Assessing change in levels of deprivation in the GoWell study areas

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Summary

An analysis of changes in rates of ‘employment deprivation’ between 2002 and 2011 was undertaken for the GoWell study areas in comparison with elsewhere in Glasgow and Scotland.

Only a marginal (one percentage point) decrease in the percentage of the population classed as ‘employment deprived’ was observed in Scotland over the time period. A slightly greater decrease occurred in Glasgow.

However, less change was observed across the different GoWell area ‘types’, suggesting that, in relative terms, the GoWell population as a whole may have become slightly more deprived than the rest of the city over the period.

More change was evident in analysis of the individual study areas. However, interpretation of the meaning of these changes is difficult for a number of reasons: the populations are generally small, and therefore susceptible to greater fluctuations in rates; many areas have experienced considerable increases and decreases in the size of their populations over the time period analysed (in some instances reflecting ongoing housing regeneration activity); and the impact of the asylum seeker population (who are not permitted to claim the social security benefits on which the measure of deprivation is based) is difficult to quantify. Furthermore, the increases in rates of in-work poverty which have been observed in Glasgow and Scotland in recent years are not reflected in the measure of deprivation used in the analyses.

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Introduction

GoWell is a ten-year research project seeking to investigate the impact of housing regeneration on individual and community health and wellbeing in Glasgow. As part of a regeneration programme spanning the city, 15 study areas were chosen for in-depth research. These areas have received, or were due to receive, different levels of regeneration investment, and on that basis were grouped into five corresponding area ‘types’. These are: Transformational Regeneration Areas (TRAs), neighbourhoods characterised by substantial planned demolition and rebuilding; Local Regeneration Areas (LRAs), where more limited, and smaller-scale, restructuring is/was planned; Wider Surrounding Areas (WSAs), neighbourhoods adjacent to the TRAs and LRAs which are likely to be affected by the impact of regeneration in the latter, while also undergoing improvements themselves; Housing Improvement Areas (HIAs), in which substantial internal and external upgrading of dwellings was planned; and Peripheral Estates (PEs), two large-scale housing estates on the city boundary. Although now in its tenth and final year, delays to housing renewal programmes (principally in relation to demolition, clearance and rebuilding) mean that evaluation of the impact of interventions in some areas is currently difficult to assess.

In 2008 an analysis was undertaken of levels of deprivation (measured by rates of ‘income deprivation’ from the 2006 Scottish Index of Multiple Deprivation (SIMD)\(^1\)) in the GoWell study areas compared with elsewhere in Glasgow and Scotland in the mid-2000s\(^2\). The analyses described in this paper sought to expand on that earlier work by analysing change in deprivation in the areas over the course of the 2000s, and comparing those levels of change with that observed elsewhere in the city and country.

As a result of modifications to the manner in which deprivation has been measured in Scotland over the period, it has been necessary to use a different (although related) measure of deprivation compared to that used in the analyses published in 2008.

Aims

To compare rates of socioeconomic deprivation, in both absolute and relative terms, in the GoWell study areas between 2002 and 2011, and in relation to levels of change observed in Glasgow and Scotland as a whole over the same period.

Methods

A detailed description of the methods employed are included in Appendix I. A brief overview only is provided here.

Deprivation measure

Employment deprivation, one of the domains of the SIMD, was used. This particular measure of deprivation is based on the percentage of the working-age population who are in receipt of a number of employment-related social security (‘welfare’) benefits. The latter include unemployment-related benefits (e.g. Jobseekers’ Allowance) and sickness-related benefits (Incacity Benefit, Severe Disability Allowance). It should be noted that employment deprivation has been shown to be very highly correlated with the overall SIMD score, and is thus deemed a good
proxy for multiple deprivation, as measured within this particular Scottish index. Further details of this are included within Appendix I.

