The relationship between poverty and deprivation, educational attainment and positive school leaver destinations in Glasgow secondary schools

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ABSTRACT

The impact of poverty and deprivation on children and their education is a major source of concern for the United Kingdom and Scottish governments. This article reports on a research project that focussed on Glasgow city secondary schools for the period 2006-2009. The project aimed to establish an association between poverty and deprivation and attainment in public examinations and also in initial leaver destinations. The project constructed a tri-partite means of measuring poverty that used Free School Meal Entitlement, the Scottish Index of Multiple Deprivation and Staged Intervention. This measure was then compared with attainment figures and initial leaver destinations. Unsurprisingly, the research demonstrates that there is a major association between poverty and deprivation and attainment for the period. However, the research also demonstrates that there is no major association between poverty and deprivation and initial leaver destinations and that some schools serving poorer areas are particularly successful in securing a high proportion of initial leaver destinations.

INTRODUCTION

Poverty has been a pressing matter for the United Kingdom and Scottish Parliaments in the progression into the third millennium. The UK Labour Government (1997-2010) and the Scottish National Party minority Scottish Government (2007-2011) both pledged to combat poverty. The election of the UK coalition Government (2010-) prompted the publication of a 'Programme for Partnership Government'. This document has not explicitly identified poverty as one of the key targets for the new government, but, in a move that could be interpreted as conflating poverty and social mobility, it is stated that the coalition aims to 'unlock' social mobility (HM Government, 2010). The aims of the Government and the increasing conflation have been consolidated by the publication of the coalition Government's first national Child Poverty Strategy, 'A New Approach to Child Poverty: Tackling the Causes of Disadvantage and Transforming Families' Lives' and the strategy for social mobility, 'Social Mobility Strategy Opening Doors, Breaking Barriers' (Department of Works and Pensions and Department for Education, 2011; HM Government, 2011). Part of the remit of these documents was to outline how the targets set in the Child Poverty Act 2010 were to be met. The latter 2011 document proposed the establishment of a Social Mobility and Child Poverty Commission. The SNP in Scotland gained a majority at the 2011 election and continues to be committed to their strategic objectives, which include a 'Wealthier and Fairer Scotland' and a national indicator of Scotland's performance that aims to decrease the proportion of individuals living in poverty (Scottish Government, 2009a, 2011a). The Scottish Government response to the Child Poverty Act was the 'Child Poverty Strategy for Scotland' (Scottish Government, 2011b).

Poverty remains a major issue because the effects of poverty have enormous individual, family and wider societal implications (Hirsch, 2008a, Scottish Government, 2011a). The issue of poverty, and how to combat poverty, is, however, complex and multi-layered. There is considerable debate, for example, on how to define poverty and how to measure poverty

and the effects of poverty. There are classifications of poverty as absolute, relative, persistent or severe (Kelly and McKendrick, 2007; Save the Children, 2011; McKendrick, 2011a). Measuring the effects of poverty has become increasingly challenging because of the continuing economic crisis and the related rises in fuel poverty and in the cost of food and other essential goods (Burnett and McKendrick, 2007). In recent years, one of the challenges has been how to define and use household income as a measure for poverty (McKendrick, 2011b). Many poverty analysts believe that poverty should be measured on income after housing costs have been deducted (the Scottish Government currently measures poverty before housing costs). This would raise the figure of those deemed to be living in poverty in Scotland from 860,000 to 970,000 (figures for 2008/9, McKendrick, 2011b). A seemingly equitable way to measure poverty would be to use the disposable income available to families (after tax, National Insurance and housing costs have been met), but this does not account for other factors such as servicing debts or the higher cost of living in rural areas (McKendrick, 2011b).

While the discussion on measuring poverty becomes more refined, it is clear that poverty is directly related to low income, and, while not limiting the discussion of poverty to low income, it is recognised that income poverty has been the prominent focus of the anti-poverty policy debate and initiatives in Scotland and the UK (McKendrick, 2011a). Low income can be misinterpreted as referring exclusively to low income as a result of reliance on state benefits (Green, 2007). The categorisation of low income also includes low paid employment and cyclical patterns of low paid, insecure work and unemployment (Green, 2007). There are questions about the level of income (combined with type and scale of benefits and services) and the other factors (e.g. opportunity, aspiration and stability) required to ameliorate the effects of poverty (Department of Works and Pensions and Department for Education, 2011). One of the surprising statistics, identified in much of the academic literature, is that between 20% and 25% of low paid workers are employed in the public sector (Sinclair and McKendrick, 2009). Deprivation is a term that is frequently used in the discussion on poverty and anti-poverty discussion and will be used in this article in conjunction with poverty. It is a wider term than poverty and does not simply refer to low income. Deprivation refers to difficulties caused by lack of resources and opportunities (including financial) (McKendrick, 2011a, The Scottish Government, 2009b).

