

Levelling the playing field between rural schools and urban schools in a HE context: A Scottish case study

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At a time when interventions in widening access to, and participation in, higher education aim to maximise impact by engaging with schools located in the most deprived communities, school pupils in rural communities, and who experience deprivation, are, in practice, less likely to benefit. Using statistics available from the Scottish government, we show that state secondary schools located in Scottish remote or rural areas are not well served by the indicators capturing socio-economic, educational, or geographical deprivation widely used in the selection of schools for these outreach interventions. We construct a marker that identifies schools facing higher levels of deprivation than the Scottish average. We argue that (1) this marker is a step in the direction towards levelling the playing field between remote or rural schools and urban schools; and (2) it selects a wider range of schools for outreach interventions.

Keywords: higher education; outcome measures and indicators; rural–urban differences; secondary education

Introduction

At a time when interventions in widening access to, and participation in, higher education (HE) aim to maximise impact by engaging with schools located in the most deprived communities, school pupils in rural communities, and who experience deprivation, are, in practice, less likely to benefit (Donnelly & Gamsu, 2018, p. 28; Bridge Group, 2019). The main approach to contacting prospective students is through schools. In Scotland, state secondary schools in remote or rural areas are usually small, with a large geographical catchment area that rarely comprises the most deprived communities. In this article, we will document that a school located in an urban area is five times as likely to have over 20% of pupils living in the 20% most deprived areas in Scotland as a school in a remote area.

Until now, the schools' outreach projects funded by the Scottish Funding Council (SFC) on behalf of the Scottish government have only worked with schools which are below the national average of progression to HE (SFC, 2017). According to this measure, and as we will later report, a school located in an urban area is as likely to have

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3-year average progression rate to HE below the Scottish average as a school in a remote area. The Scottish government's clear ambition on access to HE—announced¹ in 2014—to have students from the 20% most deprived Scottish communities representing 20% of all entrants to HE by 2030, has driven the most recent projects and programmes (Scottish Government, 2014). This ambition was motivated by the over-representation of Scottish students from affluent backgrounds in Scottish universities (Croxford & Raffe, 2013; Raffe & Croxford, 2015).

According to Blackburn *et al.* (2016, p. 37), 18-year-olds from Scotland's 20% least deprived areas were almost four times as likely to enter university in 2016 as those from the 20% most deprived areas. It was almost six times this in 2006. Progress has been relatively slow (SFC, 2016; Commissioner for Fair Access, 2017). With this in mind, the government set this policy goal resting on the Scottish Index of Multiple Deprivation (SIMD). This index divides Scotland into zones, with each zone measuring the level of deprivation according to different factors, including crime, employment, education and access to basic public services. All zones are aggregated by quintile from the 20% most deprived zones (the so-called 'first SIMD quintile') to the 20% least deprived zones (the 'fifth SIMD quintile'). In the context of policymaking, SIMD is valuable. It identifies the communities located in the first SIMD quintile that may have more need for support. Its use may also allow us to measure the impact of government policies on crime, education, health, or transport. As other deprivation indices, the SIMD is known to be more able to describe the nature of deprivation in urban areas than in remote and rural areas (Skerratt *et al.*, 2014, p. 79; Fecht *et al.*, 2017). In the context of this policy goal, our inference is that state secondary schools located in remote and rural communities could be overlooked by interventions in widening access and participation because of their relatively low proportion of pupils living in the most 20% deprived areas. Concerns about the adverse effects of the SIMD measure were pointed out by Universities Scotland (2016, the representative body of Scotland's 19 HE institutions, once the government accepted all CoWA recommendations. The pressure to recruit more students from the most disadvantaged areas was nevertheless clear to each Scottish university. Indeed, Recommendation 32 explicitly set an intermediary target: 'By 2021, students from the 20% most deprived backgrounds should represent at least 10% of full-time first-degree entrants to every individual Scottish university' (CoWA, 2016a, p. 18).

SFC (2017) started to explore alternatives to the approach of just targeting some schools as it is now becoming evident that there are individuals in all schools who have socio-economic barriers obstructing their entry to HE, specifically to competitive courses (Croll *et al.*, 2016). If all outreach work should be carried out in all schools in order to support such individuals, on what common basis should this approach be implemented across the country?

Our article aims to respond to this question by proposing a school marker that identifies schools facing higher levels of deprivation than the Scottish average. This marker could be used by policymakers and relevant stakeholders, in addition to the first SIMD quintile measure. Although our school marker is Scottish-based, our simple approach should facilitate its replication elsewhere. In addition, we do not argue the definition of rurality. We make use of the current classification accepted by the relevant authorities. Our approach sits well in the current Scottish policy context of

tackling child poverty under the Child Poverty (Scotland) Act 2017. On the one hand, it could support ‘the adoption of the Place Principle to help overcome policy silos’ (Scottish Government, 2019a, p. 84). On the other hand, it could support the multi-dimensional aspect of measuring deprivation recommended by the inquiry into the impact of poverty on the attainment and achievement of school-aged children and young people (Scottish Parliament, 2018a).

The article is organised as follows. We first provide some background information on contextualised information and data and access to HE from a rural perspective. Using statistics available from the Scottish government, we define indicators from which we construct our school marker. Next, we argue why this marker is a step in the direction towards levelling the playing field between rural and urban schools. We then elaborate on how this marker selects a wider range of schools for outreach interventions.