Time period

The analyses cover two points in time: 2002 and 2011. Data for 2002 are based on the definition of employment deprivation included within the 2004 SIMD\(^3\), with data for 2011 based on the 2012 SIMD\(^4\). Although the precise definitions of employment deprivation included within the various iterations of the SIMD have changed over time, the versions included within these analyses are deemed to be comparable\(^4,^5\).

Geographical coverage

Employment deprivation data are published for all Scottish ‘datazones’. Datazones are small geographical units with an average population size of approximately 800 people\(^1\) at which various administrative data are published in Scotland. However, the boundaries of datazones do not correspond with the boundaries of the GoWell study areas. Thus, data for the different components of employment deprivation were instead obtained from the UK Department for Work & Pensions (DWP) for a set of smaller (census-based) geographical units; the latter were used to define the GoWell areas. Comparative data for Glasgow and Scotland were taken from the SIMD. There were some very slight definitional differences between the employment deprivation data included within the SIMD and those obtained from the DWP. However, the impact of these differences on the results of the analysis are likely to be minimal.

Population denominator data for the GoWell areas were obtained from the 2001 and 2011 Censuses.

Results

Main results

In 2002 just under 14% of the Scottish working-age population were deemed to be ‘employment deprived’ (i.e. in receipt of various employment-related social security benefits). The equivalent figure for Glasgow was, at 23%, considerably higher. Across the different GoWell area types, the figures ranged from 28.5% (in the two ‘Wider Surrounding Areas’ (WSAs)) to almost 37% in the Local Regeneration Areas (LRAs). Across the individual study areas themselves, rates of employment deprivation ranged from 28% (Scotstoun surrounding area) to over 50% (Gorbals Riverside).

By 2011, the Scottish figure had fallen very slightly (by one percentage point) to 12.8%. However, a greater reduction was observed in Glasgow, with the rate falling four percentage points from 23.1% to 19.1%. Across the GoWell area types less change was observed, with the figures for the two time periods showing virtually no change (WSAs), very small reductions (Transformational Regeneration Areas (TRAs), Peripheral Estates (PEs), LRAs) or very slight increases (Housing Improvement Areas (HIAs)). The same general trend (of little variation in rates over the period analysed) was true of many of the individual GoWell study areas (e.g. Scotstoun and Red Road wider surrounding areas, Sighthill, Riddrie, Birness Drive, Townhead). However, there were a small number of exceptions:

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\(^1\) Based on 2010 data for all Scottish datazones. The average figure for Glasgow is slightly higher, at approximately 850.
Drumchapel and St Andrew’s Drive saw reductions similar to that seen across the city as a whole, and greater decreases were observed in the Red Road core area and Gorbals Riverside. There were also notable increases in rates of employment deprivation recorded in Shawbridge and Govan. Reasons for some of these particular highlighted trends are discussed later in the paper.

All the above are presented in Figures 1 and 2 below.

**Figure 1.**
Figure 2.

Figure 3 presents the same data for the 15 GoWell study areas, but additionally includes comparative trends for the ‘GoEast’ area\textsuperscript{ii} (where rates of employment deprivation over the period fell from 40% to 26% of the working-age population) and five other (non-GoWell) TRAs\textsuperscript{iii}, which also showed decreases over the period, some particularly so (e.g. Laurieston). As is discussed later in the paper, all these areas experienced considerable changes in the size of their resident populations over the period analysed which are likely to have impacted on the deprivation figures shown. In the case of the GoEast area, the fall in deprivation took place alongside a population increase of more than 25%, suggesting a change in the type of resident population. Further research would be required to confirm this.

\textsuperscript{ii} A large area in the east end of Glasgow was added to the GoWell project in 2012.

\textsuperscript{iii} These are areas undergoing the same type of extensive regeneration activities as the GoWell TRAs, but which are not included in the study.
Figure 3. 