CHILDREN, POVERTY AND EDUCATION

Children are identified as being one of the most vulnerable groups who experience the effects of poverty (other vulnerable groups include disabled and refugees/asylum seekers) (Green and Doyle, 2007). The United Kingdom and Scottish Governments, in their highly publicised initiatives to tackle poverty, committed to halving child poverty by 2010 and eradicating it by 2020. Neither Government has met the target for 2010, and some current estimates suggest that greater investment will be necessary to meet the 2020 target and any interim targets (Hirsch, 2008b). The effects of poverty, then, continue to be felt by children who are born into poor households (on a low-income) and who will experience deprivation. These children are less likely to enjoy the benefits of adequate clothing and shoes; healthy food and diet; secure family and social environment and social and cultural activities (Muir and Gracey, 2007; Green, 2007; Burnett and McKendrick, 2007). They are often trapped in what has been described as a 'cycle of deprivation' (House of Commons, 2008). Barnardos (2007) cite the Child Poverty Action Group report (2002) review, which states that most people remain in the same quintile of income distribution as their parents. Poverty and deprivation can, therefore, be described as 'generational' – passed from generation to generation. The reduction in child poverty is perceived to be one of the keys in breaking the cycle of deprivation and one of the routes to social advancement has been perceived to be education – early years and school education, but also Further and Higher Education (House of Commons, 2008; Department for Education, 2011; Department of Works and Pensions and Department for Education, 2011).

This can be problematic for a number of reasons. Recent research evidence emphasises that the educational gap between children from low-income homes and those in higher income brackets begins at the early years stage and requires early intervention (Washbrook and Waldfogel, 2010; Department of Works and Pensions and Department for Education, 2011; Scottish Government, 2011b). This is a result of low-income homes often regarded as being deficient in an early childhood caring environment and cultural capital (Goodman and Gregg, 2010). Further, poverty and deprivation can be a barrier to accessing the higher attaining comprehensive schools. In England and Wales, the families from low-income homes may not always have ready access to exam performance data in the selection process for schools (Allen and Burgess, 2010). The children from these homes may also have difficulties travelling to the higher attaining comprehensive schools because the schools are often in more affluent areas. Families with higher income have the financial means to live in the catchment area for such schools (Smithers and Robinson 2010; McNally and Blanden, 2006). There is a similar situation in Scotland. The admissions procedures for high-attaining schools in a number of Scottish Councils are initially determined on a rigid postcode basis (e.g. East Dunbartonshire Council, 2011; East Renfrewshire Council, 2011).

Children from low-income homes can be disadvantaged in the level of engagement with school education. The combination of the hardships listed above means that children from poor households are less equipped to take advantage of the educational opportunities and possibility of social advancement offered by state-funded school education (McNally and Blanden, 2006; Muir and Gracey, 2007). Preston (2008) points out that children from low income homes are more likely to be either excluded from school or exclude themselves. If these children do attend school regularly, they are more likely to encounter difficulties in school and attain lower exam results than average (Hirsch, 2008a). The focus on the importance of education for children from low-income families is not, however, restricted to attainment in public examinations and access to Further Education and Higher Education, but on all positive school leaver destinations. The term 'Positive school leaver destinations' incorporates training, employment and voluntary work destinations. The Scottish Government (2011b) identified 'more young people in positive and sustained destinations' as one of its key outcomes in improving children's life chances.

This research project aimed to establish the association between poverty and deprivation and attainment in school examinations and, further, the relationship between poverty and deprivation and initial school leaver destinations in Scotland. This was to be achieved by using quantitative research methodology. The project hoped to establish whether the association between poverty and deprivation and school attainment evident in other parts of the UK was reflected in the Glasgow context. The City of Glasgow was selected as an appropriate basis for study, given the level of poverty and deprivation recorded in the city. This choice will be explained and discussed in the next section. Prior to undertaking the statistical research, the team critically reviewed the use of free school meal entitlement as a reliable indicator of poverty and decided to adopt other indicators to refine the measurement of poverty and deprivation. This will be discussed in the methodology section.

