WHAT CAN THE 2001 CENSUS TELL US ABOUT EDUCATION IN SCOTLAND?

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INTRODUCTION

The 2001 Census marked the bi-centenary of census taking in the UK and provides the most socially and spatially comprehensive account of life here. In 2005, the Joseph Rowntree Foundation launched a series of 10 short reports, collectively known as 'Life In Britain'[1]. These reports showed key patterns and inequalities in life in the UK as revealed by the 2001 Census data, using geography to compare and contrast the resources and needs of different groups of people. In this short note, the analyses of education from Life In Britain are extended to focus more explicitly on Scotland.

EDUCATION, QUALIFICATIONS AND NEIGHBOURHOOD

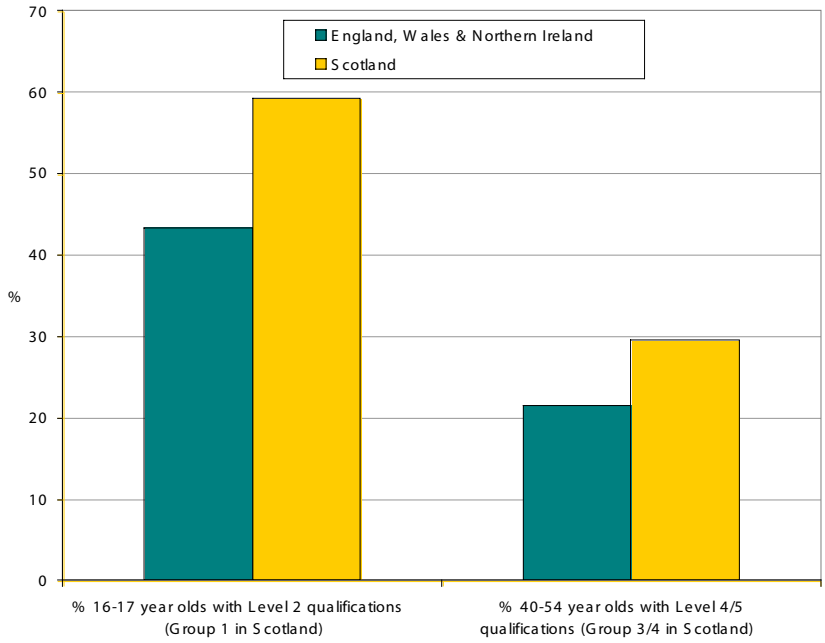
The decennial census carries a vast amount of information about the socioeconomic characteristics of people's lives and families. Although it is obviously not a dedicated study of schools or education at large, the information it carries on levels of qualification, and on the context in which the qualification holders live, makes it a valuable source for education research. Whilst formal qualifications are important markers for the success of a young person's schooling, they are also very strong predictors of a person's subsequent chances of health and wealth. Young people who achieve good qualifications at school are the most likely to get a place at university, to get a good degree, and later, to do well in the employment and housing markets[2,3]. The 2001 Census was the first to ask everyone below the age of 75 to describe all of their qualifications. It is perhaps because qualifications have become more important to life in the UK that a more detailed question was justified.

The Life in Britain Report number 4, 'Sons and Daughters', took as its starting point recent research suggesting that the proportion of adults who have a university degree in a child's neighbourhood is closely associated with the child's chances of academic success[4]. We tested this idea in 'Sons and Daughters' by comparing the proportion of young people (16–17 year olds) in an area who have standard qualifications with the proportion of people in the same area, aged 40–54, who have high level qualifications. The Census does not permit a comparison of the educational attainment of 40–54 year olds with those of their actual children, so the 40–54 year old group is intended to represent the generation old enough to be these young people's parents. The Census was conducted in April so 16 year olds sitting examinations in the summer of that year would not have their qualifications counted, which is why the age range included 17 year olds.

