Religious segregation in Belfast: detecting real change in patterns of population movement

Duncan Lee, Jon Minton and Gwilym Pryce

Key Points

- Religious and ethnic segregation in cities is important because of the rapid growth of urbanisation and international migration.

- The experience of Belfast illustrates how segregation can persist through generations and lead to deep social and political divisions and conflict.

- We have developed a new approach to identifying whether changes in the most widely used measure of segregation, the Dissimilarity Index, are genuine or a product of random variation.

- Applying our new method to Belfast and the surrounding areas, we report a small but statistically significant reduction in religious segregation between 2001 and 2011.

- Our findings will be of use to policy makers involved in tackling segregation, urban planning and community development and should reassure those who are concerned about increasing segregation in Belfast .

Urbanisation and Urban Segregation

Over the last 100 years, there has been unprecedented urbanisation across the globe and more than half of the world's population now live in cities. Urbanisation has been largely fuelled by huge increases in international migration and by the shift from rural to urban living, particularly in developing countries. The processes that have caused urbanisation raise challenges with respect to social segregation as cities have become more diverse in terms of the religious, ethnic, legal and cultural backgrounds of inhabitants.

This can lead to individual neighbourhoods becoming more segregated as 'homophily' occurs, or in other words ,'birds of a feather flock together', which in turn raises questions about the best way to plan cities and design social policy to avoid social conflict.

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Some researchers have argued that neighbourhood segregation is a good thing, not least because there is mixed evidence of positive 'ethnic density effects', which buffer minority groups against the experiences of prejudice and discrimination. Others have argued that segregation reflects and reinforces social fissures in society that are potentially harmful. Cities that offer a variety of very different neighbourhoods are effectively offering greater choice to residents.

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Religious segregation in Belfast

"We need robust measures of segregation to evaluate whether we are making genuine progress on social cohesion." (Joe Frey, Northern Ireland Housing Executive).

Peace wall in Belfast— ©iStock.com/ Jen Grantham

Belfast represents one of the most notable examples of entrenched segregation. Research suggests that contact between Catholics and Protestants in the city has significantly increased trust and reduced prejudice between the two groups. Opportunities for social interaction are, however, significantly affected by patterns of residential segregation. "If people do not live in the same neighbourhood, attend the same school, or occupy the same workplace as outgroup members, they are unlikely to come into contact with them, let alone develop friendships with them" (Hewstone and Hughes, 2015, p.65).

The experience of Belfast illustrates how segregation can persist through generations and lead to deep social and political divisions that can undermine social cohesion and economic development. It can also limit face to face interaction between groups. Changes in neighbourhood composition may be a positive indicator of reconciliation as it partly reflects the willingness of households from different groups to live in close proximity, indicating trust between groups. Measuring the success of policies that foster social cohesion must, therefore, include reliable ways of measuring change in residential segregation.

The problem of measurement

The most widely used indicator of segregation is the Dissimilarity Index which measures how unevenly distributed the minority group is across the wider population. The index is measured on a scale from zero to one and can be interpreted as the proportion of the minority group (e.g. Catholics) that would have to move neighbourhood in order to achieve an even distribution across all neighbourhoods in the study area.

Until now, studies using the Dissimilarity Index have overlooked the uncertainty associated with measuring segregation, which leaves policy makers unclear about whether there has been genuine change in segregation or just random variation. The social composition of neighbourhoods tends to be very similar to those that surround it (spatial autocorrelation), which makes statistically significant changes hard to detect.

The aim of this research was to develop a reliable way to estimate the Dissimilarity Index taking account of uncertainty due to spatial auto-correlation, using Belfast as an example.