GLASGOW, POVERTY AND SECONDARY SCHOOL EDUCATION

Glasgow is the largest city in Scotland and experiences a significantly high proportion of poverty and deprivation and social problems. According to the Scottish Index of Multiple Deprivation, 31% of the 15% most deprived data zones in Scotland are in Glasgow (The Scottish Government, 2009b). The City Council has been actively involved in intervention in the issue of poverty and deprivation and education in Glasgow, often with regional and central government assistance, and has undertaken some initiatives aimed at improving the living situations and opportunities available to its citizens (Glasgow City Council, 2008, 2009). Many of these initiatives have specifically targeted the educational attainment and leaver destinations of its school students. More recently secondary schools have taken part in school-based initiatives such as the Schools of Ambition programme (a Scottish Government initiative) and the Glasgow Partner Initiative (a joint city, Scottish Government

and Hunter Foundation scheme) (Schools of Ambition, 2010, Menter et al., 2010). Together these programmes involved just over a third (ten) of the City's twenty-nine secondary schools in developing and sustaining work aimed at improving the life chances and attainment of their pupils. Partner initiative schools were specifically asked to focus on the least able pupils. Despite the success of these initiatives, pupil attainment figures for the city of Glasgow remain below the national figures and those of other Scottish cities, but school leaver destinations compare more favourably with national figures (Scottish Schools Online; The Scottish Government, 2009c).

METHODOLOGY

In exploring the association between measures of poverty and deprivation and pupil success in Glasgow's secondary schools the research firstly identified a number of relevant data sources and measures. These are listed and discussed below. Our general approach was, wherever possible, to identify data for three years (2006/7, 2007/8, 2008/9) and aggregate figures for these years. This had the advantage of increasing the numbers of pupils included in the research and reducing the potential effects of year on year variations. Discussions with colleagues in Glasgow City and the Scottish Government suggested to us that we should not include figures for years prior to 2006 since typically there appeared to be greater uncertainty over the reliability of this data. One of the concerns was to identify reliable indicators of poverty and deprivation. We adopted the following three indicators: Free meal entitlement; Scottish Index of Multiple Deprivation and Staged Intervention.

Free Meal Entitlement (FME)

For many years educational research projects have used FME as a proxy measure for poverty (Department of Works and Pensions and Department for Education, 2011). It represents a relatively simple measure (the proportion of pupils in a school qualifying for free meals) and it is a measure that is readily available. However, it has limitations as a measure of poverty. Kounali et al. (2008) argue that it is a coarse and unreliable indicator - the children identified as entitled to free school meals represents a proportion of the children who are living in poverty. Some parents may not be willing to register for free school meals because they are unaware of their entitlement or feel shame in claiming this benefit. Smithers and Robinson (2010) suggest that this may be the reason why parents with children in academically selective Grammar schools in England are less likely to claim FME. Even if all parents claimed FME the cut-off point for entitlement excludes a significant number of low-income families (Kounali et al., 2008).

Despite the limitations of FME, it was retained for this research project (it remains a commonly-available and used measure) but, comparable to some other contemporary studies on the effects of poverty on education that remain critical of the limitations of FME, it was used in conjunction with other indicators of poverty and deprivation. Dunne et al (2007), for example, used FME in conjunction with residential neighbourhood classification (ACORN) schema and Smithers and Robinson (2010) used FME with the Income Deprivation Affecting Children Index. This research project used FME and an indicator of deprivation for the Scottish context, the Scottish Index of Multiple Deprivation, but it also used a proxy measure for poverty, Staged Intervention.

Within the period 2006-2009, the overall proportion of secondary pupils in Glasgow City qualifying and registering for FME has fallen slightly, a trend also seen at national level. Despite this, Glasgow City schools continue to record a significantly higher rate of FME compared to the Scottish national average. In 2006/2007, 31% of Glasgow City pupils were registered for free school meals compared to the national figure of 13%. In 2007/8, 30% of Glasgow City pupils were registered for free school meals compared to 13% nationally. In 2008/2009, the figures were 27% and 12% (Scottish Government, 2007, 2008, 2009d).