Background information

Contextualised information and data

The use of contextualised information and data is common practice in the selection of applicants to interventions in widening access to, and participation in, HE (cf. for instance the criteria for an eligible application for a place to the Sutton Trust summer school²). It is seen as making sure that only eligible applicants are considered. Let us take two examples to illustrate how universities or non-governmental organisations (NGOs) can put into perspective information given by pupils domiciled in Scotland. The first example is the postcode of the personal address of the applicant. They link the applicant’s postcode to the SIMD quintile. The application is flagged if the young person has been living in one of the most deprived areas at the time of his or her schooling. The second example is the progression rate of the secondary school’s pupils to HE. The Scottish government supports regional collaborations between schools, colleges and universities to increase progression to HE in both colleges and universities. For instance, the SHEP programme³ specifically targets those schools which have less than 22% average progression to HE based on a 5-year average. Each HE institution monitors applications from pupils attending these schools.

Access to HE from a rural perspective

Drawing pupils from remote or rural communities to HE is a matter of importance in many countries or on a subject-specific basis. As they are often an under-represented group in HE, it can be seen as a matter of social justice. Since they are the prospective workforce, the raising of their educational attainment could be beneficial to their local remote or rural communities (and elsewhere).

The first argument is related to the notion of equality of opportunities. As stressed by Cuervo (2016, pp. 89–90), equality implies that ‘every student should have access to the same resources and opportunities, without ever examining the social background of the group or individual in need. (...) Equality of opportunity seeks, in its basic conceptualization, to eliminate the impact that different factors such as social

class, race or gender can have on a person's chance to succeed in different spheres of life'. Some already support the consideration of the rural factor in HE, in particular in Australia where there has been a commitment to regional equality for years (Bradley *et al.*, 2008; Halsey, 2018). Indeed, there exists an educational gap between rural and urban students (Ulubaşoğlu & Cardak, 2007; Echazarra & Radinger, 2019).

In the second case, it is hoped that those who make the decision to return to their local communities would be more entrepreneurial (Schafft, 2016). However, the medical and educational professions are accessible only with a university degree and it has proven difficult to recruit doctors and teachers in rural communities. Laven and Wilkinson (2003) offered a systematic review of international studies examining the relationship between rural backgrounds and rural doctors. They reported the consistent evidence that 'the likelihood of working in rural practice is approximately twice greater among doctors with a rural background' (p. 277).

Many factors can explain why young people living in remote and rural communities may not wish to pursue their education in HE (Echazarra & Radinger, 2019). For instance, job prospects in the local community may not require a university degree, and the fear of debt resulting from going to HE may deter quite a few. Local HE opportunities are usually rare and—when they are available—the degree portfolio and extracurricular activities suffer in comparison with those offered in large universities. For those who wish to continue their studies, moving away from home then becomes the only solution.⁴ Due to a variety of factors, including isolation, poor wages and lack of accommodation, few students return home after their studies. Among others, Spielhofer *et al.* (2011) and the Commission for Rural Communities (2012) examined the impact of transport and distance between education and training providers in some rural regions in the UK. Lasselle *et al.* (2015) proposed an exploratory analysis of the access to HE from Scottish rural communities in the Highlands and Islands. They emphasised that the educational, financial, personal and geographical obstacles faced by young people living in these communities challenge their access to HE.⁵ They highlighted two facts: (1) the 3-year average progression rate to HE of the schools located in these communities is lower than the Scottish national average; (2) a small minority of these schools are domiciled in the 20% most deprived areas in Scotland.

The most recent statistics on education attainment and progression in Scotland enlarge these analyses (Scottish Government, 2018). Education attainment and progression to HE are given for the population aged 16–64 by three geographical areas: 'Remote rural', 'Accessible rural' and 'Rest of Scotland'. At Scottish Higher or equivalent, there is no discrepancy between the three proportions of population holding that qualification (23–24%). The discrepancy occurs at Degree Level or equivalent.⁶ Only 24% of the population living in 'Remote rural' gained this qualification, against 31% and 30% for the other two categories. In terms of destination of school leavers from state secondary schools by geographical area, 38% of school leavers from 'Remote rural' and 'Rest of Scotland' progressed to HE, against 41% from 'Accessible rural'.

In this context, outreach interventions focusing on changing attitudes to HE could have a desirable impact⁷ in remote or rural communities, provided the methods of measuring and evaluating success are clear (e.g. degree completion or engagement

with their local community post-graduation). They could inform opportunities offered by a university degree and change the expectations⁸ of pupils and their parents of progression to HE. They have specific challenges because of their high operating costs and low number of potential beneficiaries (Bridge Group, 2019).

The Scottish government's ambition in terms of access to HE has put pressure on HE institutions to target some recruitment activities in zones belonging to the first SIMD quintile. These institutions were not the only ones at the centre of government attention, as the ambition became to 'ensure that every child has the same opportunity to succeed, with a particular focus on closing the poverty-related attainment gap' (Scottish Government, 2019a, p. 18). Since the launch of the Scottish Attainment Challenge in 2015, significant funding and resources have been directed to schools in the most deprived areas according to two indicators of deprivation, namely the first SIMD quintile and the free school meals (FSM) registration, a well-known proxy for low household income (Mowat, 2018). Some fear that these fundings and resources are not reaching pockets of poverty due to the urban bias of the SIMD measure (Scottish Parliament, 2018a, b). Unfortunately, very few SIMD1 zones are in Scottish remote and rural communities. For instance, no areas in the Shetland and Orkney Islands and the Western Isles are among the 20% most deprived areas (Commissioner for Fair Access, 2019). Scottish Parliament (2018a) recommended exploring the extent to which areas (and individuals) are affected by the use of these two indicators of deprivation. If the first SIMD quintile were the only acceptable measure to assess deprivation for the selection of schools for outreach interventions, we infer that learners from remote or rural communities could also be overlooked by HE institutions.

