Indicators of Higher Education and the Public Good in Africa: A Dashboard Approach

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Abstract

Indicators and metrics have gained increasing prominence in international higher education in recent years, and global rankings have become a powerful force in shaping ideas of what the university is and should be. Yet these measures do a poor job of capturing the broad role of the institution, and particularly in recognising its actions in promoting the public good and addressing inequalities. African higher education institutions have struggled to perform well in the conventional rankings, whose indicators rely on extensive resources for high-level research. This article explores the possibilities of alternative metrics for understanding the public good contribution of universities in the context of four African countries: Ghana, Kenya, Nigeria and South Africa. After assessing the shortcomings of the existing indicators and metrics, and the challenges of the availability of data, it puts forward a dashboard approach as a possible new model. Dashboards have the advantage of avoiding the conflation of diverse qualities of importance and allow different profiles of an institution to be compared. The article proposes six main elements for the dashboard: solidarity with society, equitable access and deliberative space (which correspond to the intrinsic notion of public good) and graduate destinations, knowledge production and community engagement (which correspond to instrumental notions). Finally, the challenges of implementing public good metrics in practice are discussed.

Keywords: Education indicators, quality of higher education, higher education policy, public good, university rankings

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Résumé

Les indicateurs et les métriques ont gagné en importance dans l'enseignement supérieur international ces dernières années, et les classements mondiaux sont devenus une force puissante pour façonner les idées sur ce qu'est et devrait être l'université. Pourtant, ces mesures ne parviennent pas à saisir le rôle général de l'institution, et en particulier à reconnaître ses actions dans la promotion du bien public et la lutte contre les inégalités. Les établissements d'enseignement supérieur africains ont du mal à bien performer dans les classements conventionnels, dont les indicateurs reposent sur des ressources importantes pour la recherche de haut niveau. Cet article explore les possibilités de mesures alternatives pour comprendre la contribution des universités au bien public dans le contexte de quatre pays africains : le Ghana, le Kenya, le Nigeria et l'Afrique du Sud. Après avoir évalué les lacunes des indicateurs et métriques existants, et les défis de la disponibilité des données, il propose une approche de tableau de bord comme nouveau modèle possible. Les tableaux de bord ont l'avantage d'éviter l'amalgame de diverses qualités d'importance et permettent de comparer les différents profils d'une institution. L'article propose six éléments principaux pour le tableau de bord: solidarité avec la société, accès équitable et espace délibératif (qui correspondent à la notion intrinsèque de bien public) ; et les destinations des diplômés, la production de connaissances et l'engagement communautaire (qui correspondent à des notions instrumentales). Enfin, les défis de la mise en œuvre de mesures de bien public dans la pratique sont discutés.

Mots-clés : indicateurs de l'éducation, qualité de l'enseignement supérieur, politique de l'enseignement supérieur, bien public, classement des universités

Introduction

The dawning of the age of data has represented a dilemma for educational policy, research and practice. On the one hand, it has heralded an era of rational decision-making on the basis of transparent information about the effectiveness of different interventions. In this way, the Sustainable Development Goals (SDGs) agreed upon in 2015 were accompanied by a series of 169 targets by which progress could be measured and accountability ensured. On the other hand, it is broadly (if not universally) acknowledged that not all that is valuable in education can be represented by numerical indicators, not to mention the challenges of collecting this data in practice. The danger of 'what can be counted' squeezing out 'what counts' is very real.

Concerns about this emphasis on measurement have been exacerbated by the ease with which these indicators[1] can be converted into rankings, thereby fostering competition between countries and institutions and

creating an unhealthy culture of winners and losers, of adulation and shame. In higher education, these rankings have been particularly prominent, and have led to a wholesale shift in higher education policy, in many countries, in order to insert a few of the nation's universities into the top 200.

Rankings form part of a broader trend towards quantification, through which new kinds and categories of things are created (Espeland and Stevens 2008). Quantification has become so commonplace that the meanings of the units under consideration are often taken for granted. Sociologists such as Desrosieres (2001) and Espeland and Stevens (2008) have explored how numbers create realities: for example, distinctions are made and institutionalised in a census between who is part of the polity and who is not, involving quantifications and classifications of citizenship relating to race, gender, education and so on. This numerical device has decisive implications, determining the rights and social protections that citizens and non-citizens are afforded. An extension of this problem is the determination of whose labour counts as a productive contribution to the polity under the census. Women's work has been underreported in the past, and continues to be in the present (Hatton and Bailey 2001).

