Appl. Spatial Analysis (2010) 3:77–79
DOI 10.1007/s12061-010-9054-4

Editorial: Poverty and Deprivation Mapping

Paul Norman

Received: 28 May 2010 / Accepted: 2 June 2010 /
Published online: 10 June 2010

The alleviation of poverty and deprivation from global down to local scales is high on political and academic agendas. The words poverty and deprivation are often used synonymously but their definition and method of calculation remain the subject of wide and intense debate. Definitions of poverty tend to focus on levels of income in relation to subsistence and have been influenced by Seebohm Rowntree (1901) who believed that sufficient income was needed for the maintenance of physical efficiency and Beveridge (1942) who wrote that to avoid poverty a family's income must be, "sufficient to take into account food, clothing, fuel, light and household sundries and rent". In terms of deprivation, people can be deprived of adequate education, housing of good quality, rewarding employment, sufficient income, good health and opportunities for enjoyment (Dorling 1996). As such then, deprivation is multi-dimensional and has a broader definition than poverty.

The papers in this special issue of *Applied Spatial Analysis and Policy* on poverty and deprivation mapping have their roots in a conference session at the Cathie Marsh Centre for Census and Survey Research (CCSR) in Manchester, September, 2008. The presenters there found common ground in discussions on the need for the dynamics of measurements of poverty and deprivation to be considered. The very varied work reported here includes examples from the UK, the USA and from Central America.

In the first paper, *Dorling and Pritchard* take us on a journey through time from the mid-nineteenth century to date by considering the temporal changes in levels of recorded poverty in Britain. They distinguish between early work during times of anecdotal reporting, the first national counts and geographical distribution descriptions, and a current 'industry devoted to poverty counting and cartography'. This journey parallels the development of statistical methods from Pearson onwards and of the representation of society using area-based measures and cartography from Booth and Rowntree up to Dorling's innovative cartograms. An underlying theme of

P. Norman (✉)
School of Geography, University of Leeds, Leeds LS2 9JT, UK
e-mail: p.d.norman@leeds.ac.uk

Dorling and Pritchard's paper here is about who was doing the work and what they were like as people. This serves to remind us that any of our work is affected by why and how a dataset has been collected and that the way we calculate and report our results can lead to different conclusions being drawn (analogous to debates about the analysis of the integration/segregation of different ethnic groups, see Johnston et al. 2002; Simpson 2004, 2007).

Despite repeated calls from academics and others, unlike censuses in many other countries, the UK Census has not included an income question (Dorling 1999; Boyle and Dorling 2004). As a result, proxy indicators have been used so that deprivation indexes can be constructed. A wide variety of schemes have been developed; the widest used and most well-known are the Carstairs index and the Townsend index. These schemes are not comparable over time since they are time-point specific relating to the census year and subject to being released with different variable and geographical boundary definitions. Whilst more sophisticated indexes of multiple deprivation (IMD) have recently been developed which measure deprivation outside of census year, these have been calculated separately for England, Wales, Scotland and Northern Ireland so the IMDs cannot be used for research with a full UK coverage. To address these issues, in the second paper in this special issue, *Norman* develops Townsend scores which can be used to show whether an area has become more or less deprived over time. The availability of comparable deprivation measurements over time means that, for example, the effect of industry closure or the success of area-based planning initiatives can be monitored. Moreover, given the strong relationship between health and deprivation, one could investigate whether a change in the level of deprivation leads to a change in health. Perhaps a research avenue here would be to look at the effect of the closure of coal mines in terms of unemployment, economic regeneration and the health legacy.

In the third paper here, *Poston* et al. carry out a US-based study to examine the micro-level and area-level effects of poverty among households located in the Texas Borderland and Mississippi Delta regions. This work is based on individual level, microdata and is able to focus on poverty since the data source includes income. The dependent variable used is whether or not the household is in poverty. The poverty threshold used is consistent with Beveridge (1942), representing the minimum amount of dollar income required for a household of a particular size and composition to provide for basic necessities. This paper demonstrates that areal context characteristics have significant effects on the likelihood of households being in poverty. The authors conclude that spatial context matters when it comes to predicting household poverty. In a policy setting then, the manipulation of area level characteristics in national and state-level programs which increase the levels of economic development in poorer areas are likely to lead to a reduction in the likelihood of households being in poverty.

Policy settings are at the heart of the final paper in this special issue in which *de la Espriella* introduces a web-based application which produces small administrative unit poverty maps for Liberia, Costa Rica. The base level includes the distribution of four dimensions of poverty. The application then allows the effect of differential allocation of limited resources aimed at reducing poverty to be simulated thereby enabling decision makers to identify the likely success of different actions. The technique can be used to identify the poverty concentrations and inequalities and to

allow a range of actors to discuss and agree on a plan of actions and thereby promote transparency and accountability in decision-making.

Betson and Warlick (2006: 129) assert that "poverty measurement provides a statistical face to the portion of the population in need". They warn of the need to be able to have suitable definitions and measurements otherwise the success of programs to alleviate poverty cannot be assessed. We have in this issue four papers that contribute to this debate. Taking a long-term view, it is necessary that the definitions, indicator variables and methods change in response to societal change. However, over a shorter term we need a degree of consistency; otherwise we cannot tell whether change has occurred and what the effect of policy may be.

References

Betson, D. M., & Warlick, J. L. (2006). Measuring poverty. In J. M. Oakes & J. S. Kaufman (Eds.), *Methods in social epidemiology* (pp. 112–133). San Francisco: Wiley.

Beveridge, W. (1942). *Social service and applied services. The 'Beveridge Report'*. London: HMSO.

Boyle, P., & Dorling, D. (2004). The 2001 UK census: remarkable resource or bygone legacy of the 'pencil and paper era'? *Area, 36*(2), 101–110.

Dorling, D. (1996). Be cheerful, strive to be happy identifying disadvantaged areas: health, wealth and happiness. *Radical Statistic, 62*, 8–21.

Dorling, D. (1999). Who's afraid of income inequality? *Environment and Planning A, 31*, 571–574.

Johnston, R., Forrest, J., & Poulsen, M. (2002). Are there ethnic enclaves/ghettos in English cities? *Urban Studies, 39*, 591–618.

Rowntree, B. S. (1901). *Poverty: A study of town life*. London: Macmillan.

Simpson, L. (2004). Statistics of racial segregation: measures, evidence and policy. *Urban Studies, 41*, 661–681.

Simpson, L. (2007). Ghettos of the mind: the empirical behaviour of indices of segregation and diversity. *Journal of the Royal Statistical Society A, 170*(2), 405–424.