Scottish Index of Multiple Deprivation (SIMD)

The Scottish Index of Multiple Deprivation (SIMD) General Report draws on a range of variables in calculating the Index: Current Income; Employment, Health, Education, Housing, Access to Services and Crime (The Scottish Government, 2009b). As such it represents a multi-dimensional approach to the measurement of deprivation. One of the limitations is that the Index is primarily geared towards the identification of geographical areas of deprivation and not the indication of individuals experiencing deprivation. Residence in a deprived area does not necessarily indicate individual or family deprivation. However, there is a greater likelihood of experiencing aspects of deprivation if one lives in a multiply deprived area (compared to not living in such an area). We adopted '*the proportion of a school's pupils residing in an area identified as among the 15% most deprived in 2009*' as our measure of deprivation. The SIMD was first published in 2006 and then again in 2009. Therefore we could not aggregate data for three successive years. As has been stated above, Glasgow has the highest concentrations of the 15% most deprived areas in Scotland (The Scottish Government, 2009b). As with the incidence of FME in the city the number and proportion of data zones in Glasgow that are in the 15% most deprived on the overall SIMD has also fallen. The decrease has been from 34% to 31% of the 976 data zones in the 15% most deprived in Scotland (the national share) (The Scottish Government, 2009b). While FME and SIMD represent two different and distinct measures of poverty and deprivation we found a significant (1% level) positive correlation (0.901) between the two measures. Generally speaking this means that the higher the proportion of FME in a school the higher the SIMD figure and vice versa.

Staged Intervention (SINT)

The third indicator was Staged Intervention. This indicator was suggested to us by our colleagues in Glasgow City Council as a possible proxy measure for poverty. There may be justifiable sensitivity surrounding the use of SINT and this measure is perhaps less commonly used as an indicator of poverty compared to FME, but there is research evidence from England that demonstrates that pupils with special educational needs (SEN) in mainstream education (schools, academies and City Technology Colleges) are 'disproportionately eligible' for FME (Department for Children, Schools and Families, 2009). The statistics show that pupils in England who have a statement of SEN are 'twice as likely to be eligible' for FME as pupils who have no statement of SEN. Glasgow City records the number and type of intervention required by pupils in its schools. We looked at the combined figures for pupils in Stage 3 (requiring resources external to establishment but within education services) and Stage 4 (Multi-agency involvement) in 2009. Again discussion with our City colleagues suggested that data for previous years was likely to be less reliable, so the inclusion of SINT was restricted to figures for 2008-2009. It was apparent that the incidence of Staged intervention (Stage 3 and 4) was greater in schools with higher levels of FME and with more pupils residing in the most deprived neighbourhoods. Correlating SINT with FME produced a significant (5% level) figure of 0.417 and with SIMD a significant (5% level) correlation of 0.424. Clearly these correlations are not as strong as the association that exists between FME and SIMD. It was also apparent from the data that two secondary schools stood out from the others in having substantially larger proportions of their pupils in Stage 3 and Stage 4 than other schools (School A - 31.6% and school B - 25.7%, the average figure for the city was 9.2%). While SINT is of less value, than either FME or SIMD, as an indicator of poverty (and deprivation) it may have a contribution to make in 'explaining away' school differences in pupil attainment and leaver destinations (see section on findings).

Aggregating indicators of poverty and deprivation (POVAR and POVAR 2)

From our own understanding, and following discussions with colleagues in Glasgow City Council and the Scottish Government, it was apparent that neither FME nor SIMD individually represented wholly satisfactory indicators of poverty and deprivation in relation to schools. Given the relatively high correlation that exists between the two variables we decided to aggregate (weighted) FME and SIMD scores for each school into a combined indicator of poverty and deprivation (POVAR). Following this procedure and the subsequent analysis we created another variable (POVAR2) which added (weighted) SINT scores to the schools POVAR scores. We speculated that this process would increase the correlation between the measures of poverty and deprivation and measures of success by accounting for at least one additional variable (albeit at a simple level) and potentially improving the 'fit' between poverty and deprivation and attainment. We also felt this process would help 'account for' the two schools with substantially more pupils identified as stage 3 or stage 4 intervention.

