

Charting Equity in Higher Education: Drawing the Global Access Map

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CEEHE produces research that sets the standard for promoting equity in higher education locally, nationally and globally. Our approach is interdisciplinary, international and collaborative.

We see participation in high quality higher education as one of the most powerful ways for countries to create equal, cohesive societies with stable economies and strong democratic participation.

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Introduction



The growing importance of higher education

According to current figures, there will be almost half a billion higher education (HE) students around the world by 2030,¹ up from about 200 million today.² There is every reason to expect this number to continue rising over the course of the 21st century.

The drivers behind the growing demand for HE among students, and for graduates among employers, are many – the principal among them being the need for higher-level skills as our labour markets and jobs change; the growth of the middle class internationally; and the role of HE study as a gateway to professional careers.

The benefits of HE study to individuals and society are widely recognised. Continued study – particularly the completion of an undergraduate degree – is associated with better employment prospects and productivity, improved health and wellbeing, and greater civic engagement. The belief that those with the most education will be best equipped to thrive in today's global economy – with all its risk, change and uncertainty – has been highlighted in several reports.³ It is further illustrated by one of UNESCO's 2015 lifelong learning goals: that by 2030, we should ensure that all women and men have equal access to high quality, affordable technical, vocational and tertiary education, including university.⁴

Why should we monitor access to HE?

Despite the importance of HE and the opportunities it presents, we know that some groups find it much easier than others to access and succeed in it, and that there are some shared patterns across countries in this regard.

To move towards equity, we need a fuller understanding of which groups are accessing HE. At the moment this knowledge is partial and patchy, reflecting the relative neglect of HE access data collection, and perhaps, the complexity of monitoring access to HE.

If robust data on participation in HE are not available, it is difficult to monitor participation and to begin tackling inequities. So there is a social justice case for investigating how we might gather comparable data on who is – and who is not – accessing HE around the world.

Developing better methods of collecting data on HE access, and better systems for comparing that data, will mean confronting many ethical and technical challenges – especially if we hope to conduct cross-country analyses that reach across HE systems operating in very different contexts and at very different stages of development. The project that we report on here contributes to developing what we hope will be a systematic and context-sensitive approach to addressing inequalities of access nationally, regionally and internationally.

Crucially, this is done with an eye to eventually having insight across the entire student 'life cycle' – access, retention, progression, success and subsequent destinations. So we will also need to know more about the types of HE provision that students are accessing, the quality of the qualifications they receive, and meaningful definitions of those qualifications (e.g. what are the new skills and knowledge of those obtaining them?).

Evidence suggests that there are considerable differences in the competency levels of people with similar tertiary-level qualifications.⁵ Indeed, as access to HE has expanded outcomes from HE study have become more varied. This makes any analysis of equity in HE access based purely on acceptance on a course or even the attainment of a degree – including the analysis presented here – an important first step, but just that, a first step. It is vital to recognise that many further steps will need to be taken before we can build a truly useful picture of access as a whole.

Project goals

The project we report on here examined the data that different countries and international agencies are collecting on access to HE. The goals were to:




- Draw attention to the issue of equitable access to HE as its provision expands
- Understand what data are available across the world
- Create a map of data availability: a **Global Access Data Map**
- Make the case for improved data collection on, and monitoring of, the groups that participate in HE as a vital first step towards achieving equitable access for all
- Highlight the issues we encountered in our attempt to collect comparable data, in order to inform and support appropriately-targeted actions at the institutional, national and international levels.

We also considered whether it might be possible to develop a reliable **Global Equity Index** that compared HE access across nations, but found that there are not currently enough suitable data available to create a meaningful index. We have, however, made a first attempt at constructing a limited version using just two variables (presented in Appendix 2). This aims to illustrate the types of cross-country comparisons that could be made if the data that are needed to produce a more complete picture become available.

In place of an index, and as a catalyst to action, we have produced a **Global Equity Data Charter** for HE, with suggestions for some co-ordinated next steps that providers, national governments and international organisations can take to gather more comprehensive and comparable data. The actions proposed in the charter should be considered along with the recommendations made in the next section of the report, which covers the five key messages from our analysis.

Our research

The research included:

-  An examination of international agencies’ existing data on HE participation
-  A survey of experts on HE data collection in 50 countries across the world
-  Case studies (to be published separately in the coming months) looking at data collection on HE participation and its surrounding issues in six countries – Australia, Colombia, India, South Africa, the United Kingdom, and the United States

Our survey was administered to country experts to help us better understand the HE access data that are available in their country by various social indicators. Countries that participated in the survey are listed on the opposite page. For the survey we used UNESCO’s qualification framework (International Standard Classification of Education [ISCED] Level 6) to define HE as programmes “designed to provide participants with intermediate academic and/or professional knowledge, skills and competencies, leading to a first degree or equivalent qualification.”⁶

We examined inequalities related to the following dimensions of students’ social background:

- Socio-economic background
- Gender
- Ethnicity
- Disability
- Religion
- Indigenous groups
- Learners from rural backgrounds
- Older or mature learners
- People with refugee status
- People who speak a particular language
- Other groups that are under-represented in HE

The survey

We asked our country experts to share information about the HE access data that are collected, either regionally, nationally, or both, in their countries. Below is a selection of some of the questions posed to our experts:

“

In your opinion, how thoroughly are data on participation in post-secondary education by learners from different social backgrounds collected in your country by government?

To your knowledge, are there other key reports or research agencies at national/regional level looking at participation in post-secondary education at first degree level by (our 11 social indicators of interest)?

What are the main challenges in collecting better data on participation in post-secondary education by learners from different social backgrounds and how in your opinion could these challenges be overcome?

”

Fifty participating countries

Afghanistan	Egypt	Latvia	Russian Federation
Australia	Estonia	Lithuania	Rwanda
Austria	Ethiopia	Malaysia	Scotland
Botswana	Finland	Mexico	Serbia
Brazil	France	Netherlands	South Africa
Bulgaria	Germany	New Zealand	South Korea
Canada	Ghana	Nigeria	Sweden
Chile	India	Northern Ireland	Switzerland
China	Indonesia	Pakistan	Turkey
Colombia	Iraq	Philippines	United States
Croatia	Ireland	Portugal	Wales
Denmark	Israel	Puerto Rico	
England	Kenya	Qatar	

Five key messages



Five key messages

The five key messages from the research are as follows:

1. Available data suggest that inequalities in access to HE are pervasive
2. The data have important limitations
3. Comparisons across countries are important but difficult
4. Access means more than entry and participation
5. Political will and resourcing shapes data collection

In this section we examine each key message in detail and illustrate the issues using evidence from our literature review, survey of experts from 50 countries, and six case studies. We also provide recommendations for data collection that we believe will lead to improvements in the sector's ability to monitor equity in access and, ultimately, increase that equity.

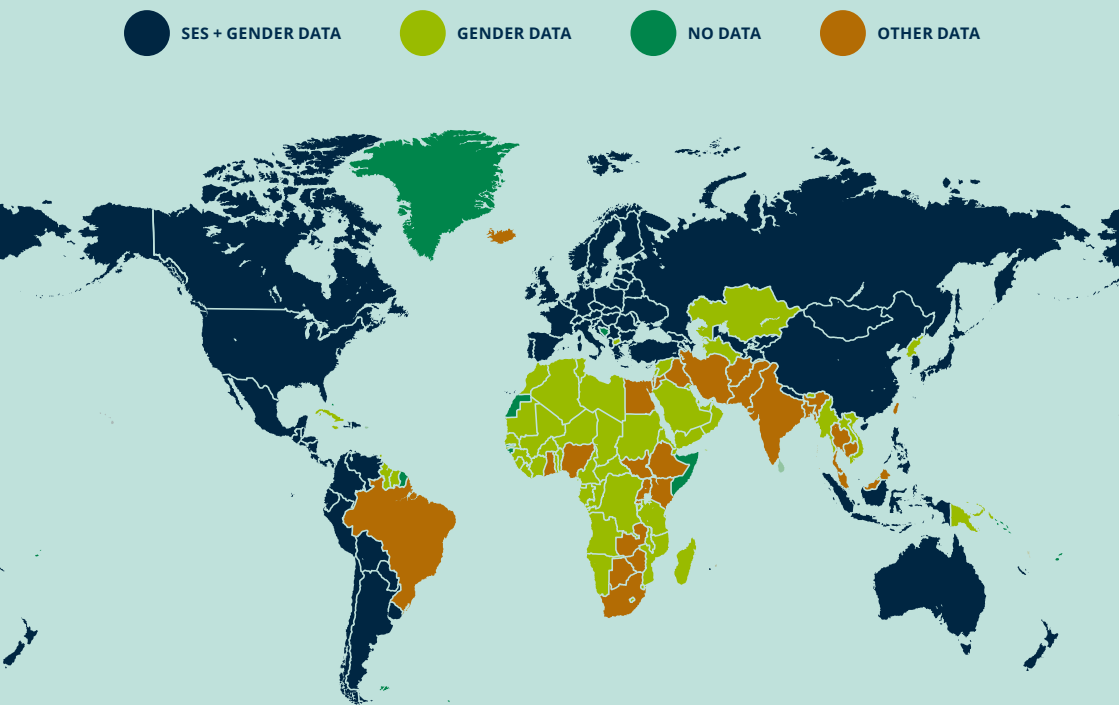
1 Available data suggest that inequalities in access to HE are pervasive