This article follows the line of inquiry suggested by the Scottish parliament. We question the use of a unique indicator capturing deprivation because of its potential damaging effect on remote and rural schools. We suggest that the selection of schools, or pupils' circumstances and attainment, should start to be assessed in the light of a school marker aggregating various statistics measuring deprivation.

We also follow the line of inquiry proposed by CoWA (2016a). Equality in access to HE needs a holistic approach. Isolating it from educational attainment gap, poverty, or place will not solve the problem. It seems that the education sector is moving away from the policy silos that may have prevailed and starting to adopt a more Place Principle approach (cf. Mowat, 2018; Scottish Government, 2019a).

Our article develops a simple methodology that could eliminate the bias towards urban schools in the search for pupils from the most deprived areas, when the agreed deprivation measure is challenging for rural areas. We intersect a location indicator with four measures well known to practitioners and policymakers. To the two above measures of child deprivation, namely the first SIMD quintile and the FSM registration, we add measures mentioned in outreach interventions or outcome agreements between SFC and HE institutions: the school's progression rate to HE and the second SIMD quintile.⁹ Our approach is a step forward of the current practice developed by practitioners in the selection of applicants to interventions. Instead of using multiple measures of deprivation alongside one another, we aggregate them. Our objective is not to make the case for specific allocated places for remote or rural students on outreach interventions. We simply highlight the possible imbalance in favour of urban schools (and therefore pupils in these schools) when limited criteria related

to deprivation are taken into account in the selection of schools, or the eligibility of young people who apply for outreach interventions. We propose a way to move forward before a more sophisticated approach is developed (Scottish Parliament, 2018a; Commissioner for Fair Access, 2019).

Data and indicators

Our dataset comprises 350 Scottish state secondary schools. It is built upon the collection of Scottish state school statistics available from the Scottish government in autumn 2016.¹⁰ These statistics identify 360 Scottish state secondary schools. Following closer inspection, we exclude 10 schools. These are five junior high schools¹¹ in the Shetland Islands and three in the Orkney Islands, one school recently created from the merger of two and the remaining one due to a lack of relevant data for our analysis.

From this collection, we consider five sets of school statistics. These characterise the location of the school and the school's level of deprivation according to different dimensions. They allow us to create comprehensible school-based indicators relevant to stakeholders, in particular policymakers and university officers.

Indicators from well-known statistics

Location indicator. To decide whether a school is located in a remote or rural area, we make use of the Scottish government's sixfold classification, ranging from the 'Remote rural area' category to the 'Large urban area' category.¹² The size of the population the school is in determines the location category of the school. In this article, all Scottish state secondary schools located in either a 'Remote small town' or a 'Remote rural area' are labelled 'Remote'. All located in an 'Accessible rural area' are branded 'Rural'.¹³ All located in either a 'Large urban area', an 'Other urban area', or an 'Accessible small town' are classed as 'Urban'.

Our three categories and the three geographical areas mentioned above (i.e. 'Remote rural', 'Accessible rural', 'Rest of Scotland') differ in one aspect. 'Rest of Scotland' includes 'Remote rural town'. We prefer to consider the latter in the 'Remote' category of our 'Location' indicator for a simple reason. Our indicator is a school-based indicator whose desirable feature is to represent its pupils. Due to large catchment areas, the rurality of a pupil's home may not reflect the rurality of the location of their school. The catchment area of a state secondary school located in a remote rural town is very likely to be large. A significant proportion of its pupils are unlikely to live in the proximity of the school, and likely to live in 'Remote rural' areas. OECD (2007, p. 27) briefly examined the impact of the population spread on the availability of secondary schools. They reported that 'at primary school age, 85% of pupils have a local authority primary schools within 3 miles of their home, but at secondary school level this drops to just over 40%'.

Relative-deprivation indicators. Several governmental statistics capture educational, geographical, or socio-economic deprivation at school level in Scotland (e.g. [Dataset 1]). We select four of them: the proportion of pupils attending the school and living

in an area belonging to the first SIMD quintile in 2014–15; the proportion of pupils attending the school and living in an area belonging to the second SIMD quintile in 2014–15; the proportion of pupils attending the school and registered for FSM in 2015–16; and the 3-year average progression rate to HE of the school. We compute the last by taking the average of the 2011–12, 2012–13 and 2013–14 rates. We construct four indicators measuring a relatively high level of a type of deprivation from these four statistics.

Our first school-based indicator is geographical and is linked to the first SIMD quintile. It indicates whether the proportion of pupils attending the school and living in an area belonging to the first SIMD quintile in 2014–15 is above 20%. We denote it by ‘above-average SIMD1’. The rationale for this benchmark is threefold. Firstly, the publicly available data indicate the proportion according to a five percentage point (pp) band (0, <5%; 5, <10%, etc.). Secondly, the Scottish government informed us that the proportion of Scottish pupils attending Scottish state secondary schools from the first SIMD quintile is 20.3%. ‘20%’ is the closest percentage to 20.3% in the 5 pp band. Finally, by taking into account the proportion of pupils living in the 20% areas of Scotland, we keep information the Scottish government requests and make it meaningful at the school level.