Measures of success

We measured pupil success in two ways: firstly, through school performance on a limited number of SQA examination criteria, and, secondly, through analysis of pupil leaver destinations. In both these instances we aggregated performance over a three-year period (2006/7, 2007/8, 2008/9). We chose the level of examination success that would be required for entry into Further Education or Higher Education. Thus, we included in our analysis:

(1) Five or more Standard Grades at S4 (examinations undertaken at secondary school level four, normally age 15/16) at Credit level that would enable entry onto some Further Education courses.
(2) Three or more Higher grades at S5 (examinations undertaken at secondary school level five, normally age 16/17) that enable entry onto some Further Education courses and are the normal route to Higher Education.
(3) Five or more Higher grades at S5 (required for the more prestigious courses in Higher Education)
(4) Three or more Higher grades at S6 (examinations undertaken at secondary level 6, normally age 17/18) that enable entry onto some Further Education courses and are the normal route to Higher Education.
(5) Five or more Higher grades at S6 (required for the more prestigious courses in Higher Education).

Glasgow City schools exam results, and the overall national figures, have been relatively static over the period 2006-2009 (with some slight fluctuation), as has been the differential between Glasgow City results and the Scottish average. In 2007, for example, 22% of S4 pupils in Glasgow achieved five or more awards at SCQF level 5 (Credit) compared to 33% of S4 pupils nationally. For 2008, the figures were 22% and 34% and for 2009, 23% and 35%. At Higher Grade, in 2007, 14% of the Glasgow S4 year group from the previous year achieved three or more awards at SCQF Level 6 (Higher) or better compared to 22% nationally. The figures for 2008 and 2009 were 15% and 22% and 13% and 23%. For the Glasgow S6 year group for 2007, 18% achieved three or more awards at SCQF Level 6 (Higher) or better compared to 29% nationally. For 2008 and 2009 the figures were 20% and 30% and 21% and 31%. Staying on at school rates affect the potential of a year group to gain awards in S5; therefore a low staying on rate may be part of the explanation for a low percentage of awards at this stage. In 2008/9 the staying on rate[1] for Glasgow was 64% compared to the national rate of 67%.

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[1] Calculated by dividing the S5 January roll by the previous year's S4 September roll

Missing data

The process of acquiring and aggregating exam performance data was relatively straightforward. However, 'missing' data did present a challenge. When the number of awards in a school on any of the measures of attainment falls between one and five pupils, the actual number is withheld (to minimise the potential for identification of individuals). This situation was most likely to arise with Higher results in certain schools. In an attempt to replace the missing data, in the first instance, we 'assumed' three awards (the middle value) to minimise the potential size of error in the school. However, if an estimate is also required for additional years this can compound the error. In a number of secondary schools figures were estimated for all three years (2006-2009) in respect of the following.

S5 - three or more Higher Grades - 2 schools
S5 - five or more Higher Grades - 2 schools
S6 - five or more Higher Grades - 3 schools

While we do not anticipate this estimated data to have had a serious effect on the analysis/findings we became aware that only schools with higher levels of FME or SIMD required replacement.

School leaver destinations

The importance of school leaver destination has been discussed above and was noted in the Glasgow City Child Poverty Project (2009):

> For children and young people living in poverty, employment is often the main means of attaining a better life. Youth employment promotes social integration and citizenship, and benefits economic development.

Consequently we reviewed school leaver destination data for 2006 – 2009. The overall positive leaver destination figure for Glasgow City compares very favourably with the national figures for the three-year period (The Scottish Government, 2009c). In Glasgow, for 2006/7, 83.0% of leavers secured a positive destination compared to 86.6% of leavers nationally. For 2007/8 and 2008/9 the figures were 82.7% compared to 86.4% and 84.0% compared to 85.7%. However, there were some differences in the proportions of leavers entering particular destinations. The percentage of Glasgow school leavers entering higher education compared to the national average is considerably lower for all three years (a differential for the three years ranging between 7% and 9%). A slightly lower percentage of Glasgow leavers entered employment for years 2006/7 and 2007/8 (3% less that national average), but the percentage for 2008/9 almost equals the national average. A slightly higher percentage of Glasgow leavers went on to further education compared to the national figures (between 2% and 4%). Similarly, a higher percentage of Glasgow leavers entered training (between 4% and 6%).

MAIN FINDINGS

This section summarises the main findings to emerge from the research. The research demonstrates that there is a strong correlation between pupil attainment and the individual and aggregate measures of poverty and deprivation. However, in relation to pupil destinations the picture is more complex, while there is no correlation between any of the measures of poverty and deprivation and the overall positive leaver destinations a number of correlations emerge when HE destinations (strongly associated with attainment) are excluded from the analysis. Our analysis used the 'Pearson product-moment correlation coefficient' to measure the strength of linear dependence between two variables. Correlation is a statistical measurement of the relationship between two variables. Possible correlations

range from +1 to –1. A correlation of +1 indicates a perfect positive correlation, meaning that both variables move in the same direction together while a correlation of –1 indicates a perfect negative correlation, meaning that as one variable goes up, the other goes down. A zero correlation indicates that there is no relationship between the variables. Correlations that tend towards +1 or -1 generally indicate a stronger relationship between the two variables.