An overview

The first step in our research was to construct a Global Access Data Map, to illustrate the current availability of data on HE access around the world. When we looked at existing cross-country datasets on HE, we found that over 90% of the countries covered by our analysis do collect some form of data on who is accessing HE (see Figure 1), and that data on access by gender and socio-economic background were by far the most common types being collected.

Figure 1: The Global Access Data Map



The map groups countries into the following categories:

Countries collecting data on gender and socio-economic background

For these countries, data on participation in HE by gender

is available from the UNESCO Gender Parity Index,⁷ and data on participation by socio-economic background can be found in at least one of four cross-national datasets:

The OECD's *Education at a Glance 2015* report, which uses information on parental education to indicate a student's socio-economic group.⁸

The Socio-Economic Database for Latin America and the Caribbean (SEDLAC), which collates information from national surveys in 24 countries, and categorises students' socio-economic background based on parental income.⁹

The latest report from the Eurostudent project, which covers 29 European countries, and brings together national student survey data. These use parental participation in HE as the marker of socio-economic background.¹⁰

A range of national surveys across 68 countries identified in a 2011 draft report for the World Bank. These also use parental participation in HE to establish student socioeconomic background.¹¹

Countries with data on gender

These are countries for which there is data on access by gender in the UNESCO Gender Parity Index, but for which we did not find data on any other social indicator.

Countries with other data

These are countries that collect data on HE participation that relate to one or more of our 11 social dimensions, but where data on either gender or socio-economic background are not collected through the sources listed above.

Countries with no data

These are countries where we did not find relevant data on HE participation by social group in any of our sources.



What the evidence shows

As might be expected, more data are available for more developed nations. The most common types of information collected are on participation by gender and by socio-economic background. Across all countries, data are most readily available on access to HE by gender. For many African countries, these are the only data available.

The levels of participation in HE by students of different genders vary widely across countries. The most recent UNESCO Gender Parity Index shows that men participate in HE more than women do in 58 countries, while women participate more than men in 114 countries. Only seven demonstrate gender parity.¹²

The datasets on socio-economic background show disparity in participation across all the countries studied, albeit to varying degrees. For example, across the 23 OECD countries, a child's chances of participating in tertiary education are twice as high if at least one of their parents has completed upper-secondary or post-secondary non-tertiary education. If one of the child's parents had a tertiary education, their chances of participating in it themselves are over four times as high.¹³ To pick out one example, if a child in Italy has one parent who has entered tertiary education, he or she is nine times more likely to do the same.

Evidence of the universal presence of inequalities of access has also been found in sources outside those used to populate our map such as in recent research on 31 European countries undertaken through the EC (European Commission) via the EU statistics on income and living conditions (EU-SILC) project. The research shows that, on average, young adults aged 25 to 34 with at least one parent who has completed tertiary education, are nearly three times as likely to complete tertiary education themselves as those whose parents' highest level of education is upper-secondary or post-

secondary non-tertiary. In some countries, such as Bulgaria, Romania and Luxembourg, the data suggest that young people with at least one parent who has completed tertiary education are six times more likely to graduate from tertiary education themselves.¹⁴

There is also evidence of inequality in access by socio-economic background from countries in the developing world. Analysis of World Bank data from nine countries in south east Asia found that, on average, children whose parents have participated in tertiary education are 20% more likely to participate in it themselves than those whose parents only had an upper-secondary education.¹⁵ Looking at Africa, those in the richest fifth of Ghana's population are seven times more likely to go on to HE than those in the poorest two fifths.¹⁶

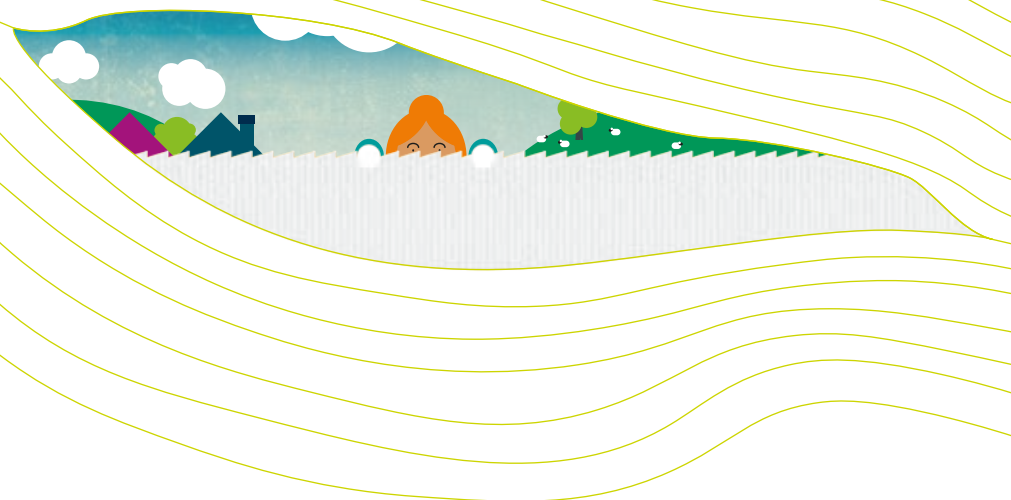
For China and India – the developing countries that are driving the global increase in the numbers of HE students – the data show how socio-economic background works alongside other factors, such as geography, to influence access. In China, where one in five of all students in the world is from, students from poor, rural backgrounds are seven times less likely to enter HE than poor students living in urban areas.^{17,18} In India, where there are over 300 million HE students, the picture is even more striking: those whose families are in the highest income brackets are over 20 times more likely to enter HE than those in the poorest. The gap becomes even wider when gender and geography are considered – poor women from rural areas are 40 times less likely to go on to HE than wealthy, urban males.¹⁹

Understanding the extent of the inequality in participation in HE across the world is still a work in progress. But there is enough evidence to argue that, where certain dimensions of social background are concerned, inequality of access is a genuinely global problem. It occurs in countries and across continents with different levels of wealth and contrasting political and educational systems.



Our recommendations

- Individual countries and international organisations should share their knowledge on how to collect and monitor data on HE participation by social background, and communicate more fully about the ways in which they do this.
- The Global Access Data Map should be updated every three years to gauge progress in the collection of data on HE participation by social group.



2 The data have important limitations



An overview

Considerable amounts of data are being collected, particularly on participation by gender and socio-economic background. But beyond these categories, the collection of data is patchy. The full results of our survey of country-level data collection in 50 countries are provided at Appendix 1. The headline findings can be found in Table 1.

