



Higher Education Policy Institute

Benchmarking widening participation: how should we measure and report progress?

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Higher education participation

There is no doubt that access to quality higher education provides very real private benefits for students and a wider public good for the community. Widening participation to higher education has been a policy goal for much of the past 30 years in the UK and elsewhere, with policy changes having greatly increased participation. Young people's participation rates have grown from 10-15 per cent in the 1980s to over 45 per cent today.¹ This could be taken as an indication of 'job done'. But, despite this dramatic change, there are still enormous differences in participation rates in the UK, both across and within regional communities. For example, participation rates among school leavers vary by local authority, from between 23 per cent and 62 per cent.² There is continued political debate on achieving a more equitable balance.

POLAR

The best measure on equity of participation in the UK is the POLAR (Participation of Local Areas) system. Based on the higher education participation rates for individual areas, the POLAR system ranks wards according to their participation rates and then divides them into five groups (quintiles), each of which holds an equal proportion of the young cohort. The quintiles are numbered 1 to 5, with quintile 1 areas having the lowest participation rates and quintile 5 the highest.

For any one institution the current measure generates five numbers showing the proportion of their total intake from each quintile.

Gini

How should we report these five numbers? An approach that describes, reproducibly, how equitable a university's admission profile is would have value. There are lessons from other fields where reproducible measures of equitable access to resources are important.

One of the most commonly used such measures is the Gini index or Gini coefficient. This is a statistical measure of distribution developed by the Italian statistician Corrado Gini in 1912. It is used to assess economic inequality, measuring income distribution across a population. The coefficient ranges from 0 to 1, with 0 representing complete equality and 1 representing perfect inequality. A country in which every resident had the same income would score 0 and a country in which one resident earned all the income would score 1.

Graphically, the Gini coefficient is usually represented on a Lorenz plot. The Gini coefficient is the ratio of the area between the line of perfect equality and the observed Lorenz curve to the area between the line of perfect equality and the line of perfect inequality.

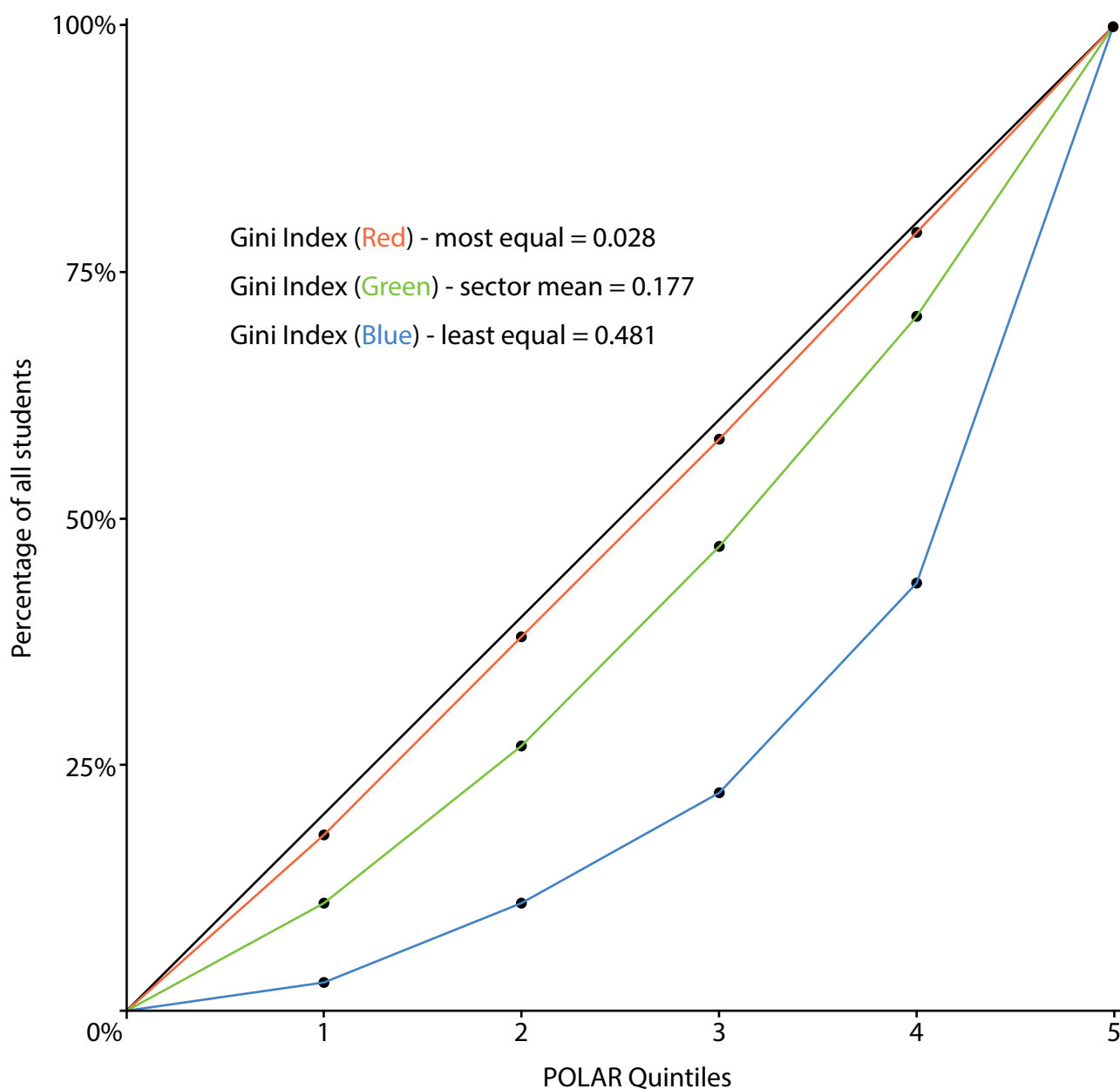
The Gini coefficient as a measure for higher education participation