These tendencies are clearly visible in higher education, where numbers determine what quality is and which institutions are rewarded or not. Critical responses to these developments have included a rejection of all rankings, indices and indicators on the basis that they distort the true value of the educational process, leading to performativity, punishment of the already disadvantaged and the undermining of qualitative evaluation. Yet, some have advocated for engagement rather than delinking with measurement. In the words of Unterhalter (2018: 5), this represents, 'a recognition of the need to get on the metric bus, but also a wish to change the direction that bus is going'.

This article assesses the extent to which this approach might be fruitful in relation to ideas of the public good in higher education. It explores the possibilities of identifying an indicator or indicators of the public role and public benefits of higher education in Africa, and collecting the required information in practice. We recognise that this task is fraught with difficulties and contradictions, not least because it places in tension the need for the contextualisation of ideas of public good – a key aim of the broader research project within which this study is located – and the need for the comparability of an indicator.

This research forms part of the 'Higher Education, Inequality and the Public Good in Four African Countries' project, which explored conceptualisations of public good in Ghana, Kenya, Nigeria and South

Africa. The four countries were chosen for comparison because, while each is distinctive, they resemble each other in some ways. All use English widely and share experience of British colonial rule, which has influenced their higher education systems and the forms of higher education found there, although South Africa has distinctive characteristics from the legacy of apartheid. They also have very high levels of wealth and income inequality. While these similarities make comparability possible, the four countries differ, too, in their cultures and histories and with regard to the form and extent of initiatives to widen participation in and improve quality of higher education. While the broader project involved extensive qualitative data collection from various higher education stakeholders, this article is primarily theoretical, drawing on secondary literature on rankings and indicators and drawing out the implications for the countries in question. The article does not aim to put forward a definitive indicator, but to assess the possibilities and analyse the conditions that affect the task. In doing so, it argues that a dashboard model of indicators is the most promising way forward, in its ability to provide a range of relevant information without falsely conflating or ranking it.

Data collected as part of the broader project indicated that stakeholders across the higher education system in the four countries considered that the current rankings were inadequate in valuing the diverse roles of higher education and failed to recognise the significant contribution made by higher education institutions in Africa. They also endorsed attempts to develop new indicators relating to the public good, as discussed in this article. Nevertheless, this study is fully aware of the risks associated with such a task: first, the narrowing of a conception of the public good through focusing only on what can easily be measured; second, the spurring of new forms of competition between higher education institutions around any indicators adopted; and third, encouragement of performativity, in focusing attention on the targets themselves rather than the substantive work that underpins them.

The discussions below will draw on the important distinction made in the broader project (see Unterhalter et al. 2017) between *intrinsic* and *instrumental* versions of the public good in higher education. Much of the attention in recent literature (McMahon 2009; Oketch et al. 2014) has been on the societal impact of universities – for example, the collective economic benefit through externalities and tax revenue, improvements in health and nutrition, poverty reduction and strengthening of democracy. Yet, there is also a form of public good in higher education that is internal to its own functioning. Universities can serve as a public sphere (Marginson 2011) and instantiate the

space for dialogue and encounters across diversity that constitute public good itself. In order to fulfil this role, the question of access to higher education is crucial. Following Locatelli's (2017) conception, we need to pay attention to higher education *as* a public good, as well as *for* the public good. As will be argued further below, indicators of higher education and the public good need to acknowledge both intrinsic and instrumental dimensions.

Rankings

Rankings play an influential role in the higher education landscape, shaping the work of administrators and researchers and affecting the decisions of students and parents regarding their choice of institution, programme, etc. While national rankings are more numerous, the dominant players are global university rankings (Hazelkorn 2011, 2015). The hegemony of the elite is so entrenched that the top 100 places in one of the most influential rankings (Quacquarelli Symonds [QS]) are monopolised by only twenty countries – all of them located in Europe, North America, East Asia or Australasia, with Argentina being the only South American nation to feature (McCowan 2019).

Other influential global rankings are the Shanghai Academic Ranking of World Universities (ARWU) and the Times Higher Education (THE) (Marope and Wells 2013). Another significant ranking is the Webometrics World Ranking of Universities, an offshoot of bibliometrics, which measures the amount of web content that a university puts out and the impact of these outputs in terms of the number of citations that these receive. Quite unlike the other rankings, it includes most universities in the world (roughly 30,000) rather than a few hundred or thousand (Webometrics 2019).

Rankings compare higher education institutions using a range of indicators, such as citations, research funding, entry standards, student satisfaction, etc., to which a score is assigned and the scores are often aggregated into a single-digit proxy (THE 2019). League tables present numbers on the overall quality of ranked universities, ordering them from highest to lowest scoring. It is a known fact that the choice of indicators comes down to the judgement of each ranking organisation, therefore a lack of objectivity in the process is one of the biggest problems with this methodology (Hazelkorn 2014).