Table 1: Number of survey countries where data are collected nationally and/or regionally on participation by:

Gender	47
Socio-economic background	36
Learners from rural backgrounds	33
Older or mature learners	33
People with refugee status	32
Disability	31
Ethnicity	29
People who speak a particular language	20
Indigenous groups	16
Religion	14
Other groups under-represented in HE	14

There are limitations, then, to the data available for direct comparison across countries, even for more readily available variables like gender and socio-economic background. The OECD’s *Education at Glance* report is one of the world’s most influential publications on educational performance by country. Although it does include a measure of HE participation by parental education level (as used in our Global Access Data Map), this is the only social indicator of HE access that it uses. The Eurostudent project encompasses student data from the majority of EU countries. Data on socio-economic background and ethnic background are also available through the EU-SILC, as described above.

In 2013, the EC’s work as part of its commitment to “the social dimension of HE” showed that 19 out of 36 countries in Europe were collecting data on HE participation by socio-economic background, but only eight were collecting information on ethnic background. Less than half could offer any report on the progress they were making in increasing the diversity of their student intake over time.²⁰

The work of SEDLAC is valuable to helping us understand inequalities of access in countries outside of the EU, and in those not represented among the OECD countries. However, as with the OECD analysis, it only includes data on access by socio-economic background. Further, as we write this report, gender data from the UNESCO Gender Parity Index continues to be confined to a simple male/female distinction, which does not take account of the debates in some countries about including additional gender categories in censuses and other surveys.

Attempts to collect data on other dimensions of social background across countries have proved even more challenging. With disability, for example, national differences in definition and declaration make systematic comparisons very difficult, although data on how disability influences participation is collected across European countries.²¹ And to take the example of another category suggested in response to our survey, it would be impossible to collect meaningful cross-country data on sexual orientation because homosexuality is illegal in some countries and regions.



What the evidence shows

One of the reasons that data collection is so variable and varied is related to the different ways in which equity in access to HE is understood in different countries. One notable finding from our research is that each of the countries represented in our case studies has its own dominant concerns around equality. This reflects wider evidence on the ways in which such concerns are founded in a country's social, economic and political history. This will shape understanding of what HE equity means in policy and practice in any given country, and influence any measures that are introduced to monitor access.²²

The recent release of new regionally-based university rankings has highlighted the importance of different regional contexts in data collection. The leaders of Latin American institutions, in particular, have stressed the need to look at access and inclusion when assessing the performance of universities in their region.²³

Our case studies clearly show the importance of a country's social and historical context in framing access and equity in its HE. In South Africa, for example, the black population remains the focal point of efforts to make HE more equitable as the country continues to grapple with the legacy of apartheid:

'Access for us is about our past, and addressing the damages done by it. This means that, in South Africa, there is very good data available on who participates in HE by ethnicity, but less information available by socio-economic group.'

Mr Mahlubi (Chief) Mabizela, Chief Director: University Education Policy and Development Support, Department of Higher Education and Training, South Africa

In India, the caste system divides the population into five caste groups. Data are collected on participation by students of certain castes, but not others:

'Information is captured by the India Survey on Higher Education on two caste groups: scheduled castes and scheduled tribes. There are other castes that are very socially deprived, but there are few efforts here to collect information on their HE participation.'

Rakesh Basant, Professor, Indian Institute of Management, India

Other countries experienced a range of historical or administrative barriers to detailed data collection. These challenges stemmed from differences in cultural and political context, and included a lack of appropriate infrastructure, inhibitions driven by wider social values and mores, and the consequences of ethnic strife:

'Income of parents would be nice to have, but tax and social security systems are so complicated that many people do not know their income upfront, and even less knowledge can be assumed from their kids – i.e. the students. Hence, we gave up on that some years ago.'

Martin Unger, Senior Education Researcher, Institute for Advanced Studies, Austria

In many countries there are simply too many ethical, political and resource barriers to collecting personal data through tools such as a census, or other national official surveys of individuals. More generally, countries seem to have very different ideas about which kinds of information are 'private' and which are 'public':

'... ethnicity ... is going to be very hard here to collect on, because it is highly protected by the constitution, and is private.'

Ana Restrepo, Director, Children's University, EAFIT University, Colombia

‘... religious and sexual orientation are mostly regarded to be too personal to ask students about ...’

Martin Unger, Senior Education Researcher, Institute for Advanced Studies, Austria

In Rwanda, where collecting data on ethnic background could provoke further military conflict, we found a particularly stark illustration of how sensitive a task the attempt to increase data collection on social characteristics can be:

‘Income levels, particularly for people in rural areas without salaried jobs, are difficult to calculate. Since the 1994 genocide it has been against government practice to divide Rwandans into ethnic classifications, so there is no data available on that.’

Chris Hedrick, ex Chief Executive Officer of Kepler, Rwanda

Clearly, any advances that are made in how much data is collected, and which social characteristics it covers, will need to be supported by both physical infrastructures and ethical frameworks. In this case, infrastructure means not just greater investment in trained staff and IT systems, but also in information management and the principles that underpin it, covering factors such as informed consent, data use and storage, and the de-identification of data that have shared ownership across different social groups.

In the case study countries where information gathering on a wide range of social characteristics is well established, and where the related infrastructure is more developed (Australia, the United Kingdom, the United States, and, to a lesser extent, South Africa), data are being collected at an institutional as well as a national level. They are being used to compare performance and drive behaviour change.

In South Africa, for example, there is a national Higher Education Management Information System run by the Department of Higher Education and Training. Data are collected on total enrolments and completions; then enrolments and completions by qualification type, field of study, and the type of institution attended.

The Council on Higher Education, an independent statutory body, breaks down these data by age, racial profile and nationality – reflecting the country’s history. The figures are then used to inform government efforts to improve participation and success among previously marginalised groups.²⁴ This kind of practice is less common in many of our other survey countries.

As well as highlighting countries’ different definitions and understandings of equalities, our case study respondents showed the ways in which ideas about which are the most crucial target groups tend to shift, placing even greater demands on data collection systems. For some in the United States, the focus of debates about access to HE has shifted from race and ethnicity to socio-economic status:

‘The under-represented are the people with less resources and money, white or black or Hispanic. I think the African-American and the Hispanic population are still under-represented, but more and more I concentrate my planning and thinking on income rather than colour of skin.’

Jonathan Daube, President Emeritus, Manchester Community College, Connecticut

The growing number of refugees around the world is also creating new groups that may not find it easy to access HE. People movement to Europe alone is now higher than at any time since the Second World War and, in the short term, many refugees are students.²⁵ In the longer term, this movement will permanently change the composition of some countries by forming new minority communities.

In the United States, ‘undocumented students’ (migrants who entered the country without inspection, or who overstayed their visas) have risen in prominence as a potentially marginalised group that there is a need for better data on:

‘In the last decade, the issue about undocumented students has become a really hot topic. ...there’s more work being done on access for these students.... But the databases – at least the national ones – have not kept up in terms of being able to track these students.’

Stephen Desjardins, Professor, School of Education and Gerald Ford School of Public Policy, University of Michigan, United States

If nothing else, the collection of information on participation by ethnic background is likely to become more important, despite the barriers to gathering data on this in a significant number of countries.



Our recommendations

- Develop the case for establishing a global centre that can provide dedicated expertise and resources to support (inter)national efforts to improve data collection. This centre could link up with other centres and initiatives that aim to improve the collection of education data across the world, and could usefully examine:
 - The social and political barriers to the collection of administrative data on potentially sensitive topics across countries, and the scope for addressing some of these gaps by, for example, using data from labour force surveys.

- How to build poorer countries’ capacity to collect data by working with agencies such as UNESCO. This could be through national surveys or, perhaps more feasibly, bringing together datasets collected by institutions.
- Review national measures of HE access regularly to ensure that they remain sensitive and responsive to changes in the kinds of groups falling behind in participation.

3 Comparisons across countries are important but difficult



An overview

Even where countries are measuring data on ostensibly the same characteristic, the basis on which data are collected can vary widely. The problems of collecting data on socio-economic background are well documented, as a multitude of markers are used, including parental occupations and educational levels; family income; geographical indicators such as the postal code of the student's home address and the type of home; and the material goods and utilities that a family has.²⁶ Some countries also factor race, ethnicity or caste into this measure. The number of categories of socio-economic background that are used, and the proportion of the population that fall into the top and bottom tiers, will also vary from country to country.