Using publicly-available 2016 UCAS POLAR participation data reported by universities, it is possible to create a Gini coefficient for each institution.³ Doing this throws up a wide range of Gini coefficients:

- the most equal university – the University of Hull – has a coefficient of 0.03;
- the most unequal university – the University of Cambridge – has a coefficient of 0.48; and
- the average coefficient is 0.18.

The Lorenz plot demonstrates this range graphically.

Lorenz curves for Gini index of POLAR participation rates



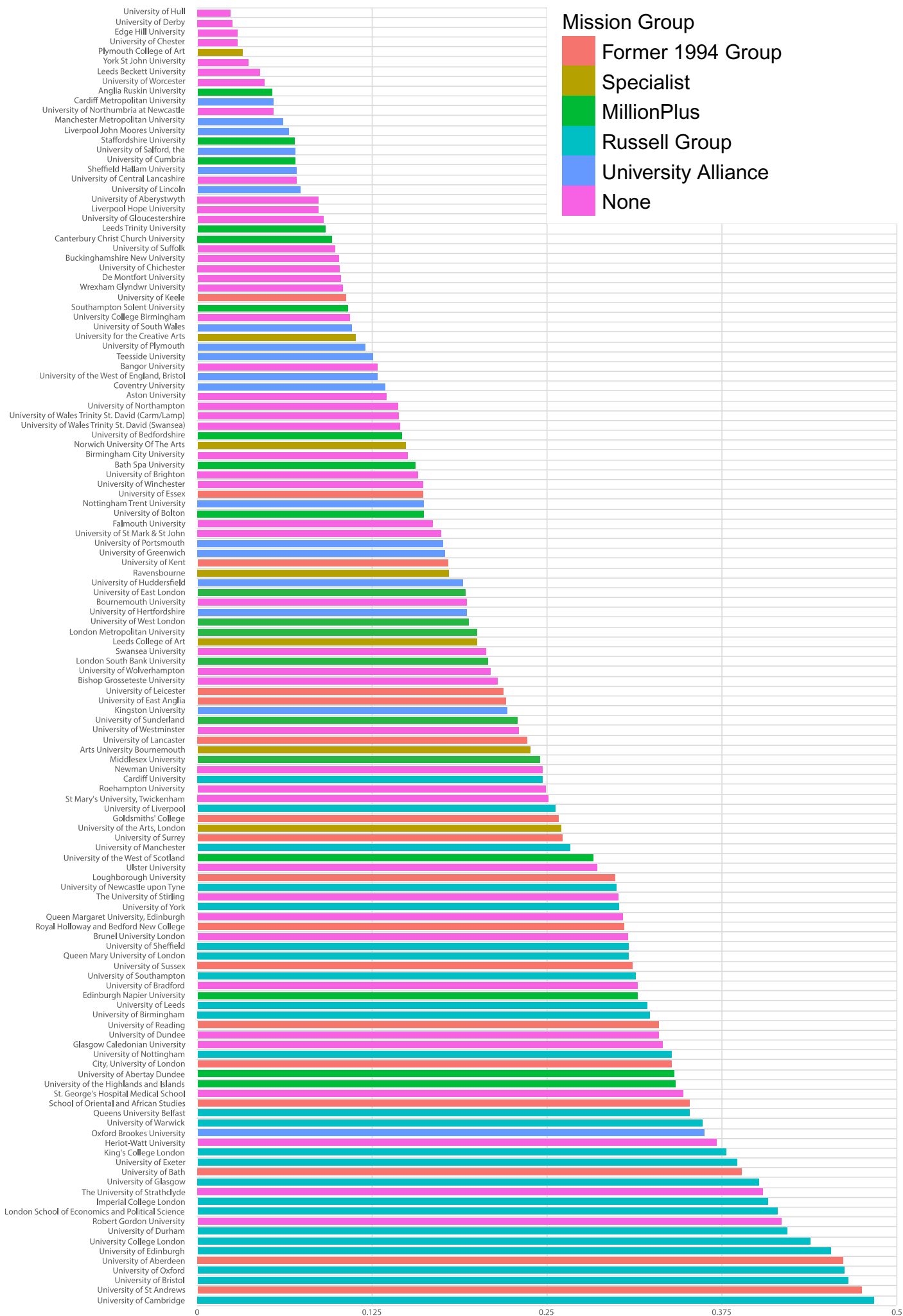
The bar chart to the next page shows the figures for individual institutions in rank order and coloured by mission group. Intriguingly, the spread of Gini coefficients for income distribution by country covers a very similar range.⁴