According to Marope, Wells and Hazelkorn (2013), proponents of international university rankings believe that they offer us a 'common yardstick' with which to compare universities, much as we compare economies. And yet, despite all the differences in types of institutions, rankings compare without distinguishing between types (Sowter 2013). It is argued that countries such

as the USA and the UK, which have the highest number of top-ranked universities, do not provide for social mobility. According to data reported by the Institute for Fiscal Studies (IFS 2021), students from low-income households who are enrolled in England's most selective universities, such as the Russell Group, experience good labour market outcomes. However, this demographic makes up only 2.6 per cent of the Russell Group student population, making for a low mobility rate (IFS 2021).

Furthermore, it is not obviously the case that universities have to be ranked. While they can be compared along a vertical spectrum, the horizontal spectrum is better suited to account for the diversity of institutions – showing differences in terms of size, function, age, etc. Most university rankings, unfortunately, construct measures of vertical diversity, backgrounding the importance of horizontal diversity between universities (Kehm 2016). This leads to the exclusion of most universities in regions such as Africa and Latin America.

There are three main problems that must be elaborated in order to demonstrate the processes by which rankings lead to exclusion and inequality. The first is that most rankings are characterised by forms of weighting that are not clearly related to what they claim to measure (i.e. quality). The second is that ranking weights tend to be heavily skewed towards research. And the third is that rankings have perverse effects that change the logic of the academic profession.

Regarding the first problem, rankings claim to capture the quality of universities when in reality their measures exclude critical aspects of quality, namely: long-term learning outcomes, student happiness on campus, graduate satisfaction, etc. While indeed these are difficult to measure, ranking systems fall into the pitfalls that they do precisely because they measure the measurable, not necessarily the meaningful (Marope, Wells and Hazelkorn 2013). Although the OECD lauds rankings for their transparency (Tremblay, Lalancette and Roseveare 2012), rankings do not tell us much about quality – for example, many higher education institutions make a developmental contribution to their communities and countries, and yet are excluded from the most elite rungs of global higher education.

The second problem is that most global ranking systems have a clear tendency towards research. The QS world university rankings looks at six performance indicators related to teaching, employability and internationalisation (QS 2019b). For academic reputation, it conducts a global survey of academics, asking them to identify what they believe are the leading institutions in fields of expertise that they feel they are qualified to comment on; another global survey is conducted on where employers think

the best graduates in their sector come from (QS 2019a). The THE rankings, by comparison, with a total of five indicators, rank teaching based on, among other things, a reputation survey (15 per cent), staff-to-student ratio (4.5 per cent), institutional income (2.25 per cent) and industry income (2.5 per cent) (THE 2019). Finally, the ARWU (or Shanghai Ranking) uses six indicators to measure, among other things, academic papers published in the prestigious journals *Nature* and *Science* (weighted 20 per cent), papers indexed in the Science Citation Index-Expanded and Social Science Citation Index (weighted 20 per cent), and per capita performance (weighted 10 per cent) (ARWU 2019). Because most universities in Africa may not perform well in terms of research, attract enough international faculty or score well in any of the other areas emphasised in global rankings, there is no place for most of them in the race for the top spots (Teferra 2017).

Finally, there are several possible perverse effects of rankings – for example, academic staff may have contractual obligations linked to rankings results. Hazelkorn (2011) found that arts departments that failed to contribute to rankings outcomes lost financial resources to sciences departments. This may pull academic staff from teaching towards practices like publication slicing.

The criticisms raised here have inspired work towards metrics that give a better picture of the contributions that universities make in different societies. While their merits are debatable, alternative rankings are on the rise. The next section examines four alternative approaches: benchmarking, classification, multidimensional rankings, and finally, system-level rankings.

The description of university rankings and how they work illustrates that they say little, if anything, about the overall performance of higher education systems and their wider socio-economic benefits. Some new rankings have emerged, which focus on specific aspects that have been ignored in the general rankings – such as contribution to the SDGs in the Impact Rankings, and the People and Planet University League of environmental and ethical performance. Alternative approaches like benchmarking allow comparisons of systems from countries at similar stages of development, in similar types of regions of the world, or with similar political contexts (Salmi and Saroyan 2007). Such an approach offers an understanding of the 'wider social benefits' of higher education by looking at 'all missions' of universities to include 'regional engagement' as an indicator. The biggest strength of benchmarking is said to be the more holistic measure of the university, its quality and its impact (OECD 2017).

Like benchmarking, classification is also considered a more 'holistic approach' to assessing institutions. The Carnegie Foundation's elective 'Classification on Community Engagement' is considered more holistic

because it considers the university activities that are related to the university's 'Third Mission', i.e. outreach (Carnegie Classification 2019). The Carnegie Classification lists universities according to three categories: outreach activities and partnerships, curricular engagement, and a third classification that straddles both these categories (Carnegie Classification 2019). Institutions are required to self-report by filling out a survey to provide data on their community engagement and hence obtain their classification.