The nature of school-based qualifications attained around the age of 16 differs between Scotland and the rest of the UK. The Census groups qualifications of a similar nature and level together and this allows us to compare 'Level 2' qualifications in England, Wales and Northern Ireland (largely GCSEs) with 'Group 1' qualifications in Scotland (largely Standard Grades). For the 40–54 age group, the qualification groupings are more straightforward with 'Level 4/5' in England, Wales and Northern Ireland, and 'Level 3/4' in Scotland corresponding to a degree level qualification. The technical report accompanying Life in Britain provides precise definitions of the variables used, including the Census data table and cell references for those who wish to replicate the analyses themselves[5]. Figure 1 compares, for

Scotland and the other home nations, the proportions of the age groups of interest who have qualifications at these levels.

Figure 1: Proportions of the population with the qualifications of interest

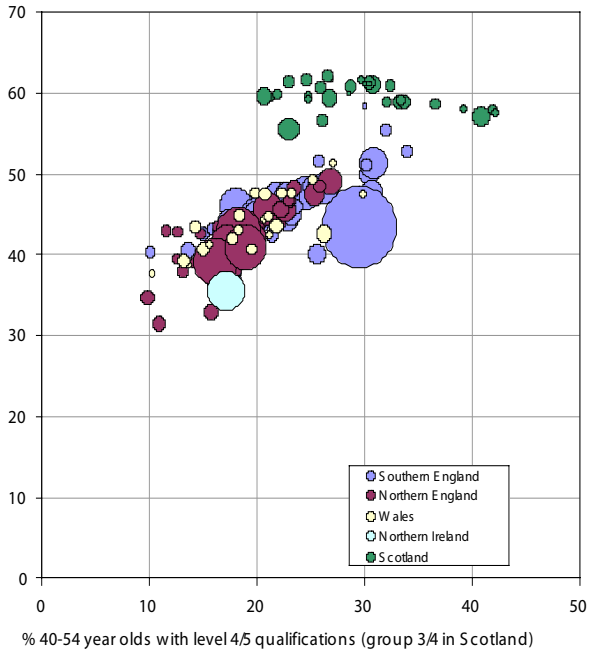


Source: Life in Britain, Report 4, 'Sons and Daughters'

The higher proportion of people with qualifications in Scotland is partly due to the way qualifications are grouped by the Census there. This graph does not necessarily mean that people in Scotland are generally better qualified than elsewhere in the UK.

The next graph (figure 2) contrasts the levels of qualification at each age group within geographical areas. The geographical areas comprise 142 counties, unitary and former metropolitan authorities from across the UK.

Figure 2: Association between the percentage of 16–17 year olds with Level 2 qualifications (Group 1 in Scotland) and the percentage of 40–54 year olds with Level 4/5 qualifications (Group 3/4 in Scotland)

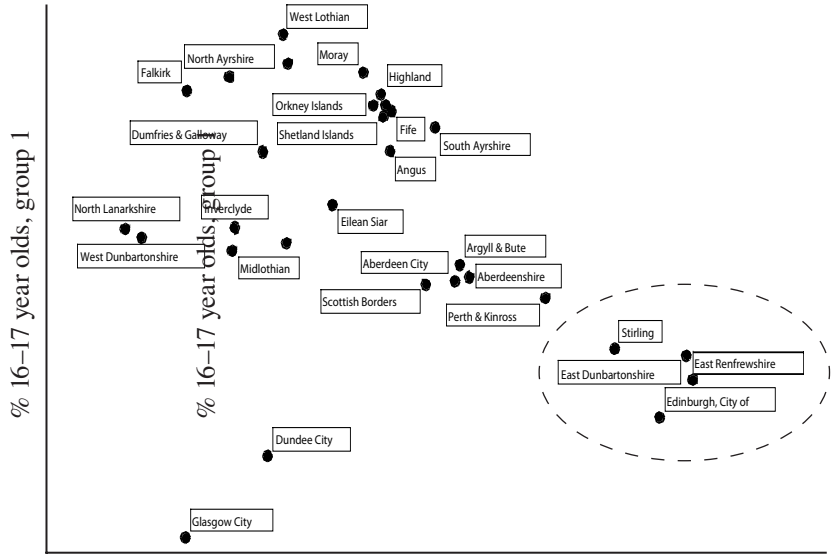


Note: Each circle is a county, unitary or former metropolitan authority, drawn with the area in proportion to the total population in 2001 (the largest circle represents London, with a population of just over 7 million). Areas in northern England are those that lie west or north of the counties of Gloucestershire, Warwickshire, Leicestershire and Lincolnshire (the Severn-Humber divide).
Source: Life in Britain, Report 4, 'Sons and Daughters'

