Regional, subnational and local demography: its impact on policy-making for places

Strand organiser: Dr Mark Fransham (University of Oxford)

9:00 - 10:30 Tuesday 12 September: Regional & local demography

Beyond "peripheral France": understanding the local social inequalities in small and medium-sized cities through residential mobility
Sylvie Dubuc, Julie Fromentin - University of Strasbourg, SAGE

This presentation focuses on the social dynamics of residential mobility in small and medium-sized cities and towns (SMSCT) in France. Largely ignored in urban research until recently, SMSCT are the subject of new attention, especially in the context of urban shrinkage (Martinez-Fernandez et al., 2012), with a focus on cities' population decline and low residential mobility. However, some recent studies have broadened the framework of urban decline to show, for example, the importance of inward mobility in the dynamics of aging in small towns (Steinführer and Grossmann, 2021), highlighting the importance of a renewed analysis of residential mobility dynamics to SMSCT. In line with this emerging field of research and using individual data from the population censuses (2008, 2013, 2018), we propose a two-level multivariate analysis (using factorial analyses, clustering and logistic models). First, we analyse the flows of inward and outward residential mobilities to/from SMSCT, the social characteristics of this mobile population, and its contribution to social change in SMSCT, particularly to explore the hypothesis of an increase in residential mobilities of socially disadvantaged individuals and families to these towns. We identify contrasted patterns and dynamics of social change. We relate them to the demographic and economic characteristics and trajectories of SMSCT. Through a local and regional approach of demographic and social dynamics, this work revisits, details and specifies the processes of spatial inequalities.

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Assessing public policy through the use of equivalent income – an adjusted measure of both income and socio-economic status
Luke Archer, Nik Lomax, Robert Clay, Hugh Rice - University of Leeds

A significant challenge in policy analysis is in how best to assign finite resources amongst a number of promising initiatives. Policies must be evaluated in terms of the expected quality of life value gained versus cost, which is determined by both changes to income as well as to an individuals socio-economic environment. Increasingly, this view of multi-dimensional well-being is of interest to policy-makers and academics as it generates a much richer description of an individuals situation. One measure of multi-dimensional well-being is equivalent income. Equivalent income takes into account the socio-economic status of an individual to calculate an adjusted value of income, incorporating information on physical and mental health, loneliness, employment status, quality of housing, and neighbourhood safety. Here we compare the effects of several policy initiatives using the dynamic microsimulation MINOS, including the national living wage and child maintenance grants, to determine which has the largest impact in terms of equivalent income. We focus on the Greater Manchester Combined Authority (GMCA) Region to determine the spatial effects of these policies, highlighting vulnerable areas and demographic groups that produce the greatest return on investment.

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Refugee Integration Outcomes (RIO) Cohort Study: Evidence for policy and planning
Nicky Rogers, Samuel Frowen, Angela Black, Alan Evans, Tilly Skipper, Hannah Toft - Office for National Statistics; Caroline Peate, Raoul Hodgson - Home Office

Evidence on refugee integration outcomes in the UK is lacking, partly due to an absence of datasets which permit refugees to be identified. The Refugee Integration Outcomes (RIO) longitudinal study is a collaboration between the Office for National Statistics and the Home Office to fill the data gap. This presentation will showcase this new and innovative longitudinal cohort study for refugees in England and Wales and demonstrate

how it aims to fill the evidence gap both regionally and at a local authority level by linking administrative data longitudinally. RIO covers cohorts granted asylum and refugees resettled in England & Wales via the Vulnerable Persons and Vulnerable Children's resettlement Schemes between 2015 and 2020. We will show how our linkage methodology attempts to address the challenges in linking across administrative data sources without unique identifiers. Additionally, how we developed linkage algorithms to deal with different naming conventions across a wide set of cultures and transliteration issues of names that may occur in the original recording in administrative data. Census 2021 data have been linked to the study. Early experimental analysis will look at internal migration patterns of refugees and access to health services. Linkage to Census 2021 data provide a richer understanding of this vulnerable group at a point in time. The benefits of this study will be realised through linking data successively to understand better refugee integration outcomes over their life course. We are planning to make this dataset available to Accredited Researchers via the ONS Secure Research Service and the Integrated Data Service (IDS).

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Accuracy of local authority population forecasts produced by a new minimal data model: A case study of England
Philip Rees - University of Leeds, Tom Wilson - University of Melbourne

Forecasts for small populations are problematic, depending on extrapolating change in stocks between censuses. Standard cohort-component models are problematic because of small numbers, which make estimation of rates unreliable. The Synthetic Migration Population Projection (SYMPOPP) model was used to forecast local populations without need for detailed area-specific information. This model had been used for small area in Australia. The objective of the paper is to assess its performance when applied in England. The model uses a bi-regional structure based on a movement population account. Sub-models of total population change are employed to control future change. Fertility, mortality, and migration rates are borrowed from national statistics, constrained to small area indicators. Iterative computation ensures that population change is accounted for. The model uses an Excel workbook with additional VBA routines and can be easily implemented. Model inputs were calibrated for 2006-2011 and used to forecast for 2011-2021. Results were tested against the census-based 2021 mid-year population. A new error statistic, Age Structure Error, was used to evaluate Basic and Refined model versions against official projections. The two versions of the SYMPOPP posted lower errors. The simple models had fewer areas with errors of 10% or more (12.3-12.6%) compared with the official projections (14.5% of areas). Investigation revealed that these errors occurred in local authorities with high military, student, prison or ethnic minority populations, influenced by factors not captured in a projection model for the general population.