Then, there are multidimensional rankings, like the European Union's U-Multirank. Some of this system's features include its user-driven format (individuals or stakeholder groups can rank according to their priorities), and its multidimensional approach – for example, it allows for comparability between universities with similar missions, and it offers a multilevel analysis that can be used at institutional, disciplinary or departmental level (U-Multirank 2019),[2] which gauges systems on the basis of four dimensions: resources, environment, connectivity and output. This approach leads to results that are distinct from institutional-level rankings, such as putting Sweden and Denmark in the top five, despite having few high-ranking institutions.

Current Indicators for African Universities

African higher education institutions have proliferated significantly. Before 1960, only eighteen of the forty-eight countries on the continent at the time had universities (Sawyerr 2004: 4). More than sixty years later, the continent has an estimated 1,703 institutions (688 public and 1,015 private) between its fifty-four countries (IAU WHED 2021). However, fast growth in quantity has left much to be desired in quality as hyper-massification increasingly burdens a frail system. Indeed, African universities are left on the margins because most are not research universities (Cloete et al. 2011), but an additional limitation is the data gap that constrains the possibilities of higher education management.

Data Availability

Barely a sprinkle of universities in Africa make the global ranking lists. Only two African universities, both in South Africa, featured in the top 200 of the THE rankings for 2020: the University of Cape Town is Africa's top university, sitting at 136, while the University of the Witwatersrand is rated at 194 (THE 2019). The same two feature in the top 300 of the ARWU's 2020 ranking (ARWU 2019).

One of the limitations that prevent African universities from participating in these rankings is a lack of reliable data because of costs and other logistical

challenges. Teferra (2015) points out that while the continent has been at work exploring the possibility of an African ranking system, the striking reality is that data collection and management remain problems, to the extent that it is not known how many universities there are on the continent.

According to the World Bank Statistical Capacity Indicator (2016), Nigeria scored 67.8 per cent in terms of statistical capacity, higher than the sub-Saharan Africa average. Notwithstanding the relatively strong capacity, data collection and processing in Nigeria has faced significant challenges in relation to dissemination and archiving, constraining decision-making (World Bank 2016).

In South Africa, the data gap is less pronounced. The issue drew much attention at the onset of democracy, in 1994, but has since improved. In 1997, the White Paper on an Integrated National Disability Strategy highlighted the severe lack of data related to people living with disabilities in South Africa – data necessary for government to design, plan and implement strategies in response to the needs of this group (Howell 2003). The 'data revolution' has also become central in the debates surrounding the SDGs and African economic development. However, more recently, the limitations in good-quality data in Africa continue to affect its ability to report on SDG outcomes.

That said, there are efforts among international statistical agencies to support African data collection and management in order to make partial, if not full, sense of the continental higher education landscape. The available statistics for the four countries studied here are provided in the section that follows.

Higher Education Indicators

In relation to higher education specifically, obtaining comparable international indicators can be a challenge on account of differences in definitions of what counts as higher or tertiary education. This is particularly so as to whether technical and vocational institutions are included, as well as differences in the age ranges used to calculate net and gross enrolment ratios. As argued by Atherton, Dumangane and Whitty (2016), attempts to understand and monitor inequities of access globally are severely hampered by inconsistencies and unreliability of data.

Nevertheless, the creation of the World Inequality Database on Education (WIDE) – a collaboration of the UNESCO Institute for Statistics (UIS) and the Global Education Monitoring Report – has led to great improvements in this area, supplementing the indicators already held by UIS. The following section presents some of the indicators held in these international databases.

The most commonly utilised indicators are the figures on gross enrolment ratio (GER): while the net enrolment ratio, which assesses access rates for the 'appropriate' age group, provides a more precise gauge of coverage, it is less often available, and comparisons between countries are most often made using the GER, which includes overage and underage students. For the countries in our study the figures are as follows (data are not available for Nigeria):

Table 1: Gross Enrolment Ratios in Tertiary Education

	GER %
Ghana	15.7
Kenya	11.5
South Africa	22.4
Nigeria	No data

Source: UNESCO Institute of Statistics, 2020
Note: Figures for Ghana are from 2018, and for Kenya and South Africa from 2017. Percentages to one decimal place.

These figures are low in relation to the global average of 38 per cent, but are significantly higher than the average for sub-Saharan Africa, of 9 per cent. These enrolment ratios are important indicators of the availability and accessibility of higher education places, but in order to have a deeper understanding of equality of opportunity, it is important also to understand who takes up these places. To a large extent, the dramatic expansion of higher education in recent decades has privileged the middle classes and other advantaged groups (Marginson 2016; McCowan 2016).