Figure 2 shows that, in England, Wales and Northern Ireland, areas in which higher proportions of 40–54 year olds have good qualifications tend to also have more 16–17 year olds gaining qualifications. Areas with fewer well-qualified 40-54 year olds tend to have fewer qualified young people. However, this relationship differs for Scotland in two ways. First, the proportion of each age group with the specified qualifications is higher in most Scottish areas but, as before, this may be explained by the different nature of the qualifications and the way in which they are grouped together in the Census data. Second, there is no apparent relationship between the proportion of young people with qualifications, and people in their parents' generation with good qualifications in Scotland. Variation in the proportion of 16–17 year olds with qualifications between areas in Scotland is very much smaller than that among areas across the rest of the UK. In Scotland, the difference between the best and worst areas in terms of the proportion of children getting good qualifications is just over 10%. In the rest of the UK that difference is so large that in the best areas children are 90% more likely to get good qualifications than those in the worst areas. This difference *cannot* be because of the ways in which the Census groups qualifications.

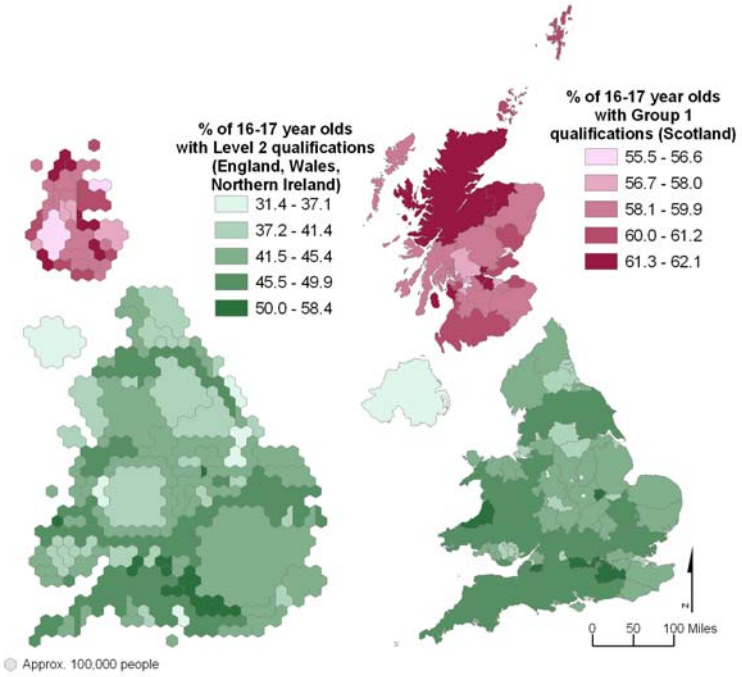
In this report we can explore the figures for Scotland in more detail. Figure 3 shows the relationship between educational attainments of these two age groups within the administrative districts of Scotland.