Our second indicator is also geographical and is similar to our first indicator. It indicates whether the proportion of pupils attending the school and living in an area belonging to the second SIMD quintile in 2014–15 is above 20%. We denote it by ‘above-average SIMD2’. The rationale of this benchmark is similar to the one elaborated above. Note that the official percentage in this case is 19.0%, to which ‘20%’ is the closest percentage in the 5 pp band. If the percentage value of the school statistics meets the criterion of the ‘above-average SIMD1’ indicator, or that of the ‘above-average SIMD2’ indicator, we say that the school faces a relatively high level of geographical deprivation.

Our third indicator is related to income inequality and refers to FSM. The eligibility for FSM in a Scottish secondary school¹⁴ is based on the level of household income, including benefit receipt. This indicator indicates whether the proportion of secondary school pupils registered¹⁵ for FSM in the school in 2015–16 was above the national average of 14.2%. We denote it by ‘above-average FSM’. If the percentage value of the school statistics meets the criterion of the ‘above-average FSM’ indicator, we say that the school experiences a relatively high level of socio-economic deprivation.

Our fourth and final indicator is related to educational inequality. It indicates whether the 3-year average progression rate of the school to HE (2011–12, 2012–13, 2013–14) is below the national average of 38.1%. We denote it by ‘below-average %PgHE’. This benchmark is similar to the reference point defined by SFC and used to establish a list of priority schools that should be targeted by universities and regional programmes in their outreach and widening access activities.¹⁶ If the percentage value of the school statistics meets the criterion of the ‘below-average %PgHE’ indicator, we say that the school experiences a relatively high level of educational deprivation.

Our four indicators are constructed in a similar way and facilitate the comparison between state secondary schools. Each indicator is built upon statistics available from the Scottish government and each is benchmarked by the Scottish national average—

a popular benchmark in policymaking and easily interpretable to all. Each also measures a relatively high level of a type of deprivation and the small number of indicators is an advantage. Each taken individually can signal to a university school liaison officer the necessity to engage more actively with a school in outreach interventions: a higher than average proportion of the school's pupils living in the first or second SIMD quintiles; a higher than average proportion of the school's pupils registered for FSM; or a lower than average progression rate to HE. Their combination can signal the possibility of a bigger impact of the engagement. This combination of indicators is also similar to the one currently chosen by HE institutions in their selection of schools for participation in interventions in widening access and participation (cf. Bridge Group, 2019, p. 39). Finally, it also fits the lines of inquiry made by CoWA and the Scottish parliament.

The four indicators can also facilitate the comparison between the three subgroups determined by our 'Location' indicator (i.e. 'Remote' schools, 'Rural' schools, 'Urban' schools). For instance, if the proportion of 'Remote' schools in the 'above-average SIMD1' indicator is smaller than that of all schools, we can say that the subgroup 'Remote' schools is under-represented in this indicator.

Classification of the schools

Table 1 presents the classification of our 350 Scottish state secondary schools according to our indicators defining rurality or measuring a relatively high level of a type of deprivation. There are 63 'Remote' schools, 21 'Rural' schools and 266 'Urban' schools representing a distribution of 18%, 6% and 76% among our 350 schools.

There are 137 schools out of our 350 schools (39%) whose proportion of pupils living in the first SIMD quintile is above 20%. This percentage increases to 47% among the 'Urban' schools. This represents almost one in two 'Urban' schools. The percentage decreases to 29% for the 'Rural' schools. It declines even further to 10% for the 'Remote' schools. In other words, an 'Urban' school is five times as likely to have over 20% of pupils living in the 20% most deprived areas in Scotland as a 'Remote' school. It is twice as likely to be over this threshold as a 'Rural' school.

There are 161 schools out of our 350 schools (46%) whose proportion of pupils living in the second SIMD quintile is above 20%. The percentage rises to 51% among

Table 1. Distribution of schools per relative-deprivation indicator

Location Indicator	'Remote' 63 schools	'Rural' 21 schools	'Urban' 266 schools	Total 350 schools
Above-average SIMD1	6* (10%)	6 (29%)	125 (47%)	137 (39%)
Above-average SIMD2	18 (29%)	7 (33%)	136 (51%)	161 (46%)
Above-average FSM	12 (19%)	7 (33%)	131 (49%)	150 (43%)
Below-average %PgHE	37 (59%)	10 (48%)	151 (57%)	198 (57%)

Notes: (*x%*) italic indicates an under-representation of 'Remote' or 'Rural' schools in the relative-deprivation indicator.

*Six schools in the 'Remote' category of the 'Location' indicator, a total of 10% in this category, satisfy the 'above-average SIMD1' indicator.

the 'Urban' schools. It drops to 33% among the 'Rural' schools and 29% among the 'Remote' schools. In other words, an 'Urban' school is almost twice as likely to have over 20% of pupils living in the second SIMD quintile as a 'Remote' or 'Rural' school.

The under-representation of 'Remote' and 'Rural' schools in these two indicators is not surprising in the light of our earlier comments regarding the lack of adequacy of SIMD to capture rural deprivation.

There are 150 out of our 350 schools (43%) where the percentage of pupils registered for FSM is above the Scottish national average. Among the 'Urban' schools, the percentage rises to 49%. Among the 'Rural' schools, the percentage decreases to 33%. It declines even further to 19% for the 'Remote' schools. In other words, an 'Urban' school is more than twice as likely to have a proportion of pupils above the national average of 14.2% registered for FSM as a 'Remote' school. It is less than twice as likely to be over this threshold as a 'Rural' school. The under-representation of 'Remote' and 'Rural' schools in this indicator could be interpreted along the lines that people living in these areas are less likely to take up benefits for fear of stigma. This stigma is not specific to rural areas, and can explain some government actions (cf. Holford, 2012; Scottish Parliament, 2018a), but it could be considered greater in small communities (Scottish Parliament, 2018a; Bridge Group, 2019).

