

UCL Innovative Widening Participation Group Recommendations to OFS – How to accurately target and measure participation among disadvantaged students.

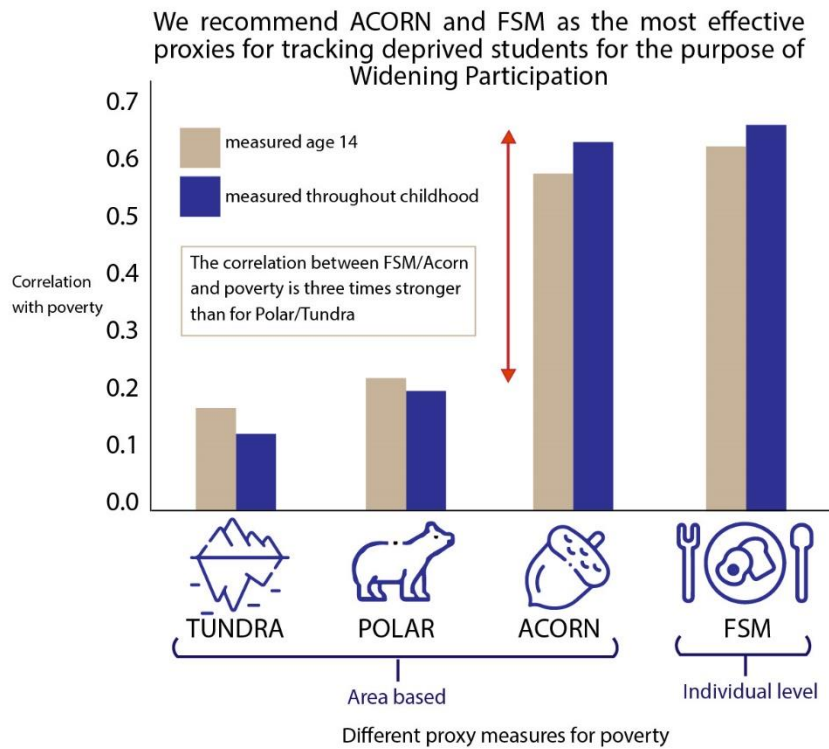
Executive Summary

The Director for Fair Access and Participation at the Office for Students (OfS) has asked UCL to set an additional target for socioeconomic disadvantage in our Access and Participation Plan (APP). Participation of Local Areas (POLAR) is a required measure by OfS. A number of pieces of analysis, including our own, have shown that while this metric captures underrepresentation in higher education, it is a weak measure of socioeconomic disadvantage.

Based on existing research and two new pieces of analysis using both UCL UK undergraduate records, and longitudinal cohort data from the Millennium Cohort Study (MCS), we find that:

1. The best measure of socioeconomic disadvantage is individual-level data on eligibility for **Free School Meals (FSM) over the past 6 years** or 'FSM6'. This measure is highly correlated with measures of poverty, and has the additional advantage of being transparent and well-known.
2. In the absence of access to timely reliable administrative FSM6 data, the best alternative that is **currently available** is **ACORN** – a geodemographic classification system developed by CACI Limited. This postcode level indicator is the best area-level measure for predicting persistent poverty, and students in receipt of a bursary. However, limitations include transparency, cost and technical issues.
3. The current area-based measures **POLAR** (which measures the proportion of young people who participate in higher education in different areas) **and TUNDRA** (which measures participation for state-funded mainstream school pupils in different areas), are weak proxies of persistent poverty and students in receipt of a bursary at the national level.

Correlations between permanent poverty and various metrics of disadvantage



Accordingly, we recommend that:

- i. the Department for Education (DfE) facilitates timely access to FSM6 data from administrative records so that universities can report on this individual-level indicator
- ii. The OfS uses its leverage to ensure this access to FSM6 is facilitated, to support effective monitoring and accountability in widening participation practice
- iii. The OfS moves to application of FSM6 as a key – we would suggest primary – WP measure.
- iv. While the above are being achieved, UCL should use ACORN as a best interim indicator of its relative progress in inclusive access for socio-economically disadvantaged students.