**Estimated levels of 'employment deprivation' 2002 and 2011**  
Source: calculated from DWP, SIMD and Census data

Figure 1 above confirmed that relative to the rest of Glasgow, and in particular relative to Scotland, the GoWell study areas are highly deprived. Figure 4 explores the national dimension in slightly more detail, comparing levels of deprivation recorded in the study areas in 2002 and 2011 with the corresponding figures for the 15% most deprived areas in Scotland. This confirms that levels of deprivation in the majority of GoWell areas have been similar to, or have exceeded, the 15% figure for the most deprived areas nationally over the whole period analysed.
Figure 5 compares levels of deprivation in the GoWell study areas in 2002 and 2011 with the overall distribution of deprivation across Glasgow (the latter shown as population-weighted employment deprivation deciles, where in each period ‘Decile 1’ represents the tenth of the population of the city classed as the most deprived, and ‘Decile’ 10 the tenth of the population categorised as the least deprived\(^\text{iv}\)). This again shows that even within a Glasgow context, GoWell areas generally are, and have been, characterised by high levels of deprivation.

In 2002 levels of deprivation in the study areas were similar to, or exceeded, rates of the four most deprived Glasgow deprivation deciles; around eight of the areas had rates at or above those of Deciles 1 and 2 (in other words, at or above the level of deprivation of the most deprived 20% of Glasgow’s population). The slightly greater reduction in employment deprivation rates observed in Glasgow compared with the GoWell population (as shown in Figure 1) meant that by 2011, the position of the GoWell areas relative to the rest of the city was slightly worse: all areas had rates of deprivation at, or exceeding, the levels of the three most deprived Glasgow deciles, with rates measured in nine of the areas equating to, or exceeding, rates for the two most deprived deciles. The change in the overall distribution of employment deprivation in the city as a whole between 2002 and 2011 is shown in Appendix II.

\(^{iv}\) See Appendix II for more details. Briefly, however, areas (datazones) within Glasgow were ranked in terms of the percentage of the working age population classed as employment deprived. The data were then broken down into ten equally sized groups (i.e. ensuring that each included one tenth of the city’s population). This was done separately for each time period analysed.
Estimated levels of 'employment deprivation' 2002: comparison with Glasgow-specific deciles
Source: calculated from DWP, SIMD and Census data

Estimated levels of 'employment deprivation' 2011: comparison with Glasgow-specific deciles
Source: calculated from DWP, SIMD and Census data
Asylum seeker population

As described in more detail in Appendix III, one of the main weaknesses of measuring deprivation in the GoWell areas in terms of individuals’ receipt of employment-related social security benefits is that the asylum seeker population, considerable numbers of whom have been resident in the GoWell study areas in recent years, are included in the population denominator data (i.e. the count of working-age residents recorded in the census), but not in the ‘numerator data’ (i.e. the count of benefits recipients). This is because the UK Government Home Office denies asylum seekers the right to claim these benefits. In the analysis published in 2008, a crude adjustment to the 2004 income deprivation rates was made, reducing the population (denominator) data according to estimates of the size of asylum seeker population resident in each area (as recorded in the first (2006) GoWell survey). As discussed in Appendix III, the accuracy of that adjustment is questionable, and further potential data weaknesses mean that it is difficult to ‘correct’ the 2002 and 2011 data presented within this paper with any level of accuracy.

Despite this, however, it is important to emphasise that, overall, the available data suggest that the ‘true’ levels of employment deprivation among the non-asylum seeker populations of Scotstoun core area, Red Road core area, Sighthill and Shawbridge was likely to have been higher in 2002 than the data in Figures 2-5 above suggest (possibly by about 20-25%). Given the reduction in the size of the asylum seeker populations in the GoWell areas over time, it appears likely that the 2011 figures will have been much less affected by the issue. However, crudely adjusted data suggest that the Red Road core area was still particularly affected by this in the later period: it appears that a very high percentage of the remaining non-asylum-seeker population resident in the area in 2011 was ‘employment deprived’. These crudely adjusted figures are shown in Appendix III.

