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Levels of deprivation in the UK in 2011 using Townsend Deprivation Index

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The project concerned producing Townsend deprivation scores for the UK, based on 2011 census data. The purpose of this was to determine levels of deprivation within the UK in 2011.

Aim

The aim was to produce Townsend deprivation scores using 2011 census data at different geographic area levels (e.g. local authorities). In total, there were 4 geographic are levels. A key aspect of producing the scores was to consider the differences in the levels of deprivation between the countries and within each of the countries. Furthermore, the Townsend deprivation scores would prompt questions as to why levels of deprivation are high in certain areas. The Townsend deprivation score is produced from the total value of Z scores of overcrowding, unemployment, non-home ownership and car and van availability. The data for the Z scores was taken from the 2011 census data.

Method

To produce the scores, the formula used to produce Townsend scores was incorporated into an R script which meant that a generic script could be used with small changes to produce scores for each of the geographic area levels and earlier census data. For mapping the scores, R and QGIS were used. For the other visualisations and tables Microsoft Excel was used.

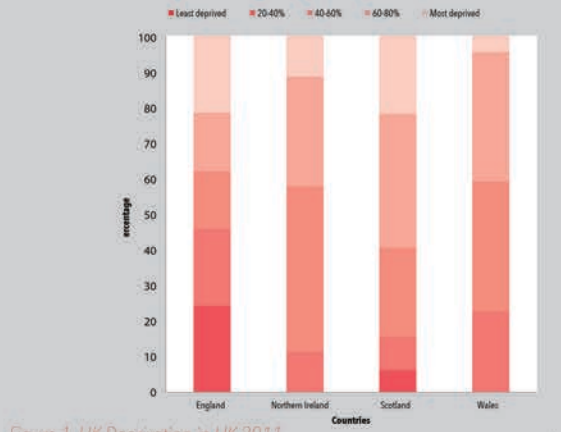

Figure 1: UK Deprivation in UK 2011

Figure 2: UK cities deprivation in 2011

Key findings

The Townsend deprivation scores illustrated that deprivation was consistently high in cities in each of the countries. Of all cities, London demonstrated the most significant levels of deprivation. England and Scotland had an equal percentage of their local authorities within the most deprived quintile (22%). Wales had the lowest percentage of local authorities in the most deprived quintile and therefore fared better than the other countries in the UK (5%). The distribution of the Townsend scores in the most deprived quintile had a large range (11.497) with the lowest Townsend score being 2.516 and the highest Townsend score being (14.013).

To provide further insight into the causes of deprivation, the Z scores were investigated. No consistent pattern could be found for all areas of the UK, for example whether unemployment was the biggest contributor to deprivation. However, looking at an individual area provided some insight into which Townsend indicator was contributing the most to the overall Townsend score for that area.

Figures 3 and 4 present pie charts of the individual make-up of the Townsend scores of the local authorities: Glasgow City (7.872) and Belfast (5.575). Glasgow city is more deprived than Belfast, according to the Townsend scores. For both the cities, the indicator that contributes the most to the Townsend score is 'no car or van availability' (Glasgow City = 2.826, Belfast = 1.746), and the second highest contributor is 'non-home ownership' (Glasgow City = 2.288, Belfast = 1.573). Such analysis prompts questions such as what is the reason for the lack of car or van ownership within the cities? Is 'no car or van availability' a viable indicator for deprivation? For the latter question, previous research has suggested that in rural areas, having a car is a necessity as opposed to being an indicator of wealth. For the former question, further research would be required.

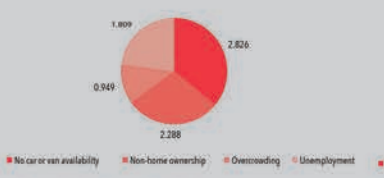

Figure 3: Glasgow City Z scores

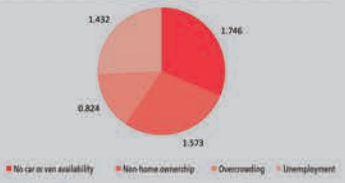

Figure 4: Belfast City Z scores

Conclusion

Overall, deprivation levels in the UK varied considerably. The overall project provided scope for there to be further investigation into what the causes of deprivation are in different areas and how levels of deprivation can be minimised.

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UK Data Service

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