Figure 3: Association between the percentage of 16–17 year olds with Group 1 qualifications, and the percentage of 40–54 year olds with Group 3/4 qualifications



Although there is no statistically significant relationship between the two measures of educational attainment (r= -0.318, p=0.076), visual inspection of the graph reveals a more complex pattern. This kind of pattern is not well assessed by a straightforward linear correlation coefficient. The cities of Glasgow and Dundee are clear outliers, both having much lower levels of educational attainment among both age groups. There is also a distinct group of areas with a high level of Group 3/4 qualifications among those aged 40–54, yet relatively low levels of qualifications among the 16–17 year olds. This group comprises Stirling, East Renfrewshire, East Dunbartonshire and Edinburgh and is highlighted with a dotted circle on the graph. The precise geographical definition of the areas within this group, and the residential location of households with children, may partly explain why these areas are distinct from the others. Edinburgh for example, is a city with profoundly deprived estates within its boundaries, but also concentrations of highly educated and affluent residents. Young people aged 16 and 17 who are high educational achievers may well be more likely to reside with their families in the affluent commuter settlements outside the city boundary (West Lothian for example). We explored this possibility, and the general geographical distribution of qualifications at ages 16–17, using a map (figure 4).

Figure 4: Maps showing the percentage of 16–17 year olds with Level 2 qualifications (Group 1 in Scotland) and the percentage of 40–54 year olds with Level 4/5 qualifications (Group 3/4 in Scotland)



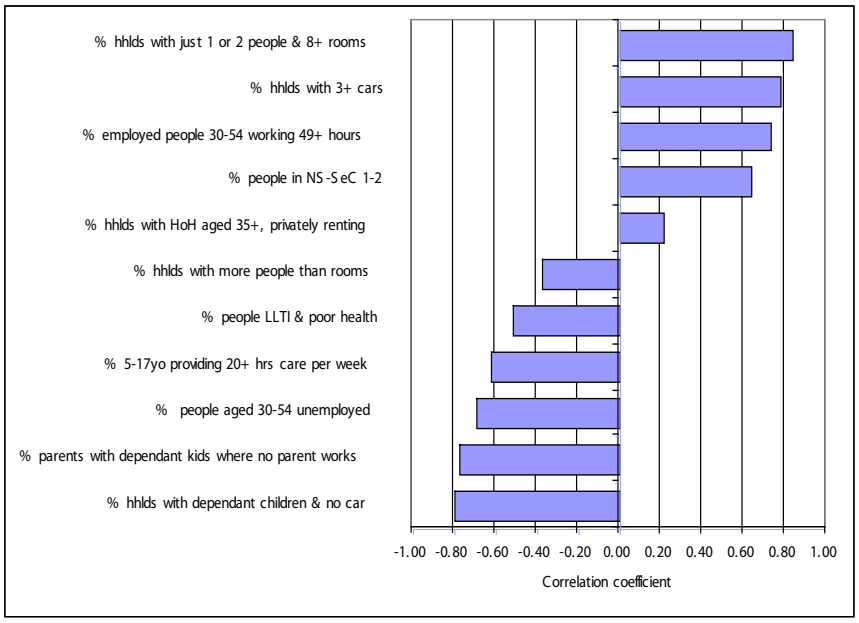
Note: Both maps in each figure represent the same places, shaded identically. The map on the left is a cartogram – each area is shown in proportion to the size of its population in 2001. The largest area is London, since it has the highest population of any of the places. The map on the right shows the actual boundaries of the areas[5]. Source: Life in Britain, Report 4, 'Sons and Daughters'.

Figure 4 offers some support for our suggestion that young people with group 1 qualifications concentrated in Edinburgh's hinterland and, interestingly, a similar effect can be seen to the south west of London. The most affluent families with teenage children tend to live on the periphery of major cities.

The conclusions which can be drawn from these analyses really depend on the assumptions made over what the 'proportion of 40–54 yr olds with good qualifications in an area' is actually measuring. We may speculate that this measure is a proxy for the wealth in an area, and perhaps for a culture conducive to learning. Perhaps it is simply not such a good proxy for wealth or culture among a Scottish population. We might assume the measure is a proxy for wealth, or for an education culture, because we know that those who are well-educated tend to end up living in areas with other well-educated people, working in good jobs[6]. Since, particularly in England, parents compete in the housing market to 'buy' a place for their children in the best schools, it is no surprise that well educated parents, who are more likely to have good jobs, can access schools with better exam results. Attitude to education within the home may also have an influence. It is plausible that those who know what it takes to navigate exams successfully are likely to offer their children a higher quality of support and advice than those with a less successful experience of school and exams. However, other research has shown children in areas where many parents are educated to degree level tend to do better at school irrespective of whether *their own* parents are educated to degree level[4]. Since the Census gives us so much information about the social,

economic and demographic contexts of people's lives, we can go further than mere speculation. We correlated our measure of academic success with variables which describe other socioeconomic and demographic features of the areas (figure 5).