Gender is one of the important variables in this regard, and has the most widely available disaggregated data. The gender parity index (GPI) – the number of females enrolled at a particular level of education, divided by the number of males – shows some striking disparities in the same three countries:

Table 2: Gender Parity Index in Tertiary Education

	GER %
Ghana	0.77
Kenya	0.74
South Africa	1.43

Source: UNESCO Institute of Statistics, 2020
Note: figures for Ghana are from 2018, and for Kenya and South Africa from 2017. Percentages to one decimal place.

Ghana and Kenya, therefore, show a significant underrepresentation of women in tertiary education, and South Africa has predominance of females. These figures should be seen in light of the overall global GPI of 1.14, which shows a larger number of females than males in tertiary education around the world. While the disparities are large in all cases, from a social justice perspective the barriers to women's access in Ghana and Kenya are particularly worrying on account of the greater difficulty that women face subsequently, in converting higher education into employment and other opportunities.

The WIDE database presents information on the attendance ratio (distinct from the GER as it gauges the percentage of eighteen- to twenty-two-year-olds who are attending higher education). Importantly, it disaggregates by a range of factors: gender, income, location (rural/urban), region, ethnicity and religion. In relation to location, for example, the three countries – as expected – show a marked disadvantage for rural areas (in this case, data for South Africa is not available).

Table 3: Higher Education Attendance Ratio, by Location

	Urban %	Rural %
Ghana	6	1
Kenya	17	7
Nigeria	15	3

Source: WIDE 2020

Note: Data from demographic and health survey (DHS) 2013 (Nigeria), DHS 2014 (Ghana), DHS 2014 (Kenya).

The diverging results obtained from different forms of measurement can be seen clearly here, as Ghana, which has a higher GER than Kenya according to UIS figures, is substantially lower on this attendance gauge. Disparities are also evident by income level.

Table 4: Higher Education Attendance Ratio, by income quintile

	Richest %	Rich%	Middle %	Poor %	Poorest %
Ghana	14	3	2	0	1
Kenya	26	11	8	4	2
Nigeria	24	10	3	1	1

Source: WIDE 2020
Note: Data from DHS 2013 (Nigeria), DHS 2014 (Ghana), DHS 2014 (Kenya)

With the exception of the anomaly of the figures for 'poor' and 'poorest' in Ghana (extremely low in both cases), as expected there is a clear correspondence between income level and chances of access, with the bottom two quintiles in all cases having extremely restricted chances. While all of the countries are highly unequal, Kenya fares slightly better in ensuring that poorer students have some measure of access to higher education.

The above tables provide crucial information on inequalities of access to higher education, on which policies might be built to overcome the barriers facing certain groups. Yet, inequalities of access are just one dimension of the public good in higher education. Indicators on other aspects are even harder to come by.

One area of potential interest is the distribution of higher education students across different disciplinary areas that often correspond closely to professional activities after graduation. These figures are held by UIS for groupings of subjects (data for Nigeria is not available).

Table 5: Distribution of Enrolment by Field of Study – Tertiary Education

	Education %	Arts and humanities %	Social sciences, journalism and information %	Business administration and law %	Natural sciences, mathematics and statistics %
Ghana	31.9	8.8	4.2	28.3	4.2
Kenya	23.9	8.3	6	33.4	7
South Africa	19.3	5.1	15.5	32.2	7.3

	ICT %	Engineering manufacturing and construction%	Agriculture, forestry, fisheries and veterinary %	Health and welfare %	Services %	Unspecified %
Ghana	3.2	9	1.9	8.7	0.9	3.5
Kenya	5.3	4.2	2.8	6	1.8	1.5
South Africa	3.2	8.1	2	6.7	0.4	0.1

Source: UNESCO Institute of Statistics, 2020
Note: The figures are indicative only as taken from the latest year available, hence do not add up to a hundred. Percentages to one decimal point.

While the figures above are only indicative, they do show some interesting trends. Enrolments in all three countries are heavily weighted towards the professional courses of education, business and law, with low proportions of students in the academic areas of natural sciences, mathematics, arts and humanities. Given the importance of agriculture in the economies of

these countries, there is a surprisingly small percentage of students in the 'agriculture, forestry, fisheries and veterinary' category, and a number of African countries have been lamenting the decline in number of students in these areas. While the conclusions to be derived for the public good are not straightforward, most would agree that all disciplinary areas are needed, so maintaining balance between them may be the most pressing goal.