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2:45 - 4:15 Tuesday 12 September: Local area demography

ONS local demography insight – now and next
Pete Large - Office for National Statistics

The publication of the 2021 Census results for England and Wales down to Output Area level, and the flexibility of users being able to produce customised datasets down to that geographical level using an online tool, provides immensely valuable insight into local populations. In addition, new datasources and methods open up the possibility of transformed population statistics providing more timely information available for small geographical areas while the ONS Local service, a network of dedicated ONS analysts based across the UK, has been established to support subnational bodies and local leaders in ensuring they have access to data, statistics and analysis to support decision making. This session will briefly discuss the above to help users of local demographic data understand what is available now and what might be available in the future.

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Associations between stability in mode of transport to work and residential ward-level walkability, 2001 to 2011
Jemima Stockton, Oliver Duke-Williams - University College London

Aims & Background The ONS Longitudinal Study (LS) comprises census records, including commuting behaviour, linked at decennial intervals from 1971 to 2021 for approximately 1% of the England and Wales population. Previous work using the LS showed commute retention rates between 2001 and 2011 of 34% and 30% for walkers and cyclists, respectively(1). Neighbourhood walkability has been associated with more time spent walking in London, suggesting it is supportive of active travel(2). We hypothesise that people living in more walkable neighbourhoods, operationalised as ward of residence, are more likely to retain an active commute. We aim to determine the impact of residential ward-level walkability of on active transport mode retention rates between 2001 and 2011 in London. Methods The sample will comprise LS members who are in employment in both 2001 and 2011, and who residential address is in London and unchanged at these time points. Sample members will be linked, via their ward of residence in 2001, to their ward walkability score taken from a walkability index constructed for London(2), comprising factors associated with active travel behaviours (residential dwelling density, street connectivity and land use mix). Multivariate logistic regression will model statistical associations between walkability (exposure variable) and commute mode stability (outcome variable), adjusting for socioeconomic factors such as sex, age, economic activity, household car availability and area-level deprivation. The 2021 Census data is expected to be linked to the LS in 2024, at which point our analysis will be extended to 2021. (1)https://ukdataservice.ac.uk/app/uploads/journeytoworkslides.pdf (2) https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-016-3012-2

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An employment and qualifications deprivation index for England and Wales

Christopher D. Lloyd[1], David McLennan[2], Gemma Catney[1], Sara Ferguson[1], Paul Norman[3], Michael Noble[2]
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This paper presents a new Census-based employment and qualifications deprivation index for England and Wales (the EQI). The paper considers how far the use of standard output areas might obscure our understanding of the geographies of deprivation. In England and Wales, for example, the lower layer super output area (LSOA; mean population in 2021 of 1,671) is used to report a wide array of official statistics including the English Index of Deprivation and the Welsh Multiple Deprivation Measure. Previous research has shown that using LSOAs to assess spatial variation in many population characteristics (including unemployment and self-reported health status) would result in a considerable loss of information when compared to analyses based on Output Areas. The present paper builds on this research by showing how far targeting of resources based on deprivation measures for LSOAs might omit people who live in smaller areas with high deprivation levels. As an example, a scheme might be targeted at people living in the areas with deprivation levels in the top 10% by LSOA. A means of assessing this issue is to compute a deprivation measure (here, the EQI) for LSOAs and for OAs and to determine which OAs are in, for example, the top deprivation deciles for OAs and are also located within an LSOA in the top deprivation decile by LSOA. The results show that a significant proportion of people live in local pockets of deprivation and that, where possible, OA-level data should be used to supplement widely-used LSOA-level measures.

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50-year deprivation trajectories: local area change 1971-2021 England & Wales

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Since 1971, the decennial censuses have underpinned the calculation of local level deprivation measures. Many policy-related and academic studies have used deprivation scores calculated cross-sectionally to identify areas in need of regeneration and to explain variations in health outcomes. Since changing deprivation over time can be calculated, this has enabled: monitoring the effects of industry closure; assessing the impacts of area-based planning initiatives; and determining whether a change in the level of deprivation leads to a change in health. Here we extend previous work to cover a 50-year period using input variables from the six censuses from 1971 to 2021. We identify areas of persistent (dis-)advantage, those areas which have improved their deprivation situation and those places where the situation has worsened. (Completed 13/04/2023.) We cross-classify the changing deprivation measurements with other area classifications to thereby determine how urban, rural and coastal areas are faring. (Yet to be operationalised.)

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