Figure 1: Distribution of Catholics in Belfast in 2011

This map shows the proportion of residents that are
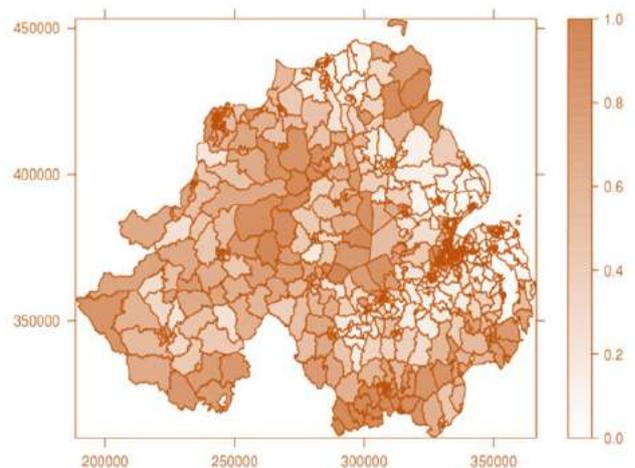
Catholic for each Super Output Area in Belfast. The darker the colour, the more Catholics there are in that area. We can see clear evidence of spatial auto-correlation: the tendency for neighbouring areas to have similar social mix.

Data and analysis

Figure 1 displays the raw proportion of Catholic heads of household in each Super Output Area in 2011 in Belfast. Statistical testing revealed that Super Output Areas situated close together tended to exhibit similar proportions of Catholics, which highlights the need to take account of the high degree of spatial auto-correlation in residential data when estimating the Dissimilarity Index.

Another finding from Figure 1 is that some pairs of Super Output Areas were geographically adjacent but had very different catholic proportions. These locations were predominately where Catholic and Protestant populations lived next to each other. These types of localised difference are called 'step changes' or 'boundaries' and can be problematic when controlling for spatial auto-correlation.

We account for this by using an extension to the commonly used spatial models. Our analysis examines change in the Dissimilarity Index from 2001-2011 in Belfast. To our knowledge, our approach is the first to use this type of adjustment when measuring the Dissimilarity Index .

Results

In our analysis, we found a small but clear decline in the degree of Catholic/non-Catholic residential segregation in Northern Ireland between 2001 and 2011. The Dissimilarity Index fell from 0.6022 in 2001 to 0.5673 in 2011. The 95% confidence intervals for these estimates did not overlap, which means that this finding was statistically significant.

This confirms the potentially important finding that segregation has indeed fallen in Belfast and the surrounding areas, which is likely to be down to a combination of factors. While our research does not explain the causes for the fall in segregation, our findings should reassure those who are concerned about increasing segregation in Belfast and consider this an indicator of social fragmentation.

Migration in Northern Ireland

Between 2000 and 2010, more than 120,000 international migrants entered Northern Ireland, around 7% of its present population, and around 97,000 people (5% of present population) left over the same period.

This suggests up to one eighth of Northern Ireland's population may have changed due to migration over this period, similar to the UK average. Around one third of the 120,000 international in-migrants are from the central and Eastern European 'A8' countries which acceded to the European Union in 2004.

Many migrants from these countries are likely to identify as Catholic, but this religious identity is unlikely to be correlated as strongly with the historical divisions and sectarian interests of many non-migrant Catholics in Northern Ireland. The interpretation of changes in religious segregation which we have found in our analysis should therefore be considered in the context of broader migratory change in Northern Ireland.

Conclusion

As the world's population continues to be more concentrated in cities, the question of how diverse peoples live together in close isolation is likely to become increasingly important. The issue is further heightened by the propensity for segregation to become embedded, and persist across generations, as it has done in the context of religious segregation in Belfast with its problems of sectarian violence and social division.

Detecting a genuine signal of changing segregation amid the noise of population movement is not a trivial task, not least because of the spatial autocorrelation which tends to pervade local demographic data. Those spatial patterns are all the more problematic for estimating inference when there are step changes or clear boundaries between adjacent neighbouring areas, as is the case in Belfast.

We have developed a new method of identifying genuine change in the Dissimilarity Index. By applying this method to Belfast, we have identified significant change in where people of different religions live in relation to each other. The ability to identify these patterns will be of use to policy makers involved in urban planning, community development and in tackling segregation.

For a more detailed discussion of this new methodology and the findings from this research, see Lee *et al.* (2015).

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