Attainment

On each of the five measures of attainment that we investigated and on all of the measures of poverty and deprivation we found a strong negative correlation. This means that schools with higher levels of poverty and deprivation are likely to have fewer pupils succeeding academically than schools with lower levels of poverty and deprivation.

Table 1 - Glasgow secondary schools - Attainment (2006-2009)

Attainment	Correlation					
	FME (29 schools)	SIMD (2009) (29 schools)	SINT (2009) (29 schools)	POVARa (29 schools)	POVARb (28 schools)	POVAR2 (28 schools)
S4 5+ Standard Grades	**-0.830**	**- 0.827**	**- 0.558**	**-0.848**	**-0.858**	**- 0.877**
S6 3+ Higher Grades	**-0.786**	**- 0.828**	**- 0.534**	**-0.836**	**-0.863**	**- 0.877**
S6 5+ Higher Grades	**-0.773**	**- 0.800**	**- 0.551**	**-0.812**	**-0.837**	**- 0.857**
S5 3+ Higher Grades	**-0.854**	**- 0.870**	**- 0.505**	**-0.886**	**-0.889**	**- 0.896**
S5 5+ Higher Grades	**-0.730**	**- 0.748**	-0.456*	**-0.761**	**-0.770**	**- 0.777**

Bold – significant at 1% level

* - significant at 5% level

Table key
> FME – Free Meal Entitlement, 3 year aggregate for 29 Glasgow secondary schools. Weighted score for each school.
> SIMD – Scottish Index of Multiple Deprivation. Proportion of pupils in schools living in 15% most deprived neighbourhoods (2009 report) Weighted score for each school.
> SINT – Staged Intervention. Proportion of pupils in 29 schools recorded as level 3 or 4 intervention. Weighted score for each school.

POVARa – Aggregate poverty and deprivation variable. FME plus SIMD in 29 secondary schools.

POVARb – as above but with one school (all girls) excluded (considered to be atypical).

POVAR2 – Poverty and deprivation variable 2. FME plus SIMD plus SINT in 28 secondary schools.

From Table 1 it can be seen that in all but one instance (SINT by S5 5+ Higher Grades), there is a significant negative correlation (at the 1% level) between all of the measures of poverty and deprivation and attainment. In the case of SINT and S5 5 + Higher Grades there is still a significant negative correlation (at the 5% level). While the data demonstrates a marked consistency in the relationship between poverty and deprivation and attainment it also shows that aggregating and refining the measures of poverty and deprivation (firstly aggregating FME and SIMD, then removing the atypical all girls school, and finally adding SINT) results in a stronger (negative) correlation between attainment and poverty and deprivation.

School leaver destinations

Table 2 summarises the data on pupil destinations and measures of poverty and deprivation.

Table 2 Glasgow Secondary schools - Leaver destinations (2006 – 2009)

Destinations	Correlation					
	FME (29 schools)	SIMD (2009) (29 schools)	SINT (2009) (29 schools)	POVARa (29 schools)	POVARb (28 schools)	POVAR2 (28 schools)
All positive destinations	- 0.309	- 0.236	- 0.345	- 0.267	- 0.242	- 0.275
Positive destinations (excl. HE)	**0.613**	**0.722**	0.298	**0.706**	**0.710**	**0.693**
Training destinations	**0.686**	**0.792**	0.345	**0.777**	**0.773**	**0.762**
Higher Education	**- 0.764**	**- 0.830**	**- 0.479**	**- 0.831**	**- 0.886**	**- 0.889**
Further Education	**0.533**	**0.430**	0.337	**0.474**	0.459*	0.472*
Employment	0.050	0.258	- 0.060	0.201	0.173	0.139

