wales. International Society of Exposure Science Annual Conference, 28 Aug-1 Sep 2010, Seoul
- Hansell A, Blangiardo M, Morris C et al (2010) Association between black smoke and SO₂ air pollution exposures in 1971 and respiratory mortality 1972-2007 in the UK. European Respiratory Society Congress, 18-22 Sep 2010, Barcelona
- Karlsen S, Nazroo J (2010) Ethnic and religious differences in social mobility between 1971 and 2001: findings from the ONS Longitudinal Study. British Society for Population Studies Annual Conference, Exeter 13-15 Sept
- Robards J (2010) Changing age-specific fertility in England and Wales: understanding the fertility of recent immigrants. European Population Conference, Vienna 1-4 Sept 2010 (poster).
- Robards J (2010) Calculating fertility rates using the ONS Longitudinal Study for England and Wales. British Society for Population Studies Annual Conference, Exeter 13-15 Sept

Key links

CeLSIUS: <http://www.celsius.lshtm.ac.uk/>

National Statistics Online: <http://www.statistics.gov.uk/>

ONS Longitudinal Study:

<http://www.statistics.gov.uk/about/data/methodology/specific/population/lis/default.asp>

Census of Population Programme Data Units Links

Home of ESRC Census Programme: census.ac.uk

<http://census.ac.uk/>

Users wishing to use the data provided by CDU, CIDER, UKBORDERS, SARs must register via census.ac.uk

Census Dissemination Unit (CDU) <http://cdu.mimas.ac.uk/>

Centre for Interaction Data Estimation and Research (CIDER) <http://cids.census.ac.uk/>

UK Boundary datasets (UKBORDERS) <http://www.edina.ac.uk/ukborders/>

Scottish Longitudinal Study <http://www.lscs.ac.uk/>

Samples of Anonymised Records <http://www.ccsr.ac.uk/sars/>

CeLSIUS team news

Staff changes

Lynda Clarke has re-joined the CeLSIUS team deputising for Prof. Emily Grundy. Lynda will also work as the link between CeLSIUS and the Longitudinal Study Research Board which operates within the Office for National Statistics.

CeLSIUS Team

Emily Grundy	Director
Pat Doyle	Associate
Lynda Clarke	Associate
Neil Smith	Research and Computing Support Officer
Chris Marshall	Research and Computing Support Officer
Rachel Stuchbury	Research Support Officer
Melissa Neal	Executive Officer

CeLSIUS will be moving from the current location in Bedford Square to the main LSHTM building during the week beginning December 6th 2010.

Our new postal address will be:

*CeLSIUS
Population Studies Department
London School of Hygiene & Tropical Medicine
Keppel St
London WC1E 7HT*

Email addresses and telephone numbers remain unchanged.

Lastly, CeLSIUS wishes all our users a Happy Christmas and good luck for 2011