Similar issues relate to ethnicity. Ethnic composition varies widely from country to country, and even a broad measure of 'minority' vs. 'majority' populations does not always stand up to scrutiny. This also applies to other dimensions such as disability – a category that is used to cover a range of non-physical as well as physical conditions in some countries, but not in others.

The extent of these differences of definition means that we may not be able to build a reliable picture by working from existing data collection. But designing more robust and meaningful comparisons will be challenging. There is also the danger of imposing ill-fitting constructs from economically rich countries on less developed countries. For these reasons, making comparisons between countries in other areas of educational performance (in the OECD's PISA survey, for example) has been controversial.²⁷ So there is good reason to proceed with caution.

However, there is a danger here of the best being the enemy of the good. It is a delicate balance. Having robust and comprehensive data collection on HE access is important because, by measuring something, we show it is important. It also makes it possible to manage it.

However, the issue of equitable access is just one of many facing HE. At the moment, data and comparisons on access have a relatively low profile within national and international university rankings (for example, the UK's Complete University Guide and, internationally, the QS, Shanghai Jiao Tong and Times Higher Education rankings), notwithstanding the previously mentioned demand from Latin American universities for the inclusion of some form of access or inclusion metric.²⁸

In most ranking exercises, the focus is on HE providers' (and national HE systems') resources, research esteem and/or teaching quality. Access is notable by its absence. In fact, because some national rankings (such as those currently in place in the United Kingdom) include measures of students' entry qualifications, they may actually work against the access agenda on some aspects of social background. Given that prospective students from lower socio-economic backgrounds tend to have lower entry qualifications, the universities that accept them will be risking a lower ranking.

In the face of a growing culture of ranking other aspects of HE activity, we need a plan to collect credible data on access to focus attention on the issue. This prompted us to investigate the possibility of producing a 'Global Equity Index' that could be used to compare different countries' performance on access.



What the evidence shows

Our survey of data collection in 50 countries revealed that gender and socio-economic background were the two measures on which HE participation was most commonly monitored across countries and international organisations.²⁹ To explore how feasible it would be to compare countries' performance on equitable access to HE, we combined data from the UNESCO Gender Parity Index with measures of participation by socio-economic background (using the four data sources described on page 20) to create an indicative equity score for each country.

This initial attempt to compile a Global Equity Index showed that much more work will be needed before robust measures can be developed and widely used. Even when using just these two variables, we found it difficult to make credible comparisons across all countries because of the different ways in which socio-economic background is defined across the datasets. Even data within the same dataset were not always entirely comparable. For example, the Eurostudent report's sample sizes for student surveys vary widely between countries. The SEDLAC data brought together and compared information from national surveys that were run in different years – sometimes as many as 10 years apart. The problem of comparability was thrown into even sharper relief when we discovered that countries that featured in more than one of the datasets appeared to perform differently on the same measures from one dataset to another.

An initial analysis

We compared some of the equity scores in our prototype index to some of the potential drivers of equitable access in HE (see Appendix 2). Unlike some other studies, this analysis suggested that equitable access was not as strongly associated as had been previously assumed with factors such as a country's GDP per person, the level of overall HE participation, or the level of inequality in the country. These results, although interesting, should be interpreted with caution, and revisited as the availability of comparable data improves.



Our recommendations

- Explore collaboration between organisations involved in cross-national data collection to allow for more meaningful data comparisons of performance between countries.
- Encourage countries that have the necessary infrastructure to collect data on comparable indicators for at least four dimensions of inequality that are relevant to their particular context, but including a shared measure of socio-economic background and gender. This will provide a realistic starting point to ensure that the needs of a greater range of potential learners are included, and create a stronger basis for cross-country analysis. The 'levelling up' of data collection among these countries will also prepare the ground for comparisons across a wider range of countries in time.
- Countries with stronger infrastructures should support other countries to set achievable targets to collect and compare data, and explore how this work could be strengthened by regional co-operation.



4 Access means more than entry and participation



An overview

This report has focused on the availability of participation data at the point of entry to HE. But our case studies highlighted the need to consider also inequalities in outcomes, such as students' academic progression and their subsequent destinations.



What the evidence shows

Students from all social backgrounds need to be able to reach their full potential and to benefit from their HE experience. If certain groups are shown to be concentrated in less prestigious provision, to be consistently under-performing, or to be failing to complete their courses, then entry to HE is clearly only part of the picture. This emphasises the need to extend the data that are collected in order to fully understand the inequalities in any given system:

'To collect better data there also needs to be outcome measures, not just initial access, as a means of identifying accountable areas for improvement.'

Angel Brown, HE Consultant, Canada

'There's something like just over 30% of people who are finishing HE in Colombia. But [it is] of very low quality for most of them, so it doesn't mean anything.'

Julian Marino, Senior Researcher, Centre for Research and Training in Education, Los Andes University, Colombia

*'I wonder about the value of driving through the university system a whole bunch of people who will graduate with pass-average degrees, when the average student ... is completing a credit- or distinction-average degree. Undoubtedly, the people with pass-average bachelor degrees are likely to be better off than they would have been without it, but we haven't really done anything to shift disadvantage. We've just kind of entrenched a graduate inequity.'*³⁰

Craig Ritchie, Senior government official, Commonwealth Department of Education, Australia

Certain parts of the world are making considerable efforts to use data analytics to improve student performance and progression and enable greater understanding of the barriers to success for learners from under-represented groups. In four of our case study countries (Australia, South Africa, the United Kingdom and the United States), major initiatives are under way to bring different forms of data together in order to better understand the needs of different groups of students.

This 'student lifecycle' approach is particularly high on the English HE system's agenda.³¹ For example, the UK Department for Education is working with the Higher Education Statistics Agency to link pupil census data that give information on the characteristics and attainment of school pupils with data on the progress and attainment of those pupils who go on to HE study. It will also link these types of information with administrative data on employment and taxation records. This will allow the UK to track individuals through schooling and HE, and into employment.³² These efforts will allow us to learn more about how we can extend data collection beyond 'point of entry', as well as about what these data actually reveal, and how they can eventually be used.

Here also though, there will be 'local' issues in compiling the necessary data. In the United States, some states' concerns over individual privacy and the relationship between the individual and the state will restrict the kind of 'cradle to grave' tracking that would reveal the most about access to HE and barriers to participation and progression:

‘... the effort was made to collect these data at the national level and that got defeated ... because a lot of people thought that was a move towards basically a national identification system.’

Kevin Dougherty, Associate Professor, Teachers College Columbia University, United States



Our recommendations

- Move beyond efforts to establish data collection on entry to HE by social group by planning for better data collection that allows the tracking of groups throughout the entirety their studies.
- Redouble efforts to engage institutions – and students – in helping to shape and support data collection for national and institutional use.
- Encourage institutions to monitor the progression and outcomes of their own students on selected measures as a first step in cases where the infrastructure is not available to support data collection across the student lifecycle at a national level.



5 Political will and resourcing shapes data collection



An overview

In the main, it is the wealthier countries that have the most sophisticated and robust data collection systems. But our survey revealed that several developing countries – such as Chile, China, and South Africa – are also making significant efforts. Undoubtedly resources and relative economic and social stability make it easier to develop comprehensive systems for data collection and monitoring. However, the political will to collect information is grounded in how important policy-makers and politicians (as well as higher education institutions and their representative bodies) believe the issue to be. This is also a major factor in shaping what data are collected, and how they are used.



What the evidence shows

All data collection is, of course, highly politicised. It is shaped by political priorities as much as practicalities. This makes it politically sensitive and subject to manipulation – or outright avoidance:

‘If you asked me if Colombia had 45% of students in HE, I would say it is lower. I know official statistics say it is that high, but that is because it is a projection, not an estimated measure.’

Monica Ospina, Associate Professor, EAFIT University, Colombia

“sometimes it is better not to know something” I was once told by a member of the Ministry of Higher Education.’

Martin Unger, Senior Education Researcher, Institute for Advanced Studies, Austria

‘Data are collected, but not analysed or used – and that is the problem. Access and equity have not been on the HE reform agenda in Croatia until now – the issue was long considered a “non-issue” altogether, or was considered a second-rate issue compared to “pressing” issues such as funding, quality assurance, etc.’