Bold – significant at 1% level

* - significant at 5% level

- *All positive destinations* – There is no correlation between any of the individual or aggregate measures of poverty and deprivation and 'all positive destinations'.
- *Higher education destinations* - There is a strong negative correlation between higher education destinations and all measures of poverty and deprivation. This is no surprise given that attainment data is strongly correlated with poverty and deprivation (see table 1).
- *Excluding Higher Education destinations* - excluding HE destinations from the analysis, and thus focusing on the destinations of those pupils not entering HE (the majority of school leavers in all Glasgow secondary schools), we find a positive correlation with levels of poverty and deprivation. Thus pupils in schools with higher levels of poverty and deprivation are more likely to find positive destinations (outwith HE) than pupils in schools with lower levels of poverty and deprivation.
- *Training destinations* – There is a positive correlation between training as a destination and measures of poverty and deprivation. Schools with higher poverty and deprivation scores are more likely than schools with lower levels of poverty and deprivation to have pupils going into training.
- *Further Education* – There is a positive correlation (albeit weaker than 'positive destinations' or 'training destinations') between further education as a destination and school poverty and deprivation. Again schools with higher levels of poverty and deprivation are likely to have greater proportions of their pupils going onto FE than schools with lower levels of poverty and deprivation.
- *Employment* - There is no correlation between any of the measures of poverty and deprivation and employment as a destination.

Correlations between school leaver data and indicators of poverty and deprivation suggest that levels of poverty and deprivation are substantially less important in relation to leaver destinations (excluding HE) than pupil attainment, which appears much more firmly linked to poverty and deprivation. While schools with lower levels of poverty and deprivation tend to have greater numbers of pupils going onto HE, and in that sense appear successful, the data also suggests that these schools may be less successful in assisting the majority of their pupils to secure positive destinations outwith HE. However, beyond their broad categorisation, we know little of the nature and/or 'success' of these other destinations. The data used in this research provides information on the initial positive school leaver destination, but there is no indication of the type of employment or training (full time/part time), nor of the sustained nature of the destination (long term/short term).

CONCLUSIONS

The research has constructed a tri-partite means of measuring poverty and deprivation that refines the measurement of poverty. This tri-partite model has been tested by associating it with attainment and positive school leaver destinations in Glasgow secondary schools. The research has established, using this method, that there is a major association between poverty and deprivation and attainment in Glasgow secondary schools for the years 2006-2009. These results are consistent with research conducted in England and Wales and the wider UK. Goodman et al. (2009), for example, draw from three major longitudinal studies to quantify the widely recognised fact that the cognitive and educational progress of children is closely related to the socio-economic position of the family.

The research has also established, that for the same period, a major association between poverty and deprivation and positive school leaver destination does not exist. Some schools serving poorer areas appear to be leading the way in terms of the proportion of pupils going onto positive destinations (When HE is excluded from the analysis – which is highly and positively associated with attainment). Some schools appear to be able to exercise a greater influence over pupil destinations more readily than attainment – they

appear to be able to make an intervention. These results are counter-intuitive and have very important implications for the city's secondary education strategy. There are equally important implications for other local authorities in Scotland and in the wider UK.

Further quantitative research, using this method, is necessary, however, to continue to monitor and demonstrate the effects of poverty and deprivation on attainment in examinations in Glasgow for subsequent years. A more longitudinal study would entail further collection and association of attainment and FME data and incorporate data on SINT beyond 2009. The SIMD data for 2009 would continue to be used until the next report was published. Further quantitative research is necessary to continue to monitor and track the continuing success of some schools in poorer areas to achieve such significant results in all aspects of positive school leaver destination. In an era of financial crisis and uncertainty and highly publicised cuts in Training and Employment opportunities and places in Further Education and Higher Education, there is considerable pressure to maintain such significant results.

Qualitative research is also necessary to (1) investigate the factors that enable some schools in areas of poverty and deprivation to record high levels of positive school leaver destination and (2) to establish the quality, sustainability and long-term benefits of the destinations – one of the professed aims of the Scottish Government (2011b). In relation to (1), the factors may include school factors (staff, programmes), external partners and pupil attributes. In relation to (2), it may be that pupils should be tracked from initial leaver destination over a period of time to establish if the destination provides long-term benefits, progress to another positive destination or leads to the young adults joining the cycle of low paid, insecure work and unemployment, identified by Green (2007). The ambition of the research team is to apply the aggregated indicators of poverty and deprivation to schools in other Scottish Councils and begin to construct a quantitative understanding of the effects of poverty and deprivation on secondary school attainment and positive school leaver destinations on a national scale, and to expand the qualitative research to other parts of Scotland and the wider UK. There is also potential to compare these findings with other national contexts.

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