

## Longitudinal studies abstracts

### Strand organisers:

**Jim Newman, Office for National Statistics**

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### **Methods for producing a series of life expectancy by National Statistics Socio-Economic Classification (NS-SEC) using the ONS Longitudinal Study.**

*Brian Johnson, Office for National Statistics*

The recently published Marmot Strategic Review of health inequalities highlighted the need for continuous measures of inequality which can be compared over time. ONS publishes a series “Trends in life expectancy by social class using the ONS Longitudinal Study 1972-2005” which is updated periodically. To date, Registrar General’s Social Class (RGSC) based on occupation has been used owing to the need for continuity over a relatively long period. In 2001, the National Statistics Socio-economic Classification (NS-SEC) replaced RGSC in official statistics. So far, it has not been possible to produce a series of life expectancy by NS-SEC since 2001 was the first census where occupation was coded by NS-SEC and only the deaths and person-years after April 2001 can be included. The approach to this problem has been firstly to make use of the existing approximation to NS-SEC for 1991 derived from the SOC90 occupational classification. Secondly, an attempt has been made to synthesise a “NS-SEC80” using only information available at the 1981 Census to derive an NS-SEC class for each sample member. Stochastic methods are used to apportion LS members probabilistically to NS-SEC classes where it is impossible to locate them unequivocally. The resultant classification can be tested on dual coded datasets to estimate the level of error. Methods used to estimate and minimise error are shown, together with the treatment of potential health selection and attrition. Conceptual and measurement issues are discussed and some preliminary results for life expectancy by NS-SEC are shown.

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### **Does widowhood increase mortality risk?**

*Paul Boyle, Zhiqiang Feng, Gillian Raab, University of St. Andrews*

We consider whether widowhood increases mortality risk. Although commonly observed, this ‘widowhood effect’ could be due to selection effects as married couples share various characteristics related to the risk of death. We therefore consider the widowhood effect by different causes of spousal death; some are correlated with these shared characteristics, while others are not. Using data from the Scottish Longitudinal Study we compare outcomes for men and women by different causes of death of their spouse, controlling for a range of individual- and household-level characteristics. The widowhood effect is greater than has been found from other recent studies, especially for older women. The risk is highest shortly after widowhood, but remains significant for over ten years. These broad results hold regardless of the cause of death of the spouse, suggesting that this is a causal effect, rather than a result of selection. Health interventions to support widows should be prioritised.

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## **The Northern Ireland Longitudinal Study: current and potential projects.**

*Fiona Johnston, Northern Ireland Statistics and Research Agency; Michael Rosato, Queen's University Belfast; Gemma Catney, Queen's University Belfast*

The Northern Ireland Longitudinal Study (NILS) - a large-scale, representative data linkage study consisting of approximately 500,000 people (28% of the Northern Ireland population) - has been available to researchers from both the government and academic sectors since 2006. It is an innovative resource which allows for the exploration of changing individual and area-based health, demographic and socio-economic characteristics. The NILS follows major life events using information from sources including the 2001 Census, vital events data (e.g. births, deaths) from the General Register Office and demographic data derived from health card registration data. There is also the potential to link individual level data from other resources for specifically designed one-off studies (Distinct Linkage Projects).

Approximately 40 research projects have used, or are using, the NILS as a major data source. An overview is presented using two already completed projects as examples: (i) a study of the socio-demographic and area correlates of suicides in Northern Ireland; and (ii) a Distinct Linkage Project which investigates the influence of demographic, socio-economic and area level factors as well as informal care-giving responsibilities on uptake of routine breast screening in Northern Ireland.

The objectives are to highlight the research potential of the Northern Ireland Longitudinal Study database through a review of two completed projects; the socio-demographic and area correlates of suicides in Northern Ireland (results already published); and the demographic, socio-economic and area level factors as well as the importance of the care-giving role on uptake of routine breast screening in Northern Ireland (papers currently under review).

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## **Calculating fertility rates using the Office for National Statistics Longitudinal Study for England and Wales.**

*James Robards, University of Southampton*

The Office for National Statistics Longitudinal Study for England and Wales is a large, linked dataset composed of a 1% sample of the population. Given the large sample size that this dataset offers for analysis there has been a tendency for researchers to assume that the LS is representative of the population of England and Wales. This is unlikely to be the case, for example, reports from the Office for National Statistics show that there is a lower rate of census-to-census linkage for specific members of the LS. Building on existing knowledge, this paper hypothesises idealised residence 'trajectories' for female LS members in the 1991-2001 period. LS members are attributed to each of the trajectories created and hence we are able to estimate the proportion of LS members who have incomplete information, for example because they make an unrecorded embarkation from the LS in the 1991-2001 period. The various residence trajectories are used to calculate numbers of women in the LS who are exposed to risk of giving birth, and the number of births to these women in the LS. Hence we estimate fertility rates for women according to their residence trajectories. Indeed, the LS is a suitable dataset for understanding the fertility of recent migrants as through registration with a General Practitioner new migrants to England and Wales are added to the LS. Through the accurate calculation of women exposed to risk of birth it is possible to understand precise residence trajectories and subsequent fertility for LS members who migrated to England and Wales.