Much use, therefore, can be made of disaggregating enrolments by disciplinary area. Nevertheless, to understand more closely the impact of higher education on the public good, it would also be necessary to separate out courses within these broad disciplinary areas (which might have quite different implications). Moreover, and more challengingly, we would need to know what kinds of employment graduates are moving onto – whether in the public or private sector, whether in the area corresponding to the university course or not – and the extent of their commitment to the public good within their employment.

A final area of relevance to the public good in which indicators are available is funding. Absolute levels of funding for tertiary education, and expenditure per student, of course differ markedly on account of the wealth levels of the countries in question. Yet, as shown in Table 6, viewing funding in relation to GDP can be revealing:

Table 6: Government funding of tertiary education as a percentage of GDP

Ghana	0.81%
Kenya	0.69%
South Africa	0.94%

Source: UNESCO Institute of Statistics, 2020.
Note: figures for Ghana are for 2014, for Kenya, 2015 and for South Africa, 2018. Figures for Nigeria are not available.

The world average is not available for this indicator, but for specific countries the range for 2017 was from 0.16 per cent for Mongolia up to 2.74 per cent for Sierra Leone, with above 1 per cent of GDP for the most part signalling healthy investment. The figures for Ghana, Kenya and South Africa indicate a fair level of public commitment to the sector, but fall short of what would be needed for real transformation. In conjunction with this indicator, it would also be important to look at figures for household funding of tertiary education, as private funds are significant in all of these countries, yet unfortunately this indicator is not available for the countries in question.

The above is a non-exhaustive list of the indicators that are readily available, and which can be compared internationally. Some others are the proportion of enrolments in public and private institutions, distribution of students between different ISCED levels, or between undergraduate and graduate studies, and the number of publications in internationally indexed journals. These indicators provide us with some pointers as to the public good role of higher education, though leave us with as many questions as they do answers.

We have explored how far alternative metrics might be feasible, by looking at data that has already been collected, and indicators that are made available by international agencies, such as the UIS. However, there are many gaps in relation to the public good, in terms of the *intrinsic* and *instrumental* dimensions, for which limited data is available. It is necessary to supplement these existing data sets with further forms of data, whether with what is already held at the local level by institutions, or with new data collected specifically to create public good indicators. The following section will assess these gaps, and discuss the ways in which a dashboard may provide some form of response.

The Dashboard

To begin the work of constructing a dashboard we elaborate some of the problems with measuring the university's public good role given the complexity of universities as multifunctional institutions, the absence of counterfactuals and problems of data availability and reliability. Thereafter, we define the dashboard approach, and then construct the proposed dashboard by populating it with six themes, each defined by indicators drawn from the quantitative measures presented above and the qualitative notions of the public good from the data collected through the project. The themes are not determinate, and can vary. This variance will likely be the function of institutional or national context here framed in terms of conditions of possibility and forms of social contract.

Two main things emerge from the project: first, that context should frame the way in which indicators are defined; second, that the mediation between the university or university system and public spheres determines the public good contribution of the university to the societal whole. The main forms of the public good that emerged from the project data cover three areas. The indicators that feature in the dashboard can be understood as reflecting one of these three areas, namely:

1. Fostering care and nurture in the university (through the enactment of solidarities that might improve working and living conditions on campuses).
2. Ensuring public access (through funding or open gates).
3. Serving society as a whole.

A dashboard is a graphic representation of indicators, which presents a variety of institutional or national performance data through an information management system. It shows the indicators 'at a glance', also revealing the direction that the indicators are moving in while providing several other broad contextual pieces of information. A dashboard offers a practical way of looking at data across countries, as well as organising qualitative and quantitative data. Unlike existing metrics, which focus on a single composite indicator, the dashboard gives fuller information because it tries to address some of the shortcomings of indicators and indices which, respectively, tend to be one-dimensional or tend to conflate diverse elements by retaining a range of dimensions in an easily readable format.

Constructing the Dashboard

In determining which indicators should be selected for representing the public good role of higher education, there are two primary considerations. The first relates to a decision regarding which areas of the university's activities to focus on. This is a particularly complex decision, given the multifaceted nature of the institution's work across the areas of teaching, research, community engagement and more. Furthermore, there are questions surrounding counterfactuals given that some of the potential functionings of institutions may not (yet) be realised. In assessing graduate destinations, for example, we need to know what graduates *could have done* as well as what they actually *did*. For example, we cannot treat equally the case of a woman who could have obtained high-level employment but chose to be an unpaid sculptor, with another who was unable to secure employment because of labour market discrimination (even though they might both appear as 'not employed' in the data). This kind of granularity is only possible with in-depth qualitative work, and is not possible to represent in large-scale indicators.

The second question is whether it is possible and viable to collect and report information pertaining to those characteristics. We have already seen above the difficulties of data collection and reliability of data, even with the most prominent indicators at the international level. To be sure, some pragmatic decisions need to be taken to temper the ideal of what we would like to gauge in understanding the contribution of higher education to the public good.

