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Using Census data to generate a UK-wide measure of disadvantage

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Research Domains

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Abstract

Two current policy ambitions across all nations of the UK are to ensure there is equal opportunity for all and for prosperity to be more evenly shared across regions. Higher education is expected to play a crucial role in helping to achieve these aims, particularly through outreach and encouraging those from disadvantaged backgrounds to consider higher level study. However, existing area-based measures used to support such work have their limitations. For example, the Participation of Local Areas (POLAR) is less useful in capturing deprivation in areas of high participation (e.g. London), while a drawback of the Indices of Multiple Deprivation is that they are less effective in picking up disadvantage in rural spots. This paper looks to outline a new UK-wide area-based measure of disadvantage based on Census data. By comparing to POLAR and the Indices of Multiple Deprivation, we illustrate the added value it can bring across all nations.

Full paper

A shared ambition across all four nations of the UK is to ensure that there is equal opportunity for all, alongside a more equitable distribution of growth and prosperity across regions. Higher education is expected to play an important role in helping to meet these ambitions, particularly through widening participation and supporting those from disadvantaged communities to access study.

One of the ways in which this can be achieved is through outreach activity, which aims to raise aspiration and attainment.

To identify areas that may benefit from such programmes, widening participation practitioners will often rely on area-based measures, such as the Participation of Local areas (POLAR) or the Indices of Multiple Deprivation, given individual-level data will not always be available (e.g. for data protection purposes). However, existing area-based measures do have their limitations. For example, POLAR is not effective in capturing deprived areas in those regions of the UK which already have high levels of higher education participation, such as Scotland and London. Meanwhile, each nation has their own final Index of Multiple Deprivation, but it is known to be less useful when trying to pick up disadvantage in rural areas.

Additionally, in a recent review of statistics in the post-16 education and skills sector, the Office for Statistics Regulation noted the lack of a UK-wide deprivation metric was preventing comparable country-level analysis from being published, as well as an assessment to be made of how levels of social mobility were changing in society.

The purpose of this paper is therefore to provide the higher education sector with a new UK-wide area-based measure of socioeconomic disadvantage based on Census 2011 data. The primary use of this measure is intended to be in supporting outreach activity by helping to overcome some of the known drawbacks of existing measures. The UK-wide nature of the variable will also enable official statistics producers to produce statistics that can be compared across different parts of the country.

The Census is a decennial collection that is compulsory for all households to complete, with respondents asked to provide demographic data, as well as information on their education and employment. While there are different agencies in the various parts of the UK who are responsible for administering the questionnaire, consistency in the way questions are asked opens up the possibility to develop a UK-wide measure. Each nation releases data in the public domain at a variety of geographic levels, with the smallest being output area. These typically contain less than 500 individuals and there were 232,296 such areas in the 2011 Census.

To create our UK-wide area-based measure of disadvantage, we firstly take an average of the following two variables;

- Proportion of residents in an output area aged 16 and over with below level 4 qualifications
- Proportion of residents in an output area aged 16 to 74 in NSSEC groups 3 to 8 (those that couldn't be classified were excluded from the calculation)

The 232,296 output areas were then ranked, with those areas that have the highest proportion of residents with below level 4 qualifications/based in NSSEC groups 3 to 8 considered to be most disadvantaged. Though there is no financial data within the Census, we attempt to illustrate how our measure does appear to be identifying parts of the country where households are likely to have lower levels of income.

Through linking external Census data to HESA records, we subsequently explore how our measure compares with existing area-based measures used within the sector. In England, we find that the added value of our variable is that it is able to better capture deprived medium to large towns in Northern and Central England, where attainment currently falls below the national average. Within Scotland, our measure picks up a greater breadth of the country, including rural spots and remote towns. Furthermore, some of the key council areas in which these vicinities are based are known to have higher levels of deprivation and lower academic attainment. Similar benefits to those we see in Scotland also emerge in Northern Ireland, with our measure picking up disadvantage outside of the major cities and towns. Finally, in Wales, the benefit of the variable we have created is in its ability to identify disadvantage in southern parts of the country, with poorer levels of attainment when compared with the average across the nation.

References

Bermingham, J., Donnelly, S. & Nathwani, T. (2021). Using Census data to generate a UK-wide measure of disadvantage.

Available at https://www.hesa.ac.uk/insight/05-10-2021/new-measure-disadvantage

Donnelly, S. & Nathwani, T. (2022). Reaching out: The added value of HESA's new measure of socioeconomic disadvantage. Available at https://www.hesa.ac.uk/insight/15-03-2022/reaching-out-added-value-new-measure-disadvantage