There are 197 out of our 350 schools (56%) whose 3-year average progression rate to HE is below the national average. There is no real discrepancy between the 'Remote' schools and the 'Urban' schools (i.e. 59% vs 57%). There exists a less than 10 pp difference between the 'Rural' schools and the 'Urban' schools (i.e. 48% vs 57%). This is not a surprise. It is widely acknowledged that many Scottish schools have a low progression rate to HE and many of them are located in (deprived) urban areas. These schools are regularly featured in the various lists of schools compiled by SFC or relevant organisations and eligible for interventions in widening access and participation.

Our taxonomy summarised in Table 1 allows us to make three remarks. Firstly, when each relative-deprivation indicator is taken independently, none shows parity across our 'Location' categories. We do not have similar percentages for the 'Remote' schools, the 'Rural' schools and the 'Urban' schools in each of our four relative-deprivation indicators. 'Remote' schools are under-represented in three out of four indicators (cf. the distribution of grey boxes in Table 1). 'Rural' schools are under-represented whatever the indicator. However, a closer inspection of the statistics reveals that one 'Rural' school is just above the national average of the 3-year average progression rate to HE and another one is just below.¹⁷ As there are only 21 schools in the 'Rural' category, a small change in the number of schools satisfying the indicator means a large pp change. One more school in the 'below-average %PgHE' indicator is equivalent to a 4 pp difference. This leads us to be very cautious in the interpretation of this under-representation. Noting that in the other relative-deprivation indicators, 'Remote' and 'Rural' schools have similar features, we merge the 'Remote' and 'Rural' categories in the remaining part of the article. In the case of the 'below-average %PgHE' indicator, the proportion of 'Urban' schools and that of 'Remote and Rural' schools becomes similar (i.e. 57% vs 56%).¹⁸ As a result, this may be the most satisfactory indicator in levelling the playing field between 'Remote

and Rural' schools and 'Urban' schools. Unfortunately, it does not respond to the equality agenda of the current Scottish government. It has no reference to the 20% most deprived areas.

Secondly, the outcomes of the 'above-average SIMD1' and 'above-average FSM' indicators could be added to the evidence collected in Scottish Parliament (2018b). Concerns raised by the inquiry were reasonable. If deprivation is only measured in terms of FSM registration and the first SIMD quintile, it is very unlikely that funds and resources will target pockets of poverty in remote communities.

Finally, the outcome of the 'above-average SIMD1' indicator is particularly concerning. It flags two state secondary schools in five, a significant minority. However, these are more likely to be 'Urban schools' than 'Remote' or 'Rural' schools. This may be the school-level indicator which most closely meets the equality agenda, but it is far from levelling the playing field. Our inference that state secondary schools located in remote and rural communities could be overlooked by interventions in widening access and participation because of their relatively low proportion of pupils living in the most 20% deprived areas is sensible. In the light of Scottish Government (2017b) and the government agenda on raising attainment, focusing on urban schools can be justified as so many have their percentage above the national average. However, it is regrettable that participation in HE for pupils living in remote and rural communities is not fostered. As mentioned earlier, pupils' attainment is high, but outcomes at post-secondary education level are not as high as one would expect based on prior attainment. In addition, pupils experiencing poverty in some rural and remote schools could be doubly affected. On the one hand, they are overlooked by the government funding of the School Attainment Challenge. On the other hand, they could be overlooked by the equality agenda in terms of access to HE. An alternative school-level marker combining the indicators should lead to a more equal representation between schools and eliminate the bias towards 'Urban' schools.

An alternative school marker and its application

In this section, we construct a school marker built upon all our indicators. It flags any school experiencing at least one relatively high level of deprivation. We compile the list of 'Remote and Rural' schools and that of 'Urban' schools meeting the requirements of this marker. We compare both lists to those satisfying the 'above-average SIMD1' indicator. The latter is our benchmark as it is inspired by the current policy of the Scottish government focusing on young people domiciled in the 20% most deprived areas.

Construction of an alternative school marker

Our alternative school marker denoted by 'Basket'¹⁹ is built upon the indicators presented above. It meets two criteria.²⁰

A school meets the first criterion when either²¹ its progression rate to HE is lower than the national average or its percentage of pupils registered for FSM is higher than the national average. This first criterion captures an educational

under-representation in HE and/or a socio-economic inequality. Its choice is straightforward. Both conditions refer to a national average benchmark. They are derived from two statistics well known to stakeholders and heavily scrutinised by policymakers.

A school meets the second criterion when it satisfies either the ‘above-average SIMD1’ indicator or the ‘above-average SIMD2’ indicator, or the ‘Remote’ and ‘Rural’ categories of our ‘Location’ indicator. The choice of the first indicator is justified by the importance of the concept of the first SIMD quintile in policymaking. The concept of the 40% most deprived areas,²² also monitored in policymaking, leads us to add the second indicator. The inclusion of the ‘Remote’ and ‘Rural’ categories is guided by the under-representation of ‘Remote’ or ‘Rural’ schools in the ‘above-average SIMD1’ indicator and the ‘above-average SIMD2’ indicators pointed out earlier. Table 2 summarises the distribution of the schools for the ‘above-average SIMD1’ indicator and the ‘Basket’.