We undertake this task of constructing the dashboard cognisant that there are deep philosophical contestations regarding what the public good is, one of the major issues being the blurred line between public and private. Anticipating that we cannot overcome these old and intractable contestations in a single project, however, we take advantage of the opportunities presented to formulate a working definition of the public good.

For each African country, the *contextual framework* is mapped out in terms of two aspects: conditions of possibility and forms of social contract. Conditions of possibility are the factors that stakeholders in each higher education system believe need to be addressed in order for higher education to function in a way that enables it to contribute to the public good or to be recognised as a public good; these can be either internal or external (Unterhalter et al. 2019). Social contract, on the other hand, refers to the agreement among members of a society to co-operate towards certain social ends or benefits, through a commitment to higher education (ibid). What is key to understand is that the factors captured within these two concepts have catalysing effects that can equalise the stratification within university systems and within society through university systems. In other words, getting the conditions of possibility and the social contract right is the driver of public good change. Through these drivers of change, the communicative exchange between the public spheres and the relationality between them either facilitates or constrains the public good.

Figure 1 is a diagram of the proposed dashboard. Six themes are presented, three of them intrinsic and three of them instrumental, each with discrete indicators that may overlap. The data captured will vary. Some indicators may be represented quantitatively, others qualitatively, and some may be a combination of both. The data captured per theme will also cover a range of private and public outcomes enjoyed by individuals, small collectives or the whole of society, cutting across these public spheres. In these ways the indicator takes on a multidimensional and multiscalar form, with the context in each country foregrounded in terms of conditions of possibility and forms of social contract.

Let us take the conditions of possibility and social contract as given. The arrows that form a circular process illustrate the direction of the relationship between conditions of possibility, forms of social contract and the intrinsic and instrumental forms of the public good. As much as the conditions of possibility and the forms of social contract determine the possible public good in the university, so too does the university affect the extent to which conditions of possibility and forms of social contract can be altered. In other words, aspects of the relationship include feedback mechanisms that can either reproduce or disrupt the public good (leading to forms of public bad). With that, the next sections elaborate the details of the dashboard.
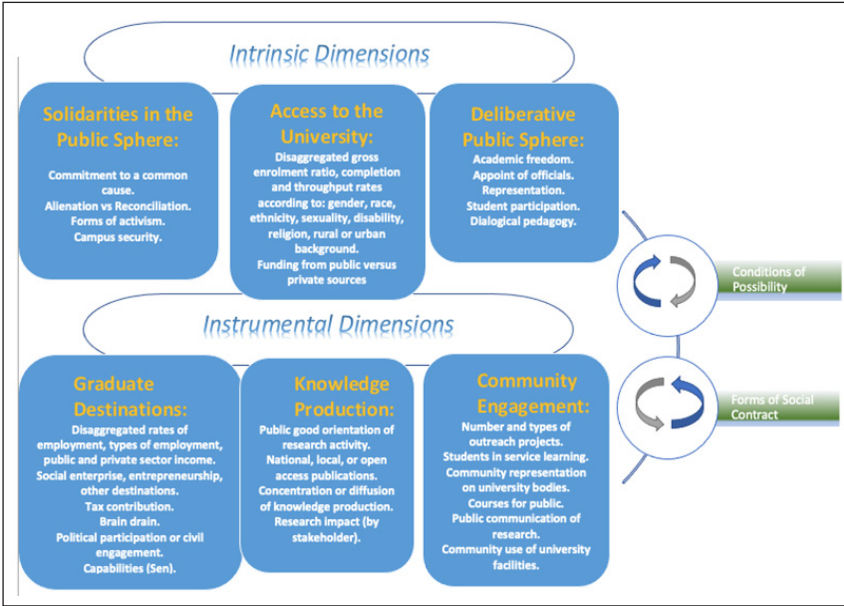
Figure 1: Public Good Dashboard

Beginning with the intrinsic dimensions, the first theme captures the 'solidarities in the public sphere'. The indicators therein are: institutional stratification; commitment towards a common cause; degree of alienation versus reconciliation (where issues of language policy can be highlighted); forms of activism; and campus security. Both quantitative and qualitative indicators can be employed here. For example, the degree of campus security can be reflected quantitatively using the number of safety-related incidents that are reported on the campus. In contrast, to capture perceptions regarding alienation and reconciliation might require a perception survey (qualitative data).