Thomas Farnell, independent expert on access to HE, Croatia

Data are also politicised in instances where they are readily available and in the public domain. The UK, and in particular England, collects as much – if not more – data on who participates in HE than any country in the world. But its current use of these data highlights how the information can reflect and/or shape a system in line with particular ideas about the purpose of education. And it demonstrates how the purpose of education could be reshaped by a metrics-based approach that relies on the data that are easiest to capture:

‘We can now use administrative data on the earnings of graduates to identify patterns in future earnings – potentially over the life course – by institution, course or social background. This is very welcome overall, but we need to be mindful it doesn’t narrow our understanding of what success in HE means and reduce it just to earning more money.’

Mark Gittoes, Senior Researcher, Higher Education Funding Council for England, UK

Data collection requires resources – namely infrastructure and investment. It also requires staff with the knowledge, expertise and training to process information, and an HE system that gives providers some incentive to gather and submit the necessary data.

In some HE systems, the large number of providers and students makes data collection difficult. Where the majority of those providers are private institutions, the challenge may be even greater as incentives may not be in place to encourage compliance:

‘The Indian HE system is vast, with roughly 700 universities that can confer degrees and about 35,000 affiliated colleges, so collecting data is a mammoth task here. When we look at the private institutions who are a large part of the 35,000 colleges – only a minority actually complete the annual return, which is part of the All India HE Survey.’

Rakesh Basant, Professor, Indian Institute of Management, India

‘Brazil has continental dimensions; it makes it difficult to gather the data of all students centrally. Most of the universities are private, and it is more difficult to get the data in these universities. The national government could also involve the transfer of the budget of public universities to the collection of data. For private universities, relating the submission of data as a prerequisite for participation in public policies.’

Danilo de Melo Costa, Professor, Universidade Federal de Minas Gerais, Brazil

If there is political will to tackle instances where private HE providers are thought to be falling short on quality and engagement, one possible tactic would be to link data collection requirements to accreditation and quality assurance processes.

Some countries, such as Nigeria, have multiple political and resourcing barriers to overcome:

‘Nigeria faces countless obstacles to data collection across all sectors – chief of which includes a lack of access by key organisations and individuals to funds to constantly carry out research, an absence of an organised system to report data, conflicts in some regions, a large unenlightened population, ethnic / tribal differences, and sometimes the lack of leadership and political will to entrench a system of data collection in the society.’

Michael Olumekor, Youth Ambassador and Advocate, Nigeria

Although, it was not possible to quantify the level of resources that would be needed to make tangible improvements to data collection, there was support for investing in data collection as a crucial step in improving access across all the case study countries, including low income countries:

‘Extending or broadening access to higher education is important for the sustenance of not just the economy but the country, and it can only be achieved if we improve the data that we collect. So that we know what we have and where we want to be. It is crucial for us, as we want to improve the participation rate in higher education to 25% by 2030.’

Mr Mahlubi (Chief) Mabizela, Chief Director: University Education Policy and Development Support, Department of Higher Education and Training, South Africa

‘Higher education data is a very big problem in India. We do not have reliable information on the social background and level of income of those who are in higher education institutions. We also do not have information on the amount of fees levied in private institutions and it is very difficult to obtain data on this. All these indicate that we need a system to collect relevant information so that the discussion can be more meaningful for policy formulation and implementation.’

N. V. Varghese, Professor and Director, Centre for Policy on Higher Education, Delhi, India

Political will and resourcing are not purely matters for governments to deal with. Higher education institutions – and their representative bodies – will also need to show political commitment and share responsibility for data collection. This will mean working individually and together to put in place higher education management information systems that monitor who enters each institution by social background, and track their progress.

One example of this in action is the partnership between four South African universities to secure nearly \$3m from the Kresge Foundation for the *Siyaphumelela* (We Succeed) project, which looks at how universities can better connect data collection practices across institutions in order to understand and address the progression and success of their students.



Our recommendations

- Make the most of the data that are already available on HE access through regular reporting and target-setting.
- Consider less costly options for data collection. National governments could integrate it with national censuses, or participate in collective research through intermediary regional bodies or, alternatively, start with data collection at an institutional level.
- Use arm's-length bodies to support robustness in data collection and monitoring.
- Use incentives to encourage providers to co-operate in their data collection. National Governments could use quality assurance levers and/or institutional subscription models to help engage providers, particularly private ones, in shaping and supporting data collection.

Establishing a Global Equity Data Charter for Higher Education



Many groups in society continue to be under-represented within HE. They are missing out on fulfilling their potential within education, and on HE's benefits to economic prospects and health. This entrenches existing social divisions.

Data are powerful: they signal what is important and allow change to be managed. And while rankings – whether of institutions or countries – have been praised and criticised in equal measure, they have been shown to be powerful tools for driving change where they are transparent and regularly updated.³³ There are already a wide range of comparative data and performance rankings in HE – now access must be moved centre stage. Our survey of the field suggests that there are sufficient foundations in place to begin to make this change.

To create real impact, work to improve the collection of HE access data needs to be co-ordinated across several fronts. Our Global Equity Data Charter, outlined below, proposes concrete actions that will contribute towards this. The Charter is intended to stimulate debate about the desirability and feasibility of data collection at institutional, national, and international levels. It also complements UNESCO's work to improve the availability and quality of data on educational performance and inequality more broadly. This work, taking place in the context of measuring UN Sustainable Development Goal 4, proposes an international code of conduct for education data collection and an Inter-Agency Group on Educational Inequality indicators.³⁴ We hope that our Global Equity Data Charter will ensure that improving data collection on HE access and participation is central to the ongoing work of UNESCO and other agencies that are working to improve our knowledge of educational inequality across the world.

As our five key messages have illustrated, it is important to understand that countries sit on a wide spectrum of data collection on HE participation. Lower income countries, especially, face considerable challenges in improving their resourcing for this. Given this reality, our data charter presents actions in ascending order from the least to the most costly and difficult. It recognises that some countries will be able to take on the more in-depth recommendations in the short- or medium-term, and that others will need to build up to them more slowly.

A Global Equity Data Charter for Higher Education

PRELIMINARY STEPS

BROADER INITIATIVES

NEW ENTITIES

Governments should:

- Make all the data they collect on participation in HE by social background available in an open access form as soon as possible after it is collected.
- Integrate data collection on who participates in HE by social background in their national statistical strategies, and include questions that look at these issues in national and regional social censuses.
- Make providing information on the social background of student intakes a statutory requirement of the license to operate and deliver HE for providers from both the public and private sectors.
- Set SMART (Specific, Measurable, Achievable, Relevant, Time-bound) targets for increasing levels of entry among groups from at least four different measures of social background, and invest in appropriate systems of data collection to measure progress against these targets.
- Form a body that operates at arm's-length from government and has responsibility for the collection and analysis of data on HE participation.
- Support this body to produce an annual report that is presented publicly to national law-makers. This should summarise the data available on higher education participation by social background, and the progress being made in this area.

International organisations should:

- Work together to form a global equity data working group that brings together agencies and leading researchers across countries to strengthen data collection policy and practice. This would provide a stronger basis for comparative analysis.
- Use (and develop) tools like the Global Access Data Map and proposed Global Equity Index to track progress, and update them on a regular basis to publicise the progress made.
- Support the formation of a global centre for HE access and equity data collection and analysis that will support improvements in data collection across the learner journey.

Higher Education providers should:

- Work with governments, their representative bodies and independently to put strategies in place to collect information on their intakes – and their progression and outcomes – by social background.
- Put in place governance structures to make sure that data on the participation, success and progression of learners by social background are systematically monitored and acted on.
- Work with governments and external agencies to make sure that data on access, participation, success and progression of learners by social background are included in HE ranking systems.

Considerations for the future

Our research has focused on ‘traditional’ HE provision in the form of the on-campus undergraduate degree. But HE provision is broadening and expanding, and this will add new considerations to any plan for tracking participation in HE.