The ‘Basket’ contains 38 ‘Remote’ schools, 12 ‘Rural’ schools and 159 ‘Urban’ schools. Recall that the number of schools in each of these categories for the ‘above-average SIMD1’ indicator was respectively 6, 6 and 125 according to Table 1. We are able to identify a larger number of schools that could be targeted for outreach interventions. The ‘Basket’ offers parity between ‘Remote and Rural’ and ‘Urban’ schools. Indeed, it contains 60% of all ‘Remote and Rural’ schools and 60% of all ‘Urban’ schools, instead of 14% and 47%. In our alternative school marker, ‘Remote’ or ‘Rural’ schools are as likely to be part of this school marker as ‘Urban’ schools. In other words, the playing field between ‘Remote and Rural’ schools and ‘Urban’ schools is levelled. For this reason, we prefer this school marker to the one-dimensional ‘above-average SIMD1’ indicator. In a sense, our work sits within the concept of ‘equality of opportunities’ described above. Our methodology has two features. It rests on the school rather than the individual. It takes into account multiple dimensions of deprivation. The resulting marker fulfils the ambition to eliminate the undesirable impact of the SIMD measure. It is a transitory step towards a satisfying capture of deprivation, regardless of location (Scottish Parliament, 2018a; Scottish Government, 2019b). As policy objectives and measures to report progress evolve over the years, our marker could include in due course the experimental measure combining low income and material deprivation currently being developed (Scottish Government, 2017b, 2019b). As of today, this measure is only publicly available at the level of the local authority.

Table 2. Distribution of schools per school marker

Location	‘Remote and Rural’	‘Urban’	All
School marker	84 schools	266 schools	350 schools
‘Above-average SIMD1’ indicator	12 (14%)	125 (47%)	137 (39%)
‘Basket’	50* (60%)	159 (60%)	209 (60%)

Notes: (x%) italic indicates an under-representation of ‘Remote and Rural’ schools in the school marker.

*There are 38 ‘Remote’ schools and 12 ‘Rural’ schools. They represent 60% of all ‘Remote’ schools and 57% of all ‘Rural’ schools.

Limitations of our approach

There are of course some limitations to our approach. Firstly, it rests on the use of the national average for the four chosen school statistics related to deprivation. This unique cut-off threshold is arguable. It does not distinguish the level of the deprivation. A school whose proportion of pupils living in the first SIMD quintile is 25% is comparable to a school whose proportion is 55%. However, we have no doubt that the scale of policy interventions aimed at targeting deprivation will be of a different magnitude for each of them. Secondly, most of our selected statistics resonate in the current Scottish debate in terms of equality of access to HE, attainment improvement, and enhancement of aspirations and expectations towards HE. The choice of only four statistics is arguable too. It does not reflect all the complex aspects of deprivation. Among the other statistics that could be taken into account is the proportion of pupils from minority ethnic origins. Our preference for pupils registered for FSM is open for discussion, and concerns raised in Gorard (2012), CoWA (2016b), or Illie *et al.* (2017) apply in our context. For instance, some pupils may not benefit from FSM as they or their family may prefer not to claim them for dietary or cultural reasons, or fear of stigma. Finally, in the context of limited resources, highlighting a higher number of schools could lead to the possibility of lower resources per school to outreach interventions.

Our response to these limitations is as follows. The strength of our approach is its simplicity and consistency, whatever the selected indicator related to deprivation. Firstly, the use of the national average as a benchmark is not exceptional in educational policy-related matters. As already noted, the point of reference for some SFC flagship programmes for access is the national average of progression rates to HE. In its annual publication on schools, pupils and their characteristics in England and Wales, the Department for Education (2018, p. 7) compares FSM eligibility between subgroups of schools with the average rate. Secondly, the simplicity of our approach recalls that adopted by Gorard (2012). His straightforward assessment of FSM as an indicator of low economic status rests on the comparison of percentages. Thirdly, all our indicators are computed from school statistics available from the Scottish government. They are well known to stakeholders. They do not stigmatise any pupils as they rest on the school rather than the individual. Finally, our approach should be examined in the context of a policy objective. Recall that SIMD has limitations, but it is 'currently the most suitable measure of disadvantage for the purposes of measuring progress and setting targets' (CoWA, 2016b, p. 6). Our modest approach has removed the adverse effect of the SIMD1 measure for schools located in remote or rural areas. It is in the spirit of CoWA (2016b) and follows the recommendations of Scottish Parliament (2018a). We consider a basket of indicators built upon statistics covering broad aspects of deprivation, annually released by the Scottish government. This facilitates regular update of the list of schools gathered in the 'Basket'. In addition, the use of the 'Basket' allows action to be taken quickly to remedy the current imbalance between schools while a satisfactory solution is found. Our approach should not lead to spreading (limited) resources across all schools gathered in the 'Basket'. We identify schools that could be targeted if a multi-dimensional approach is taken, as already suggested by SFC (2017). Our larger pool of schools could help

some university school officers to choose relevant schools, depending on the specificities of the outreach activities. It is in this sense that we believe our approach is compatible with the Place Principle that helps to overcome policy silos. HE institutions and secondary schools interact with one another to foster expectations of HE via outreach interventions on the impulse of a governmental ambition.