UCL Innovative Widening Participation Group Recommendations to OFS – How to accurately target and measure participation among disadvantaged students.

The Issue

How can we best measure socioeconomic disadvantage of our intake of students as part of our Access and Participation Plan? We have been tasked with setting additional targets of socioeconomic disadvantage of our intake, alongside POLAR (which is set by OfS), as is done in many other institutions.

There are a number of limitations with focusing solely on POLAR or the more recent experimental measure Tracking Under-representation by Area (TUNDRA). While these metrics capture under-representation in higher education, they are less well-suited to identifying 'disadvantaged learners'.

This report summarises existing and new empirical evidence on the different ways to identify socio-economically disadvantaged students, which inform our recommendations.

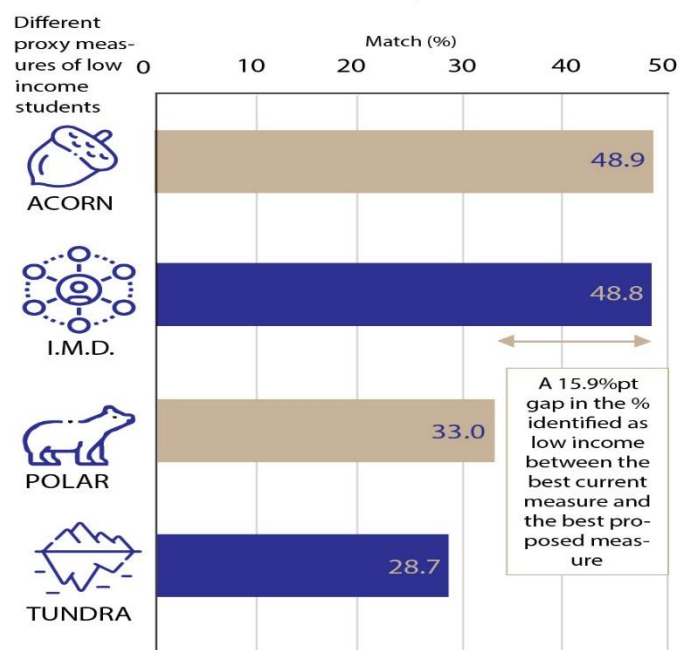
POLAR and TUNDRA

Boliver et al. (2019) summarise the main issue with using POLAR as a metric to identify disadvantaged learners – that of ecological fallacy. While POLAR is an area-based measure of underrepresentation in higher education, it does not necessarily reflect the characteristics of those who live in the areas. This leads to the problem of *false negatives* where potentially disadvantaged students living in areas that are well represented in higher education are not targeted. This is a particularly acute problem in London where participation rates in higher education are relatively high, and yet there are also high rates of disadvantage. There is also a risk of *false positives* where potential students living in lower participation areas are targeted while potentially not being disadvantaged. POLAR is also based upon information at the Middle Super Output Area level – which encompasses quite large and diverse geographic areas. This means that POLAR is even more likely to be susceptible to the ecological fallacy problem than other area-based measures (e.g. ACORN) which are based upon data at a much smaller (postcode) geographical level.

New analysis by the UCL Widening Participation Team, and by Jerrim (2020) has shown that both POLAR and TUNDRA are poorly correlated with measures of disadvantage. The UCL Widening Participation Team used six years of UK undergraduate intake records from 2013/14-2018/19 to analyse the relationship between various metrics of disadvantage available and household income records of 16,795 students. Findings are shown in Figure 1.