Discussion

Overall findings

In absolute terms, levels of employment deprivation in Scotland as a whole (as routinely measured in recent years by this component of the SIMD) decreased by only one percentage point between 2002 and 2011. In Glasgow City, the reduction was greater, and was generally greater across the city as a whole than was the case in most of the GoWell study areas: as a result, there is some limited evidence that over the period, the GoWell population has, in relative terms, become slightly more deprived than the rest of the city.

Notable increases in rates of employment deprivation were recorded in Govan and Shawbridge. In the case of the former area, the population size is small (just over 800 people of working age lived there in 2011) and the observed change over the two time periods shown here may just reflect year by year fluctuation in rates often associated with small populations; alternatively it may be influenced by population decline (the size of the population decreased by 16% over the period). In the case of Shawbridge, the area’s population decreased by some 70% (because of demolition and clearance) and clear interpretation of the trend is made even more difficult because of the issue of the resident asylum seeker population discussed above\(^v\). As Figure 6 shows, population change over

\(^v\)It is notable that the increase in employment deprivation between 2002 and 2011 is considerably reduced when the asylum seeker population is removed from the calculations. See Appendix III for more details.
the period is a characteristic of many of the areas analysed, including (and especially) all the TRAs (GoWell and non-GoWell). In this context, changes in rates of employment deprivation can be difficult to interpret.

Figure 6.

The increase in the size of the working age population in Gorbals Riverside may have contributed to the decrease in the rate of employment deprivation observed in the area over the time period, or again it may simply reflect small-area based fluctuation: despite the area’s working-age population size increasing by more than a quarter (Figure 6 above), in 2011 it was less than 500 people.

Strengths and weaknesses

How accurate a picture of deprivation do these data portray? As stated earlier (and illustrated in Appendix I), employment deprivation is extremely highly correlated with the overall SIMD score and, in that sense, it can be said to be a good proxy for levels of ‘multiple deprivation’ experienced by the population (at least in terms of how it is measured by the SIMD). On the other hand, however, there is considerable debate regarding whether, and to what extent, these types of data truly capture the experience of poverty in Scotland, and particularly in Glasgow. Furthermore, the data arguably fail to capture the recent increases in in-work poverty, which have been the focus of much attention in social policy circles. The exclusion of the asylum seeker population adds two further levels of uncertainty: it ‘artificially’ reduces the calculated rates of deprivation in certain areas, but also ignores the poverty experience of the asylum seeker population itself. Townsend’s well-known definition of relative deprivation (“people are relatively deprived if they cannot obtain, at all or sufficiently, the conditions of life… which allow them to play the roles, participate in the relationships and follow the customary behaviour which is expected of them by virtue of their membership of society”) clearly applies very much to this excluded population who have been
resident in great numbers in several of the GoWell study areas over the period analysed in this paper.

Comparison with the previous analysis of deprivation

How do these data compare with the previous work estimating levels of ‘income deprivation’ across the GoWell areas? Broadly the scale and range of deprivation from the two sets of analyses are comparable vi. There are, however, some differences. For example, in 2004 the St Andrew’s Drive study area had the highest rate of deprivation, and that was not the case in the analyses reported here for 2002 and 2011. As with Govan and Gorbals, this may reflect small area-based fluctuation in rates. An alternative explanation may lie with the use of the Community Health Index (CHI) as the population denominator in those analyses, as this is known to be much less accurate than the census vii. It may also relate to inaccurate estimates of the size of the asylum seeker population in the area, or other aspects of the population composition of the area (e.g. relatively higher numbers of children, as children are included in the calculation of ‘income deprivation’, but not in the calculation of employment deprivation). It may reflect a combination of some or all of these issues. More generally, this difference serves as a useful reminder of the many caveats that exist around this type of estimation of deprivation for such small areas.