Application

The list of schools gathered in the ‘Basket’ could help schools outreach project coordinators at HE institutions to select schools in which their work could have the most impact. Universities are increasingly encouraged to work with schools to improve attainment and enhance aspirations to or expectations for HE. At present, the outreach projects are funded by NGOs, the government through SFC, or the institutions themselves. The NGOs often prefer to work with their familiar targeted groups. Most SFC projects involve a list of schools (e.g. the list of SHEP schools). Many institutions tend to work with schools which are below the national average of progression to HE, with particular attention on SHEP schools in their local area. The proximity reduces transport costs and enhances community work. However, as we noted earlier, there is a common feeling that outreach work should be carried out in all schools in order to support pupils in any school who have socio-economic barriers obstructing their entry to HE. This makes the list of schools meeting the requirements of our alternative school marker highly relevant. The ‘Basket’ does not favour ‘Urban’ schools and takes into account the progression rate to HE, FSM registration and the two lowest SIMD quintiles. Any school in the ‘Basket’ could inform schools outreach project coordinators as to where their work could have the most impact.

Let us illustrate our reasoning by taking the list of surrounding local authorities²³ established by CoWA (2016b, p. 12) for the University of Aberdeen and Robert Gordon University. Both universities are located in Aberdeen and are the only ones in the north east of Scotland. Their lists are identical: Aberdeen City, Aberdeenshire, Angus and Moray. 45 state secondary schools, including 13 ‘Remote and Rural’ schools are located in these four local authorities. Table 3²⁴ summarises the distribution of these schools for the ‘above-average SIMD1’ indicator and the ‘Basket’.

If both universities wish to work with schools whose proportion of pupils living in areas belonging to the first SIMD quintile is above 20%, they will focus their activities on a very low number of schools, all located in urban areas. Indeed, only four schools satisfy the indicator and none of them is located in a remote or rural area. In other words, no outreach interventions would involve pupils attending a ‘Remote and

Table 3. Number of schools in the four surrounding local authorities for the University of Aberdeen and Robert Gordon University per school marker

Location School marker	‘Remote and Rural’ 13 schools	‘Urban’ 32 schools	All 45 schools
‘Above-average SIMD1’ indicator	0	4	4
‘Basket’	8	10	18

Rural' school. The use of our alternative school marker addresses this imbalance. The 'Basket' contains 18 schools, including these eight 'Remote and Rural' schools. We would advise the outreach officers of both universities to prioritise their work with these 18. They would maximise their impact in terms of reaching out to pupils who benefit from FSM, live in deprived communities and attend a school whose progression rate to HE is below the national average. They would also follow the guidance of CoWA and the Scottish parliament and use, in addition to SIMD, 'a measure(s) which better reflect the link between deprivation and access in the local population' (CoWA, 2016b, p. 10).

Conclusion

Our article highlights the imbalance in favour of schools in urban areas (and therefore pupils in these schools) when limited criteria related to deprivation are taken into account. It questions whether a common basis that could maximise the impact of outreach interventions could be agreed by many. To respond to this question, we constructed a school marker combining some well-known statistics capturing information about levels of deprivation experienced in Scottish state secondary schools. This marker ensures parity between schools in remote or rural areas and schools in urban areas in the search for potential applicants to outreach interventions. This marker should be agreeable to all. It is easily adaptable to the concept of measures of success defined by the government. It does not stigmatise schools or pupils. It does not rest on a single dimension. Its simple construction could be replicated without difficulty in other parts of the UK or other countries.

The use of this marker could go beyond this process of selection of schools for interventions in widening access and participation. Alongside the use of the SIMD1 measure, it could facilitate the monitoring of the universities towards the equality target set by the Scottish government. It could also enhance the understanding of the transition of young people from secondary schools to university. One could compare the progression of students coming from 'Remote and Rural' schools and that of those from 'Urban' schools. In the longer term, one could also assess whether it has addressed the under-representation of rural students in Scottish HE. Finally, the marker could be enriched in several directions. Different cut-off thresholds for each indicator could be introduced. Additional factors such as care experience, ethnicity, or gender could be taken into account. The categories 'Remote', 'Rural' and 'Urban' of our 'Location' indicator could be refined by considering the school's catchment area. Specifically, we could compute an 'above-average remote' category (i.e. whether the proportion of pupils in the school living in a remote area is above the national average). This refined indicator would distinguish schools as predominantly remote, predominantly rural and predominantly urban. All our indicators would then capture the multiple deprivations faced by the pupils enrolled in a school.

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Guidelines

The authors used secondary data. No application to the institutional ethical committee was required.

Conflict of Interest

The authors declare no conflict of interest.

Data Availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request. The data relating to Location and SIMD1 are publicly available from [Dataset 1]; and to FSM from [Dataset 2]. The data relating to % PgHE and SIMD2 were obtained via a request from the now defunct Scottish Government Education Directorate.

NOTES

¹ Within weeks of this announcement, the Scottish government appointed a Commission on Widening Access (CoWA). The Commission gathered all the necessary steps to achieve the government's ambition in a final report, proposing 34 recommendations (CoWA, 2016a).

² More information is available at: <https://summerschools.suttontrust.com/eligibility/>.

³ More information is available at: www.ehea.info/media.ehea.info/file/Berlin_July_2011/05/1/Scotland_-_SHEP_604051.pdf.

⁴ Petrin *et al.* (2014) highlighted the possible role of schools and educators in the migration process of high achievers (the so-called rural brain drain) in the USA. However, they showed that if some educators push their high achievers to migrate out of their communities, it may not imply that they will not come back.