Discussion

What does considering the Gini coefficient add to current reporting? There is no doubt that the Gini

index is well understood as a summary measure of unequal access to resources. It provides, in a single number, a simple measure of inequality that is far easier to interpret than looking at distributions and interpreting how they compare across institutions. In using this to consider POLAR participation data, it provides a measure that goes beyond simply reporting POLAR 1 and 2 rates.

Gini index calculated on POLAR distribution for UG admissions 2016



Why does this matter? If innate talent and capability were distributed evenly across the population then, consequently, in an ideal world students from all areas would be distributed evenly across institutions with different characteristics. If this premise is true, and I would argue that it is, then all universities should be drawing equally from each POLAR quintile. Indeed, you would not need POLAR quintiles at all as they would all be identical in terms of higher education participation.

Challenges

There are challenges with using the Gini index as a summary measure of equity in admissions. For example:

- it does not give an assessment of the absolute levels of disparity in access to higher education between each POLAR level; and
- it does not tell you anything about *how* a distribution is unequal.

With regard to the first challenge, we need to understand that the Gini index is a measure of relative rather than absolute inequality of resource allocation. Currently around 26 per cent of students living in POLAR quintile 1 classified areas attend university rising to 60 per cent from those in POLAR quintile 5 areas. Even if the gap between participation in POLAR 1 and POLAR 5 reduces significantly, a university's Gini index would remain the same as long as the proportion of students that they draw from each quintile remains the same.

The second challenge reflects on how we consider equity in university admissions. If the goal of widening participation is to provide all students with the opportunity for university study and to

ensure universities bring together people from all social backgrounds, then we should be almost as concerned about low number of POLAR 5 students at each institution as we are about low numbers of POLAR 1 students.⁵

A university with a POLAR quintile distribution of 0.05, 0.1, 0.1, 0.25, 0.5 would have the same Gini index as a university with the mirror distribution of 0.5, 0.25, 0.1, 0.1, 0.05. While there are no universities with the latter distribution, there are 11 with POLAR quintile 1 participation of greater than 20 per cent, and a relatively high Gini score. Should we be concerned about this? I would argue yes, although perhaps not as much as for those with very low POLAR quintile 1 participation.

Conclusion

While more detailed reporting will inevitably be required, using the Gini index provides a simple summary measure that enables progress to be compared, monitored and indeed benchmarked.

Despite this, we must remember that the POLAR quintiles and any subsequent analysis tells us what is happening but not why. So we also need to remember the underlying factors that drive the highly unequal access to higher education across the UK.

One recent report on social mobility highlights one factor that should focus all our minds. Only 24 per cent of students in receipt of free school meals at age 15 make it to higher education by the age of 19, and in the South West and East Midlands the figure is just 15 per cent.⁶ So in no way is this 'job done'!

1 Department for Education, *Participation Rates In Higher Education: Academic Years 2006/2007 – 2015/2016 (Provisional)*, September 2017 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/648165/HEIPR_PUBLICATION_2015-16.pdf

2 Department for Education, *Widening Participation in Higher Education: 2017*, August 2017 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/635104/SFR39-2017-MainTables.xlsx

3 Analysis in R using package: reldist Version: 1.6–6 Date: 2016–10–07 Title: Relative Distribution Methods <http://www.stat.ucla.edu/~handcock/RelDist>

4 <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2172rank.html>

5 Tim Blackman, *The Comprehensive University: An Alternative to Social Stratification by Academic Selection*, July 2017 <http://www.hepi.ac.uk/2017/07/20/comprehensive-university-alternative-social-stratification-academic-selection/>

6 Department for Education, *Widening Participation in Higher Education, England, 2014/15 age cohort*, August 2017 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/635103/SFR39-2017-MainText.pdf