Conclusion

There are a number of caveats associated with calculating levels of, and change in, rates of deprivation across the GoWell study areas using routinely available social-security benefits data. The analyses presented within this paper, therefore, present an imperfect, partial picture. Taken as a whole, however, they suggest there may have been some modest improvements in rates of employment deprivation experienced in Glasgow as a whole in the 2000s, but less so across the GoWell study areas. However, interpretation is made difficult because of limitations of the data, the rise of in-work poverty not captured by the measure used, changes in the size (and potentially type) of resident populations, and not least (and related to the latter point) the fact that TRAs are still undergoing demolition and clearance, making evaluation of change in these GoWell areas difficult.

vi Across GoWell area types, rates of income deprivation in 2004 ranged from 29% to 42% (of the total population). Across the individual study areas, the range was 25% to 54%. The equivalent figures for employment deprivation in 2002 (expressed as a percentage of the working-age population) was 28% to 37% (area types) and 28% to 56% (study areas).

vii CHI provides area-based estimates of the number of individuals who are registered with a General Practitioner (GP). However, it is known to overestimate the size of populations (e.g. relating to those who move from an area but do not de-register with their GP), with certain age groups particularly affected. An adjustment for this inflation is normally applied to the data for analytical purposes.
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Appendix I: calculation of employment deprivation for GoWell study areas (and comparator areas).

As stated in the main part of the paper, employment deprivation is one of the domains of the Scottish Index of Multiple Deprivation (SIMD). It has been included in the four iterations of the SIMD published to date (in 2004, 2006, 2009 and 2012), calculated from UK Department for Work & Pensions (DWP) data from 2002, 2004, 2008 and 2011 respectively. Although the precise definitions of employment deprivation have changed over the period, the measures used in 2002 and 2011 (the period of analysis included in this paper) are deemed to be comparable

The different components of employment deprivation in 2002 were:

- Incapacity Benefit recipients, men < 65 years, women < 60 years (April 2002).
- Severe Disablement Allowance recipients, men < 65 years, women < 60 years (April 2002).
- Compulsory ‘New Deal’ participants: New Deal for the under 25s and New Deal for the 25+ not included in the unemployment claimant count (April 2002).
- Unemployment Claimant Count averaged over 12 months, men < 65 years, women < 60 years (2002).

In 2011 the definition was based on:

- Working Age (men < 65 years, women <= 60 years) Incapacity Benefit recipients or Employment and Support Allowance recipients (August 2011).
- Working Age Severe Disablement Allowance recipients (August 2011).
- Working Age Unemployment Claimant Count averaged over 12 months (2011).

In both cases, counts of all individuals in receipt of these benefits were summed, and expressed as a percentage of the resident working-age population.

SIMD data are routinely published at the level of datazones. Because boundaries of datazones do not fit well with boundaries of GoWell areas (nor with the ‘GoEast’ and non-GoWell TRA areas included in the analyses), all these areas had to be redefined in terms of small geographical units used in the 2001 and 2011 censuses (‘output areas’). This was done using Geographical Information System (GIS) software. Data matching the individual components of the employment deprivation definitions above were then requested (as a Freedom of Information (FOI) request) from the DWP. These data were supplied for each defined area, aggregated from 2001 census output areas. The data received from the DWP were virtually identical to the SIMD definitions. However, there were two small differences:

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viii Note the slight difference between this definition of working age (including women aged 60 years) and the previous one (which only included women up to 59 years). This was altered to account for changes to the female state pension age.

ix Employment and Support Allowance was introduced in 2008, replacing new claims for incapacity benefit.

x The DWP used 2001 census output areas for both periods, 2001 and 2011.
• instead of the unemployment claimant count, Job Seeker Allowance data were supplied: the two counts are more or less identical (e.g. in 2007 there was only a 1% difference between the two total figures for all Great Britain\textsuperscript{13}).

• 2002 data were for May, not April.

DWP advice was that these differences would not impact greatly on any comparisons of the data with the SIMD-defined measures of employment deprivation.

