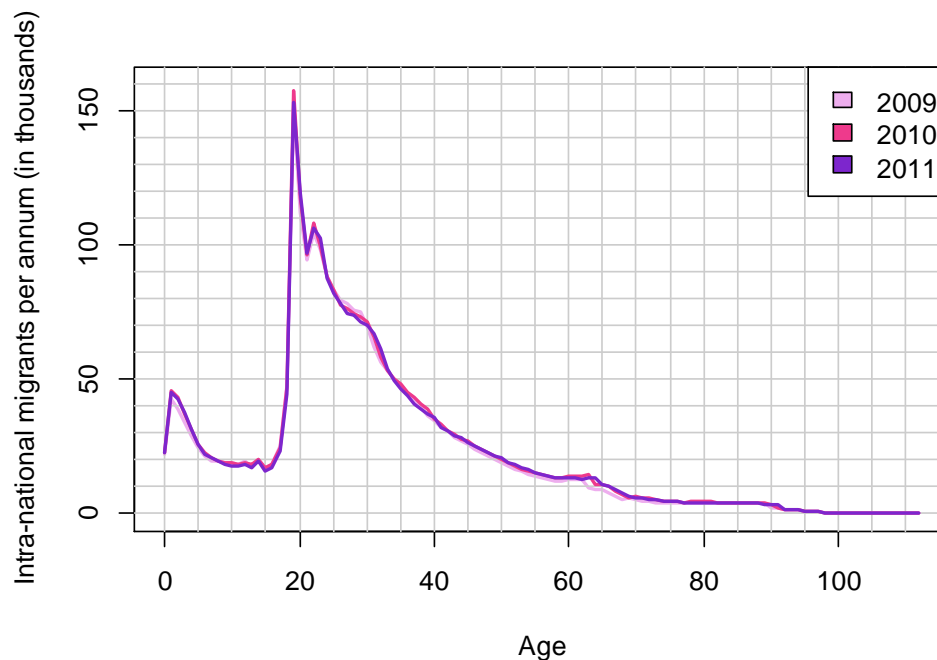


Supplementary material

Sensitivity testing of age cut-offs for building neighbourhood matrices using migration data

This section reports on sensitivity analysis performed in order to ensure that the intensity of sub-national migration flows for younger residents does not have an excessive influence on the way local authorities are matched with one another to form a neighbourhood matrix based on the number of residents exchanged. Figure 1 | below illustrates the spike of migration for individuals aged 16 to 34 years.

Figure 1 | Intensity of annual intra-national migrations by age in England and Wales 2009-2011 (Source: ONS 2013b).



In order to examine how the migration peak influences the ranking of pairwise migration intensity between districts, we generated these ranking separately for residents aged 30+, then 25+, 20+ and finally 15+. Results are reproduced in Table 1 | below for the City of Manchester, the City of Nottingham and the London Borough of Barnet. After manual reviews of those matrices we concluded that changing the minimum age only has a moderate effect on the ranking of neighbours.

Table 1 | Sensitivity analyses for neighbours allocated to two metropolitan councils and one city council LADs under different age scenarios

Min. age	Manchester				Barnet			
	30	25	20	15	30	25	20	15
1 st neighbour	Salford	Salford	Salford	Trafford	Camden	Camden	Camden	Camden
2 nd neighbour	Trafford	Trafford	Trafford	Salford	Haringey	Haringey	Haringey	Haringey
3 rd neighbour	Stockport	Stockport	Stockport	Stockport	Enfield	Brent	Brent	Brent
4 th neighbour	Oldham	Oldham	Bury	Bury	Brent	Enfield	Enfield	Enfield
5 th neighbour	Bury	Bury	Tameside	Tameside	Hertsmere	Hertsmere	Harrow	Hertsmere

Min. age	Nottingham			
	30	25	20	15
1 st neighbour	Rugby	Rugby	Erewash	Erewash
2 nd neighbour	Erewash	Erewash	Rugby	Rugby
3 rd neighbour	N. Warwickshire	N. Warwickshire	N. Warwickshire	N. Warwickshire
4 th neighbour	Malvern Hills	Lancaster	Lancaster	Lancaster
5 th neighbour	Lancaster	Malvern Hills	Derby	Craven