Figure 1: Percentage of students who are correctly identified as coming from a low income family by various metrics of disadvantage

In the absence of access to reliable administrative Free School Meals data, the best alternative that is currently available is ACORN



The Acorn underrepresentation indicator identified the highest proportion of lower income (<£16,000) students

The analysis found that both POLAR and TUNDRA had high rates of false positives (students who were from advantaged backgrounds identified as POLAR1 or TUNDRA1), and were relatively poor at identifying *true positives*; those students who were financially disadvantaged who were classified as POLAR1 or TUNDRA1. Figure 1 shows that just 29% of students in TUNDRA1 and 33% of students in POLAR1 areas were from low income households. Contrast this to 49% of students in ACORN and IMD1 target groups who had family incomes below £16,000 – a 16 percentage point difference. Using logistic regression analysis, the UCL Widening Participation team also found that students from the lowest POLAR quintiles were less than twice as likely to be in the lowest income band compared to their peers, relative to other area-based measures such as IMD and ACORN where students were 4 to 5 times more likely to be both in the lowest income band and to receive a bursary.

Similarly, Jerrim (2020) found that both POLAR and TUNDRA were weakly correlated with measures of permanent poverty (see Figure 2), using the longitudinal Millennium Cohort Study (MCS), with the true positive rates for both POLAR and TUNDRA below 50%. He states that this provides “clear evidence that both are a worse measure of family background than many other viable alternatives”.

Alternative Measures

Free School Meals

Given the issue with area-level measures and ecological fallacy, Boliver et al. (2019) emphasise the need to use *individual-level* measures of disadvantage to identify potential students. The only individual-level metric available in administrative data is a binary indicator of whether pupils were eligible (and claiming) free school meals (FSM). This data is collected and tracked by the DfE as part of the National Pupil Database (NPD). The DfE also create a variable which indicates whether a pupil was eligible for FSM in any of the last six years; 'FSM6'. This variable comprises a broader metric of disadvantage. Jerrim (2020) shows that both point in time and average measures of FSM status are highly correlated with measures of poverty in the Millennium Cohort Study dataset, showing that “the correlation for time-average FSM and permanent income poverty ($r = 0.69$) is almost the same as between age 14 ('transitory') poverty and permanent poverty ($r = 0.73$)”.

Currently, data on the proportion of England-domiciled UCAS applicants eligible for FSM is available in the annual UCAS End of Cycle reports at a sector level, through UCAS data linked to the National Pupil Database (NPD). However, this data is not available at an institution level, and is never provided to institutions at the individual level.

The HE sector has called for greater access to pupil-level datasets to enable universities to identify disadvantaged students, particularly through the admissions process. The Russell Group 'Pathways for Potential' report on tackling inequalities and improving access to HE welcomes work that the Office for Students and UCAS are doing to improve access to pupil-level datasets, and calls for pupil-level data on free school meals eligibility to be provided urgently.

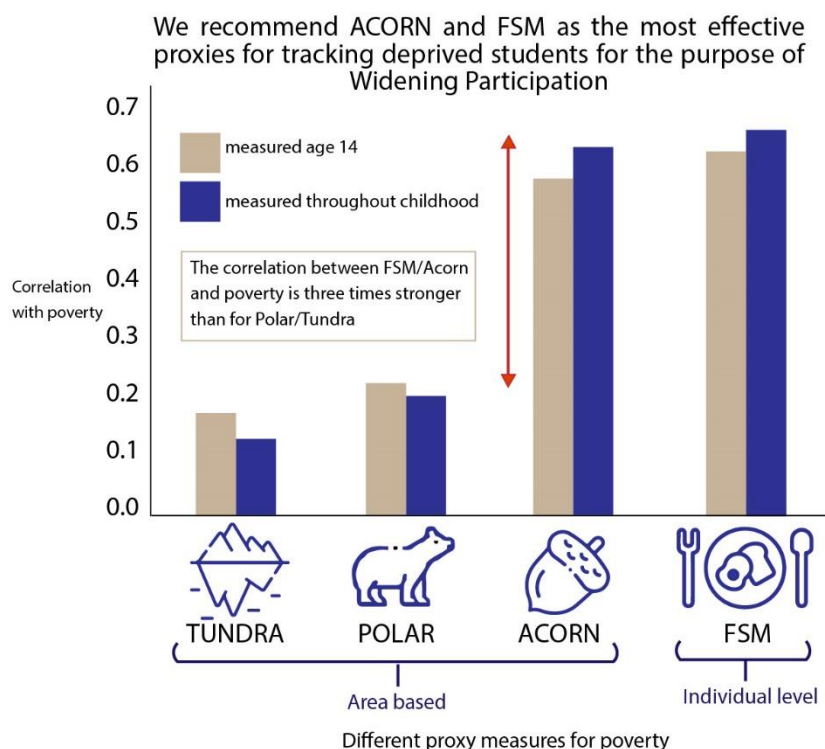
The UCL Access and Widening Participation Office uses self-declared FSM eligibility (verified by a teacher) as one of its selection criteria. 38% of participants are eligible for FSM over the preceding six years. However, this approach is not feasible to be used at scale, for example to assess applicants for contextual offers.