A further difference was that population denominator data from the 2011 Census were only available for females ages 16-59 years, and not 16-60 years. Again it is unlikely that this would have had a major impact on the results of any of the analyses presented.

The denominator data for each area were taken from the census, aggregated from the sets of 2001 and 2011 output areas.

As stated in the main text of the paper, employment deprivation rates are highly correlated with overall SIMD scores. An example is shown below from the 2012 SIMD (Figure A).

Figure A.
Appendix II: Change in distribution of employment deprivation in Glasgow, 2002 and 2011.

As described briefly in the main text, the distribution of employment deprivation in Glasgow in 2002 and 2011 was assessed by creating, for each period, a set of population-weighted deprivation deciles. This was done using a standard methodology based on ranking all the areas (datazones) within the city in terms of their associated rates of employment-deprivation, and then categorising them into ten equally-sized groups, each containing one tenth of the city’s population.

A comparison of these distributions is shown in Figure B.

Note that both sets of deciles are specific to their time period: thus areas included in a particular decile in 2002 may not be included in the same decile in 2011. For example, not all areas classed as Decile 1 (most deprived) in 2002 will have experienced a decrease in their rate of employment deprivation in 2011.

Figure B.
Appendix III: estimated effect on deprivation rates of exclusion of asylum seeker population

As stated in the main part of the paper, over the period analysed a number of GoWell areas have housed considerable numbers of asylum seekers. In calculating rates of employment deprivation (both in these analyses, and in published national reports), the asylum seeker population is included within the census-based denominator data, but is excluded from the ‘numerator’ data. This is because asylum seekers are prevented from claiming any of the social security benefits used in the definition of employment definition. For some areas this can result in rates of employment deprivation being underestimated.

Data limitations mean it is not possible to accurately address this problem. However, an attempt was made to – very approximately – assess the possible effect of excluding the asylum seeker population from the calculations.

As stated, data were analysed for two time periods: 2002 and 2011. For the latter period, estimates of the percentage of the working age population in each area who were asylum seekers were obtained from the 2011 GoWell survey. It is difficult to assess how accurate these figures are. First, it is possible that asylum seekers were less likely to participate in the survey than other residents. Second, the estimates are unweighted and are thus, given response rates and the small size of some of the study areas’ populations, unlikely to be representative at the study area level. In any case, given the nature of this population, it would not be possible to weight for non-response.

The 2011 Census-based populations were adjusted (reduced) according to these estimates, and new deprivation rates calculated.

For 2002 data, this ‘adjustment’ was even more problematic. As the first GoWell survey took place in 2006, no data on the size of the asylum seeker population resident in the study areas were available for this earlier period. However, alternative data were accessed from Glasgow City Council (GCC): these included estimated counts of the number of asylum seekers in Glasgow datazones for the years 2001-2005\(^\dagger\). To estimate the likely (or, at least, possible) change in the number of asylum seekers resident in each area between 2006 (the year of the first GoWell survey) and 2001, the percentage change between 2001 and 2005 was calculated from the GCC data for datazones included within, or overlapping with, the study areas. This was then applied to the 2006 survey data, with the resulting figures (the very approximate expected size of the asylum seeker population in each area in 2001) used in calculating the ‘adjusted’ deprivation rates in the same manner as was done for the 2011 data.

Given all the above, the resulting estimates of ‘adjusted’ rates of employment deprivation in the study areas are unlikely to be reliable. As stated in the main part of the paper, however, taken as a whole, the data suggest that rates of employment deprivation presented in the paper are likely to be underestimates in four study areas in 2002 (the high-rise estates of Sighthill, Scotstoun Core, Red Road Core and Shawbridge) and in the Red Road core area in particular in 2011. The adjusted figures are shown below in Figure C.
Figure C.

(Very crudely) adjusted levels of 'employment deprivation' 2002
Source: calculated from DWP, SIMD and Census data

(Very crudely) adjusted levels of 'employment deprivation' 2011
Source: calculated from DWP, SIMD and Census data
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