The diversification of HE and the growing importance of online learning

HE systems are not static. Finite resources and rapid technological change are shaping how funders and providers respond to growing demand for HE and for graduates. This is changing the HE options on offer. Emerging examples include stackable credentials, micro-credentialing, badges and portfolios with references.³⁵

A notable element of this diversification is online learning – from full online degrees to award bearing and non-award bearing MOOCs (Massive Open Online Courses). Online courses will be particularly important in the developing world. Among our case study countries, both India and South Africa have ambitious goals to expand enrolment, and are experimenting with online mechanisms to help achieve them.³⁶

Such developments may support greater access, but the question then becomes ‘access to what?’. If these courses become the preserve of particular groups of students, new forms of HE could complicate as much as address issues of equitable access. This applies particularly to online provision, which currently lacks the important social capital and networking benefits of face-to-face provision – especially that of the full degree at an elite institution. So it is questionable whether the online delivery of tertiary education will enable worldwide HE expansion that is both equitable and of high quality – at least in the short- to medium-term.³⁷



Rise in global student flows

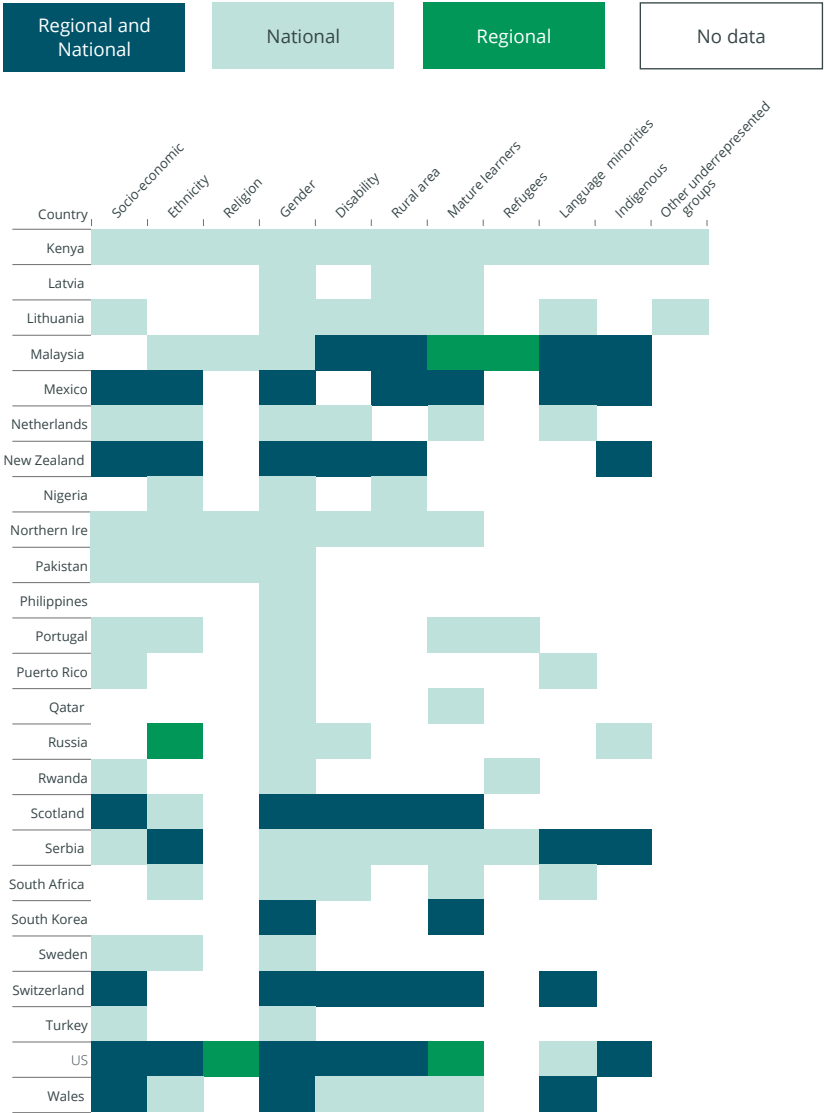
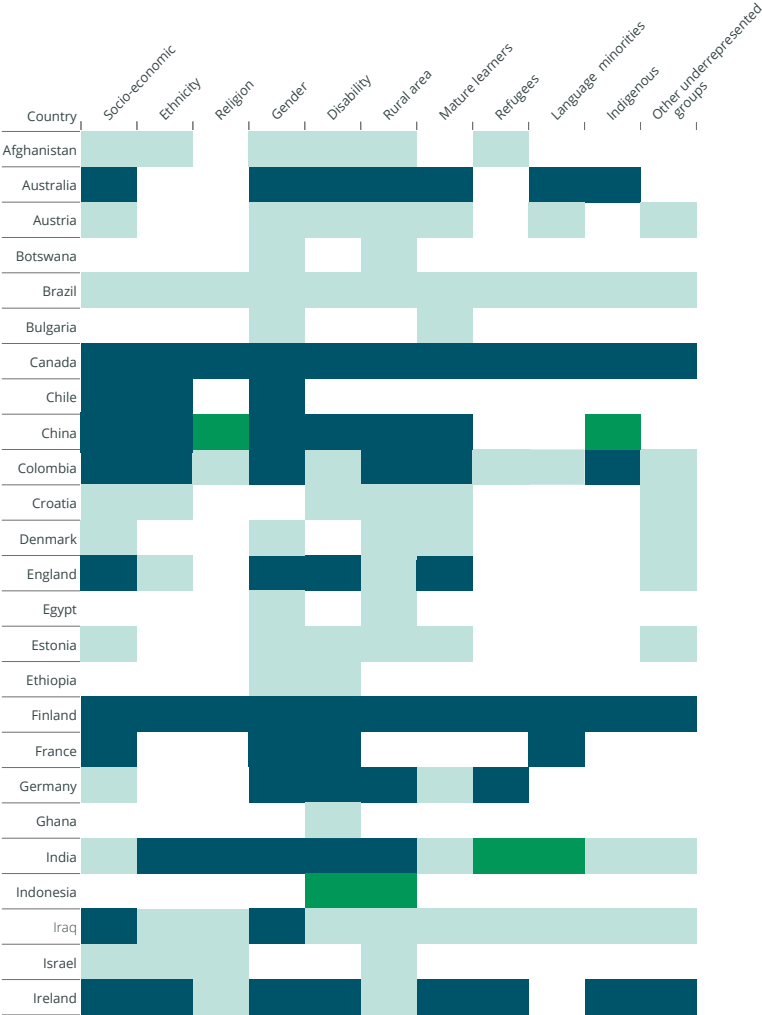
Equity in HE participation is usually seen as a domestic issue, but as the number of international students grows it is important to look at student mobility from an equity perspective. Employers increasingly favour students who have had a global student experience, and international study can enable the development of valuable ‘social capital’.³⁸ The available evidence suggests that students from higher socio-economic backgrounds are significantly more likely to study abroad for part or all of their degree, but data collection on this is minimal.³⁹ If inequalities in access to HE are to be addressed, disparities in participation in this increasingly valuable part of the HE experience will need to be more clearly understood.



Expansion of postgraduate study

As participation in degree-level qualifications increases, the currency of these qualifications in the labour market decreases. This is already apparent in advanced economies, where having postgraduate qualifications has become increasingly important. Measuring participation at postgraduate level raises a new question: whether to measure a postgraduate student’s socio-economic status based on their parents’ circumstances, or their own. Whatever the answer, there will be a need to monitor further study across the full range of dimensions of inequality.

Appendix 1 – Availability of country data on progression to HE by social indicator



Appendix 2 – A first attempt at a simplified ‘Global Equity Index’

Calculating equity index scores for each country

To start with, we calculated four sets of individual country ‘equity scores’ using the four socio-economic status data sources and the UNESCO data on participation in HE by gender.

To calculate the scores, we weighed socio-economic background and gender equally. In the case of the UNESCO gender parity index data, we also treated over-/ under-representation of males or females equally, so that the further a country was from having equal numbers of females and males in tertiary education, the lower it scored. The equity score for each country was the product of two individual values: one reflecting its performance on entry for learners of different socio-economic backgrounds, and another indicating its performance in terms of gender parity in participation. This exercise was

completed separately with each socio-economic data source and the UNESCO gender data to produce four sets of scores. A higher index score indicates that a country ostensibly has a lower level of inequality in access to HE.