One limitation with the use of FSM data from the NPD is that the indicator only captures those who are both eligible and claim FSM. This means that it may miss a proportion of FSM-eligible pupils who do not claim this entitlement (Hobbs and Vignoles, 2010).

ACORN

Given current issues with access to individual-level FSM data, both analysis by the UCL WP team and Jerrim (2020) find that ACORN, a commercial geodemographic segmentation, is a useful alternative. Jerrim (2020) finds that besides FSM status, “ACORN is the next best predictor of the poverty indicator, particularly when measuring permanent income poverty ($r=0.61$)”. The UCL WP team found that the ACORN underrepresentation indicator identified the highest proportion of true positives, and the lowest proportion of false positives.

Figure 2: Correlations between permanent poverty and various metrics of disadvantage



There are two main issues arising from using ACORN as a metric of socioeconomic disadvantage for the APP¹. The first is that it is a commercial indicator, and therefore not as transparent as the other measures. For example, students themselves would not be able to check whether they were in the ACORN target groups, and providing a look-up tool for students to assess whether their postcode was in a target group would contravene our agreement with the provider CACI. The second is that there is no clear definition of disadvantage when using the classification. Jerrim (2020) uses Acorn category 4 (“Financially Stretched”) and category 5 (“Urban Adversity”) which encompasses 49% of the population. The UCL WP analysis omits group K “Student Life” and group N “Poorer Pensioners” from its disadvantaged classification which accounted for 17% of the UCL UK undergraduates in the sample. Combining groups L-Q for example captures up to 50% of population, far broader than the quintile metrics, and hence can lead to false positives (although in the UCL WP analysis this was still an improvement on POLAR and TUNDRA quintiles 1). Figure 2 illustrates that both ACORN and FSM have a correlation with poverty that is three times stronger than for POLAR and TUNDRA measures.

¹ <https://acorn.caci.co.uk/downloads/Acorn-User-guide.pdf>

Recommendations:

- Our preferred measure of deprivation would be FSM, which is consistently shown to be the most accurate indicator in the research we have examined. This is not currently available to institutions. To use this measure we would require access to the FSM status of our applicants on time for reporting.
- If this cannot be provided, our analysis shows that ACORN should be adopted as the next best measure for targeting students from socio-economically disadvantaged backgrounds.

Next Steps for UCL:

- To continue to lobby for FSM data to be made available to universities at the individual level.
- To decide which Acorn groups should be used to define the disadvantaged classification.
- To analyse UCL data on Access, Continuation, Attainment and Progression to inform targets for the Acorn measure of disadvantage.

References

Boliver, V., Gorrard, S., & Siddiqui, N. (2019) 'Using contextual data to widen access to higher education' *Perspectives: Policy and Practice in Higher Education*, <https://doi.org/10.1080/13603108.2019.1678076>

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Turhan, C. & Stevens, S. (2020) 'Pathways for Potential: How universities, regulators and Government can tackle educational inequality', *Russell Group*