Figure 5: Correlation coefficients between percentage of 16-17 year olds with Level 1 qualifications, and socioeconomic indicators from the 2001 Census (England, Wales and Northern Ireland only).*



The coefficient gives an indication of the strength of the relationship between the two variables, and a measure of statistical significance can be calculated to indicate the reliability of the coefficient. The coefficient can vary between +1 and –1. A correlation coefficient of +1 indicates a perfect, positive linear relationship between the two variables; 1 indicates a perfect, negative linear relationship and 0 indicates no linear relationship. LLTI denotes limiting long term illness.

All the variables included in figure 5 were significantly correlated with the percentage of young people aged 16–17 who achieved Level 1 qualifications in England, Wales and Northern Ireland. Bars to the right of the 0.0 line show that the variable is associated with a higher rate of Level 1 qualifications among those aged 16–17. Areas with a higher percentage of households with 3 cars for example, tend also to have a higher percentage of 16–17 year olds with qualifications. Bars to the left of the 0.0 line show that the variable is associated with a lower rate of Level 1 qualification at ages 16–17. Areas with a higher percentage of households in which there are dependant children, but which do not have access to a car, for example, tend to have a lower percentage of 16–17 year olds with qualifications. The results support the idea that the general level of affluence or economic adversity in an area is associated with attainment of qualifications, in England, Wales and Northern Ireland. However, we found *no* such relationships between these wide ranging indicators of socioeconomic characteristics and performance in Group 1 qualifications, in Scotland. It is certainly not the case that levels of the kinds of advantage or disadvantage captured by the variables in figure 5 are markedly different in Scotland. Scotland has its relatively affluent and deprived areas, just as the other home nations do. The results thus confirm that the Scottish education system seems to be more effective at enabling

young people to achieve Group 1 qualifications regardless of the kind of area they come from. Of course, this picture has emerged when we compared Unitary Authorities across Scotland. A somewhat different pattern might well emerge for smaller areas.

SUMMARY

Scotland demonstrates that a child's chances of having qualifications at age 16–17 do not have to be so strongly determined by where they live or by how well educated people in their parents' generation are. However, the Census cannot tell us *how* this is achieved – only that it is. Although we have focused on qualifications at aged 16–17, other research shows that the equality in achievement extends into higher education. Proportionally, far more children from the poorest parts of Glasgow go on to university than do children from the poorest parts of large English cities[4]. It is sometimes claimed that there has always been a very different attitude towards 'education for all' in Scotland, compared with the other home nations. These analyses suggest that this attitude bears fruit in the equality of achievement among Scotland's young people.

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NOTES

1 Wheeler, B., Shaw, M., Mitchell, R. and Dorling, D. (2005) *Life In Britain*. Policy Press (for the Joseph Rowntree Foundation).

2 Kuh, D., Head, J., Hardy, R. and Wadsworth, M. (1997) 'The influence of education and family background on women's earnings in midlife: evidence from a British National Birth Cohort Study', *British Journal of Sociology of Education*, Vol 18 (3): 385–405.

3 Department for Work and Pensions, Households Below Average Income 2002/03

4 Corver, M. (2005) *Young participation in higher education 1994–2001*, Bristol: HEFCE.

5 Wheeler, B., Shaw, M., Mitchell, R. and Dorling, D. (2005) *Life In Britain: Using Millennial Census Data to Understand Poverty, Inequality and Place, Technical Report*. Policy Press.

6 Life in Britain, Report No 8, Open All Hours.