⁵ Pavis *et al.* (2000) already highlighted that (1) HE could be a pull factor explaining why young Scots migrate from their rural communities to urban areas and (2) graduates were likely to take employment in non-rural areas because of limited local opportunities.

⁶ Echazarra and Radinger (2019, p. 17) reported similar characteristics at the UK level.

⁷ Harrison and McCaig (2017) and Harrison and Waller (2017) challenged the concept of 'what works' approaches in educational research and the definition of 'effectiveness' or 'success' of outreach interventions.

⁸ Harrison and Waller (2018) revisited the role of expectations by the use of possible selves. In a rural context, where the local labour market may offer few graduate opportunities, it could be difficult for young people to distinguish career paths from university degrees or to have the confidence in their own ability to make a successful transition to HE (Lasselle *et al.*, 2015).

⁹ Outreach interventions often refer to the four measures. The most recent guidance on outcome agreement between each Scottish university and the SFC refers to student intake from areas belonging to the first and second quintiles of SIMD as measures of progress (SFC, 2019).

¹⁰ We downloaded the data from the Scottish government's website in autumn 2016, supplemented with additional data sourced directly from the Scottish Government Learning Directorate (formerly known as Scottish Government Education Directorate) (cf. Data Availability section).

¹¹ Junior high schools in these islands do not cater for pupils in the last 2 years of secondary education.

¹² More information is available at: www2.gov.scot/Topics/Statistics/About/Methodology/UrbanRuralClassification.

¹³ Our 'Rural' school category is not identical to the list of 'Rural Schools' published by the Scottish Government (2017a). This list includes primary schools and is constructed from the link between the school location and the eightfold classification. This classification is too refined in our framework.

- ¹⁴ More information about the eligibility for FSM is available at: www.mygov.scot/school-meals/. Note that some are eligible for FSM, register for them, but do not take them.
- ¹⁵ We are not aware that there exists individual data on eligibility for FSM in Scotland.
- ¹⁶ Cf. SFC (2017, p. 6) and SFC policy papers attached to the School Engagement Framework, available online at: www.sfc.ac.uk/access-inclusion/access-priorities/low-progression-schools/low-progression-schools.aspx.
- ¹⁷ There are five 'Rural' schools within ± 1.5 pp of the national average (three schools are just above the national average, two just below).
- ¹⁸ The respective percentages for the above-average SIMD1, SIMD2 and FSM indicators are 12%, 30% and 23%.
- ¹⁹ This refers to the idea of a basket of measures introduced by CoWA (2016b).
- ²⁰ The distribution of schools in each criterion is available in Appendix A.
- ²¹ The 'either/or' rule allows us to integrate our 350th school mentioned previously (e.g. the school whose % PgHE is not known, but whose FSM is known). However, it does not allow us to include the 351st school whose both criteria are unknown.
- ²² The first two quintiles of SIMD (i.e. the 40% most deprived areas in Scotland).
- ²³ CoWA (2016b, p. 9) closely examined the local context of four Scottish universities to determine whether they could achieve 10% of entrants from the 20% most deprived areas by 2021. They analysed the recent figures of full-time first-degree entrants from the 20% most deprived areas and school leavers from surrounding local authorities.
- ²⁴ Similar tables for the University of Edinburgh and the University of St Andrews are available in Appendix B.

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Appendix A

Table A1. Distribution of schools per criterion in the ‘Basket’

Location Criterion	‘Remote and Rural’ 84 schools	‘Urban’ 266 schools	All 350 schools
Below-average of %PgHE or above-average of FSM	50* (60%)	175 (66%)	225 (64%)
Second criterion	84† (100%)	185† (70%)	269 (77%)

*There are 38 ‘Remote’ schools and 12 ‘Rural’ schools. They represent 60% of all ‘Remote’ schools and 57% of all ‘Rural’ schools.

†All ‘Remote’ and ‘Rural’ schools meet this criterion. Only the ‘Urban’ schools satisfying the ‘above-average SIMD1’ indicator or the ‘above-average SIMD2’ indicator meet this criterion.

Appendix B

The list of surrounding local authorities established by CoWA (2016b) for the University of Edinburgh is composed of Clackmannanshire, East Lothian, Edinburgh (City of), Falkirk, Fife, Midlothian, North Lanarkshire and West Lothian. 98 state secondary schools, including six ‘Remote and Rural’ schools, are located in these

Table B1. Number of schools in the eight surrounding local authorities for the University of Edinburgh per school marker

Location School marker	‘Remote and Rural’ 6 schools	‘Urban’ 92 schools	All 98 schools
‘Above-average SIMD1’ indicator	2	40	42
‘Basket’	3	57	60

Table B2. Number of schools in the seven surrounding local authorities for the University of St Andrews per school marker

Location School marker	‘Remote and Rural’ 8 schools	‘Urban’ 75 schools	All 83 schools
‘Above-average SIMD1’ indicator	2	32	34
‘Basket’	6	46	52

eight local authorities. Table B1 summarises the distribution of these schools for the 'above-average SIMD1' indicator and the 'Basket'.

The list of surrounding local authorities established by CoWA (2016b) for the University of St Andrews comprises Clackmannanshire, Dundee City, Edinburgh (City of), Falkirk, Fife, Perth & Kinross and West Lothian. 83 state secondary schools, including eight 'Remote and Rural' schools are located in these seven local authorities. Table B2 summarises the distribution of these schools for the 'above-average SIMD1' indicator and the 'Basket'.