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## **Ethnic and religious differences in social mobility between 1971 and 2001: Findings from the ONS Longitudinal Study.**

*Saffron Karlsen, University College London; James Nazroo, University of Manchester*

The social position of different religious groups has been the subject of much discussion. Yet, in Britain exploration of social variations in demographic and socioeconomic circumstances has focussed on issues relating to social class, gender and ethnic group. There is a need for a comprehensive exploration of the impact of religion on people's lives, but to date the availability of data with which to do so have been unforthcoming. This situation was partially rectified by the inclusion of a question on religion in the 2001 Census. We used multinomial logit modelling to investigate whether there is evidence of ethnic and religious differences in patterns of social mobility between 1971 and 2001, using data included in the ONS Longitudinal Study. After adjusting for age, Bangladeshi and Pakistani Muslim, Indian Sikh, Irish Christian and Caribbean men with no religious affiliation were consistently more likely to be in manual occupations than white British Christian men. The position of Indian Christians, Indian Muslims, Indian Hindus and other white Muslims improved, relative to white British Christian men, over the period. The socioeconomic position of Pakistani Muslim men was particularly unstable, however: with more frequent moves both into and out of employment. Despite gains being made by some, particularly Indian, groups, the findings speak to the persistence of the socioeconomic disadvantage faced by Muslim groups. This work provides a useful insight into the socioeconomic position of different ethnic and religious groups in England and Wales and their experiences over the LS period.

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## **Evidence from the ONS Longitudinal Study about the housing and subsequent moves of immigrants to London from outside the United Kingdom.**

*AE Holmans, Cambridge Centre for Housing & Planning Research*

Immigrants to London in the ONS Longitudinal Study (LS) are sample members whose usual residence in the 1971, 1981, 1991 and 2001 census was in London, but whose usual residence one year previously was outside the United Kingdom. Information about LS members used in the analysis was their age and housing tenure. The information was used to study place of residence in England and Wales ten years later and hence migration out of London; and changes of housing tenure (between private renting, owner-occupation and social renting). The main focus of the work is on transitions between 1991 and 2001, with transitions in 1971-81 and 1981-91 looked at for similarities and difference. 1991-2001 transitions in the rest of England and Wales outside London were looked at for evidence of whether any of the findings are specific to London.

A major problem is the large number of London immigrants in the 1991 LS sample who were not found in 2001. Out of 1,209 in total, 376 were found in 2001, 83 are known to have died or emigrated, and 750 were not accounted for. How many of these had left England and Wales and how many were missed in 2001 is very important for any inferences about the effect of immigration on London's housing. The housing tenure in 1991 of immigrants in the London LS sample who were not found in 2001, is consistent with a substantial proportion having left the United Kingdom.

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**Are mixed ethnic unions more likely to dissolve than co-ethnic unions, and does neighbourhood ethnic mix have an influence?**

*Zhiqiang Feng, Paul Boyle, Maarten van Ham, Gillian Raab, University of St. Andrews*

People generally partner someone with similar characteristics in terms of age, religion, ethnicity, level of education, and family background. The increasing share of ethnic minorities in Britain has been paralleled by an increase in the occurrence of mixed ethnic unions involving a White and an ethnic minority partner. Such unions are thought to run higher risks of dissolution, but empirical studies so far have been inconclusive. This paper uses the Office for National Statistics longitudinal study (ONS LS) to investigate whether mixed ethnic unions are more likely to dissolve than co-ethnic unions. Following married or cohabiting couples from 1991 to 2001 we find clear evidence that ethnic minorities who out-partner with Whites exhibit higher risks of dissolution, although this effect varies between ethnic groups. We also show that the ethnic mix in the residential neighbourhood plays a role in the stability of such partnerships – for example, couples involving Black and White partners living in neighbourhoods with a high concentration of Black people have higher risks of dissolution than those living elsewhere. Again, however, the role of neighbourhood context varies between ethnic groups.

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