The socio-economic status data indicators were:

- The OECD *Education at a Glance 2015* report.⁴⁰
- The Soci-Economic Database for Latin America and the Caribbean (SEDLAC).⁴¹
- The latest report from the Eurostudent Project.⁴²
- A range of national social surveys from across 68 countries.⁴³

A more full description of each of these sources can be found on page 20.

Comparing the relationship between equity scores and the drivers of HE participation

Given that we are unable to construct one overall equity index score for different countries (and instead have four different indices), we decided to compare the various indices with factors typically assumed to be associated with reductions in inequality to HE access. We wanted to see if there were broad trends that could be seen across the indices. We focused on three factors that evidence suggests may be related to HE participation by social background:

Country wealth

The UNESCO World Atlas of Gender Equality in Education shows a strong relationship between the participation of women in tertiary education and the wealth of a country. Research by the OECD also indicates that higher economic growth may reduce educational inequality.⁴⁴ We used GDP per person as a measure of countries’ wealth.

Level of participation in HE

A significant amount of research looks at the relationship between expansion in tertiary or HE participation and inequalities in participation.⁴⁵ Most of this work draws upon the theory of Maximum Maintained Inequality (MMI), which suggests that the level of participation among lower socio-economic groups will only increase when the levels of participation by higher socioeconomic groups have become saturated. At this point, inequality will then shift to the next, higher, level of attainment. The measure we used to indicate overall levels of participation was the UNESCO gross enrolment ratio (GER).

Extent of inequality in a country

Recent evidence from the OECD suggests that education inequality and overall inequality are strongly linked.⁴⁶ Specifically, they found that countries with lower levels of economic inequality also have lower levels of education inequality at the school-age level, suggesting that this may be the case for HE participation as well. We used the Gini coefficient, a commonly used statistical measurement that represents the income distribution of a country's residents, as a marker of countries' overall levels of inequality.

Results

We analysed our data using Pearson's correlation coefficient, a widely-used statistical test designed to measure the strength of the linear relationship between two sets of data. (The test provides a value between +1 and -1, where +1 is total positive correlation, 0 is no correlation, and -1 is total negative correlation.)

Assumed drivers of HE participation			
Global equity index scores derived from:	Country wealth (GDP)	Participation in HE (GER tertiary)	Extent of inequality (GINI index value)
OECD + gender datasets	-0.1193	0.4066	-0.3785
Eurostudent + gender datasets	0.2779	-0.1731	-0.0552
SEDLAC + gender datasets	-0.0673	0.0229	-0.1395
World Bank + gender datasets	-0.0498	-0.1396	0.0641

As described above, when calculating our global equity index scores, countries with a higher index score were ones that had a lower level of inequality in access to HE. This means that if either country wealth or country participation in HE were associated with lower levels of HE access inequality we would expect higher **positive** Pearson coefficient scores than we have found. However, the GINI index value, which represents the relative inequality of a country, decreases the more equal a country is. So if the extent of overall inequality in a country was associated with lower levels of HE access inequality, we would expect a higher **negative** Pearson co-efficient score than we have found.

Across the four different datasets we found no statistically significant correlation between our calculated equity scores and our assumed drivers of HE participation. The table above shows that, in the majority of cases, the value is close to 0 and less than 0.2. Even where there are stronger correlations, such as the correlation between the OECD + gender datasets and the GER tertiary/GINI index value or the Eurostudent +

gender datasets and GDP, these relationships were still not statistically significant given the small number of countries involved.⁴⁷

Implications for policymakers and further research

Our preliminary analysis suggests that relying solely on broad changes to the macro policy environment (expanding HE systems, growing economies, or reducing inequalities in income distribution) to address inequalities in HE access may not be enough. Although expanding our HE systems is likely to increase the numbers of learners from different groups who can participate, it will not necessarily increase the relative chances of under-represented groups participating. Instead, inequality in HE access is a problem that appears to need specialist attention.

However, given the amount, quality, and comparability of the data that are currently available, these conclusions come with significant caveats. As shown in section 2, there are limitations in comparability between the countries in each dataset, and differences across datasets in scores for the same countries. This is a common problem when different measures for socio-economic status are being used.⁴⁸

But in spite of these obvious limitations, the lack of correlation between the equity scores and the macro-factors is shown across all the datasets. This analysis strengthens the case for implementing the recommendations made in this report – as well as those laid out in the Global Equity Data Charter – which will improve data collection and comparability, and move us towards a better understanding of what actions we can take to make participation in HE more equitable across the world.

References

1. Calderon, A. (2012). *Higher education in 2035—the ongoing massification*. Melbourne: RMIT.
2. EFA Global Monitoring Report team. (2014). *Education for all global monitoring report: Teaching and learning: Achieving quality for all*. Retrieved from <http://www.uis.unesco.org/Library/Documents/gmr-2013-14-teaching-and-learning-education-for-all-2014-en.pdf>
3. e.g. UK Department of Business, Innovation and Skills. (2014). *The benefits of higher education participation for individuals and society: Key findings and report*. London: BIS. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/254101/bis-13-1268-benefits-of-higher-education-participation-the-quadrants.pdf; Tremblay, K. and Mangeol, P. (2014). *OECD Perspectives: higher education key to a more fulfilling career and life*. Paris: OECD. Retrieved from <http://www.qualityoflifeobserver.com/content/oecd-perspectives-higher-education-key-more-fulfilling-career-and-life>
4. UNESCO. (2015). The global goals for sustainable development. Retrieved from <http://www.globalgoals.org/global-goals/quality-education/>
5. OECD. (2013). *OECD skills outlook 2013: First results from the survey of adult skills*. Paris: OECD Publishing. Retrieved from <http://dx.doi.org/10.1787/9789264204256-en>
6. UNESCO. (2011). International standard classification of education ISCED 2011. Retrieved from <http://www.uis.unesco.org/Education/Documents/isced-2011-en.pdf>
7. A description of how the UNESCO gender parity index is calculated can be found at <http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=9>. Current gender parity index data for enrolment in tertiary education can be found at [http://data.uis.unesco.org/?queryid=142;viewIndicator%20Gross%20enrolment%20tertiary%20education%20gender%20parity%20index%20\(GPI\)](http://data.uis.unesco.org/?queryid=142;viewIndicator%20Gross%20enrolment%20ratio%20tertiary%20education%20gender%20parity%20index%20(GPI)).
8. OECD. (2015). *Education at a glance 2015*. Retrieved from: http://www.oecd-ilibrary.org/education/education-at-a-glance-2015_eag-2015-en
9. Only 18 of the 24 countries feature in this category on the map; for six countries data are not available on participation by gender via the UNESCO Gender Parity Index; SEDLAC (CEDLAS and The World Bank). (2016). SEDLAC database. Retrieved from <http://sedlac.econo.unlp.edu.ar/eng/index.php>
10. Hauschildt, K., Gwosć, C., Netz, N., & Mishra, S. (2015). *Social and economic conditions of student life in Europe: EUROSTUDENT V 2012–2015 | Synopsis of indicators*. Germany: DZHW.
11. This 'Draft for Discussion' report by Béatrice d'Hombres and Phuong Nguyen-Hoang (2011) can be accessed at <http://go.worldbank.org/QVFQ0QVCL0>

12. For 65 countries the most recent data were from 2014, whilst for the remainder the most recent data were from 2012 or 2013.
13. OECD. (2015). *Education at a glance 2015*. Retrieved from: http://www.oecd-ilibrary.org/education/education-at-a-glance-2015_eag-2015-en
14. European Commission/EACEA/Eurydice. (2015). *The European higher education area in 2015: Bologna process implementation report*. Luxembourg: Publications Office of the European Union. Retrieved from http://bologna-yerevan2015.ehea.info/files/2015%20Implementation%20report_20.05.2015.pdf
15. This 'Draft for Discussion' report by Béatrice d'Hombres and Phuong Nguyen-Hoang (2011) can be accessed at <http://go.worldbank.org/QVFQ0QVCL0>
16. Atuahene, F., & Owusu-Ansah, A. (2013). A descriptive assessment of higher education access, participation, equity, and disparity in Ghana. *SAGE Open*, 3(3). <http://dx.doi.org/10.1177/2158244013497725>
17. Zhao, X. (2016, April 8). China has 1 in 5 of all college students in the world: Report. *China Daily*. Retrieved from <http://www.chinadaily.com.cn/>
18. Li, H.B., Loyalka, P., Rozelle, S., Wu, B.Z., & Xie, J.Y. (2014). Unequal access to college in China: How far have poor, rural students been left behind?. *China Quarterly*.
19. Tilak, J. (2015). How Inclusive is Higher Education in India? *Social Change*, 45(2), 185–223. <http://dx.doi.org/10.1177/0049085715574178>
20. European Commission/EACEA/Eurydice, 2014. *Modernisation of higher education in Europe: Access, retention and employability 2014*. Eurydice Report. Luxembourg: Publications Office of the European Union. <http://dx.doi.org/10.2797/72146>
21. Hauschildt, K., Gwosć, C., Netz, N., & Mishra, S. (2015). *Social and economic conditions of student life in Europe: EUROSTUDENT V 2012–2015 | Synopsis of indicators*. Germany: DZHW.
22. Clancy, P., & Goastellec, G. (2007). Exploring access and equity in higher education: Policy and performance in a comparative perspective. *Higher Education Quarterly*, 61(2), 136–154. <http://dx.doi.org/10.1111/j.1468-2273.2007.00343.x>
23. Zago, M.A. (2016, July 7). Latin America University Rankings 2016: Latin America should make a virtue of its diversity. *Times Higher Education*. Retrieved from <https://www.timeshighereducation.com/world-university-rankings/latin-america-university-rankings-2016-latin-america-should-make-a-virtue-of-its-diversity>
24. More information on the work of the Council on Higher Education and their recent publications can be accessed via <http://www.che.ac.za/>.

25. e.g. UNHCR. (2015). *Syrian refugee arrivals in Greece: April-September 2015*. Retrieved from <https://data.unhcr.org/mediterranean/download.php?id=248>
26. Howe L.D., Galobardes B., Matijasevich A., Gordon D., Johnston D., Onwujekwe O., et al. (2012). Measuring socio-economic position for epidemiological studies in low- and middle-income countries: A methods of measurement in epidemiology paper. *International Journal of Epidemiology*, 41(3), 871–86. <http://dx.doi.org/10.1093/ije/dys037>
27. Kingdon G., Little, A., Aslam, M., Rawal, S., Moe, T., Patrinos, H., Beteille, T., Banerji, R., Parton, B. and Sharma, S.K. (2014). *A rigorous review of the political economy of education systems in developing countries – final report*. London: DfID. Retrieved from <https://eppi.ioe.ac.uk/cms/Portals/0/PDF%20reviews%20and%20summaries/Political%20economy%202014Kingdon.pdf?ver=2014-04-24-141259-443>
28. e.g. Hazelkorn, E. (2015). *Rankings and the reshaping of higher education: The battle for world-class excellence*. London: Palgrave MacMillan; Marginson, S. (2010). *Global comparisons and the university knowledge economy*, in L. Portnoi et al. (Eds.). *Higher education, policy, and the global competition phenomenon*. New York: Palgrave Macmillan.
29. See also Salmi, J., & Bassett, R. (2012). *Opportunities for all? The equity challenge in tertiary education*, Salzburg Global Seminar. Retrieved from http://www.salzburgglobal.org/fileadmin/user_upload/Documents/2010-2019/2012/495/Session_Document_OpportunitiesforAll_495.pdf
30. "People who graduate with pass-average degrees" refers to students whose work is of a minimally acceptable standard throughout their higher education programme.
31. e.g. HEFCE/OFFA. (2014). *National strategy for access and student success in higher education*. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/299689/bis-14-516-national-strategy-for-access-and-student-success.pdf.; Note also the development of 'whole dataset' thinking in the United States through the work of Rorison and Voight. See Rorison, J., & Voight, M. (2015). *Mapping revisited: A second look at the postsecondary data domain*. Retrieved from http://www.ihep.org/sites/default/files/uploads/postsecddata/docs/resources/mapping_revisited_final.pdf
32. UK Department for Education. (2016). *Employment and earnings outcomes of higher education graduates: Experimental data from the longitudinal education outcomes (LEO) dataset*, SFR36/2016, 4th August 2016. London: Department for Education. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/543794/SFR36-2016_main_text_LEO.pdf
33. Barber, M. (2015). *How to run a government so that citizens benefit and taxpayers don't go crazy*. London: Penguin Books.
34. UNESCO. (2016). *Sustainable development data digest: laying the foundation to measure sustainable development goal 4*. Retrieved from <http://www.uis.unesco.org/Education/Documents/uis-sdg4-digest-2016.pdf>

35. Ganzglass, E. (2014). *Scaling "stackable credentials": Implications for implementation and policy*. Retrieved from Center for Law and Social Policy website: <http://www.clasp.org/resources-and-publications/files/2014-03-21-Stackable-Credentials-Paper-FINAL.pdf>
36. e.g. Republic of South Africa. (2013). *White paper for post-school education and training*. Pretoria SA: Department of Higher Education and Training; Coughlan, S. (2016, January 2). India is top target for online universities. *BBC News online*. Retrieved from <http://www.bbc.co.uk/news/business-35296872>
37. e.g. Bastedo, M.N. & Gumpert, P.J. (2003). Access to what? Mission differentiation and academic stratification in U.S. public higher education. *Higher Education*, 46 (3), 341–359. <http://dx.doi.org/10.1023/A:1025374011204>; Thomsen, J.P. (2015). Maintaining inequality effectively? Access to higher education programmes in a universalist welfare state in periods of educational expansion 1984–2010. *European Sociological Review*, 31(6), 683–696. <http://dx.doi.org/10.1093/esr/jcv067>
38. Employers value international student experience: QS Report. *Top Universities*. Retrieved from <http://www.topuniversities.com/student-info/careers-advice/employers-value-international-student-experience-qs-report>
39. Brooks, R., & Waters, J. (2011). *Student mobilities, migration and the internationalization of higher education*. London: Palgrave Macmillan.
40. OECD. (2015). *Education at a glance 2015*. Retrieved from: http://www.oecd-ilibrary.org/education/education-at-a-glance-2015_eag-2015-en
41. Only 18 of the 24 countries feature in this category on the map; for six countries data are not available on participation by gender via the UNESCO Gender Parity Index; SEDLAC (CEDLAS and The World Bank). (2016). SEDLAC database. Retrieved from <http://sedlac.econo.unlp.edu.ar/eng/index.php>
42. Hauschildt, K., Gwosć, C., Netz, N., & Mishra, S. (2015). *Social and economic conditions of student life in Europe: EUROSTUDENT V 2012–2015 | Synopsis of indicators*. Germany: DZHW.
43. This 'Draft for Discussion' report by Béatrice d'Hombres and Phuong Nguyen-Hoang (2011) can be accessed at <http://go.worldbank.org/QVFQ0QVCL0>
44. OECD (2015). *In it together: Why less inequality benefits all*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264235120-en>
45. Arum, R., Gamoran, A., & Shavit, Y. (2007). *More inclusion than diversion: Expansion, differentiation and market structure in higher education*. In Y. Shavit, R. Arum, and A. Gamoran (Eds.). *Stratification in higher education: A comparative study*. Stanford: Stanford University Press; Liu, Y., Green, A., and Pensiero, N. (2016). Expansion of higher education and inequality of opportunities: A cross-national analysis. *Journal of Higher Education Policy and Management*, 38 (3), 242–263. <http://dx.doi.org/10.1080/1360080X.2016.1174407>

46. Liu, Y., Green, A., & Pensiero, N. (2016). Expansion of higher education and inequality of opportunities: A cross-national analysis. *Journal of Higher Education Policy and Management*, 38 (3), 242-263. <http://dx.doi.org/10.1080/1360080X.2016.1174407>
47. The lower the number of cases, the higher the Pearson value has to be for statistical significance.
48. UNESCO. (2016). *Sustainable development data digest: laying the foundation to measure sustainable development goal 4*. Retrieved from <http://www.uis.unesco.org/Education/Documents/uis-sdg4-digest-2016.pdf>





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