The next theme is that of 'access to the university'. The question of equity of access has already had some discussion in the above section concerning existing indicators. As noted, the four countries differ with regard to the form and extent of initiatives to widen participation in higher education. Although the expansion of access to higher education is a national policy goal in each country, the level of political support for realising this and the way in which inequalities affect access differ in each case. Thus, the equity of access dimension in the dashboard tries to bring in an expanded notion of access that incorporates specific social justice outcomes, considering such indicators as: disaggregated enrolment ratios in terms of race, ethnicity,

religion, proportion of students with disabilities, whether students are from rural or urban areas, etc. Most of these indicators would be reflected quantitatively, but again there may be room for perception surveys to get more detailed data on students' experiences given their religion or ethnicity, for example.

Finally, the 'deliberative public sphere' theme sits in close relation to the equity of access theme. This is because the feelings of alienation experienced by those in the university (captured in the solidarities theme) create the need for access to university structures through more inclusive processes in the appointment of officials, student representation, student participation and a dialogical pedagogy with a pluralism of ideas. This last point illustrates that none of the dimensions conceptualised here are intended to be thought about in mutually exclusive ways. A number of possible overlaps can be imagined because the many things that take place within the university and the number of challenges they raise cannot be separated out neatly. Some of the data captured for this theme would be quantitative – for example, student representation in terms of numbers by race, gender, etc.; some would be qualitative – for example, looking at some of the techniques used in the classroom to bring students into the teaching and learning process in a more participatory way.

The relationality between the three themes can be summarised as follows: solidarities in the public sphere shape the way that equity of access and deliberation arise within the university. It is hard to imagine students acquiring knowledge in a context of instability and violence. In this scenario it would seem inappropriate to tick a box that indicates that equity of access was achieved simply because students were formally enrolled in the institutions. Or, suppose that a university does not have a diverse enough mix of students from different ethnic and religious backgrounds – then, a deliberative space cannot exist in the absence of these sorts of pluralities.

Now we turn to the instrumental dimensions, where we propose three themes: graduate destinations, knowledge production and community engagement. These might be described as pathways through which the internal public spheres of the university interact with the broader external public spheres in society, forming some of that communicative exchange between the public spheres. The direction of this relationship is not a simple one-way process, but bidirectional.

Under the 'graduate destinations' theme, the indicators captured include social enterprise or entrepreneurship that graduates might be participating in, the tax contribution of these graduates and the capabilities they acquire (which then have an effect on society through lower crime rates,

improvements in health, etc.). Capabilities would be another qualitative indicator based on the sorts of perception studies that currently exist. In these studies, students are asked to identify the capabilities that they believe they should acquire or have acquired through their university education. Other indicators could be quantified.

Because graduate destinations are described in a number of surveys in relation to the reproduction of social inequalities, this dimension presents another opportunity to reveal the stratification within and between universities by showing how long graduates from less well-off families tend to remain unemployed after graduation or by showing the types of jobs (by status and income level) that they secure in the labour market. Another issue in relation to this is the problem of 'brain drain' in African contexts. The transnational nature of study and employment casts doubt on purely national influences and impacts, and hence requires us to acknowledge the necessarily global nature of the public good. This may be captured in the dashboard both in terms of the negative and positive aspects of brain drain. While brain drain may reduce the amount of highly skilled labour in a country or region, its positive aspects include the formation of diasporic networks between graduates in the home countries and those in host countries (Salmi and Salmi 2017).

For the second theme, knowledge production, the public good orientation of research and knowledge-sharing are among some of the more critical issues that key stakeholders raised. This primarily refers to whether research is responsive to local needs that are development-oriented. Some of the other indicators that we propose are not just concerned with the kind of research conducted, but also with who has access to research. The suggested quantitative indicator to reflect this is the number of open access publications that are made available to the external public.

Finally, the third theme, 'community engagement', is particularly significant since it is largely ignored in mainstream international rankings. Community engagement benefits both the community and the graduates themselves as the latter derive certain capabilities from giving back to and building the community public sphere. The indicators for this theme include: number of students in service-learning, and number of outreach programmes, among others. Both can be captured quantitatively, while members of the community can give their views regarding the impact of community engagement through a perception survey. Some of the debates worth highlighting here are the difficulty of defining the parameters of the community, how far they extend, who is brought into the structure of the community and who is excluded.

While each of these six areas is multifaceted and has a range of potential indicators, including figures for all of them would make the dashboard impractical in terms of data collection and unwieldy to use. Instead, a proxy for each may need to be chosen. This article does not attempt to select the specific proxies – which should be subjected to stakeholder debate – but the essential criteria for the proxy would be that it is an unambiguous example of the general category, is broadly comparable between contexts, and is viable in terms of data collection. Proxies cannot of course represent the whole of the category of which they are part, so are inherently limited. But, if well selected, they can provide a useful compromise between representing complexity and ensuring usability.

Conclusion

We argue, therefore, that a dashboard approach is the most appropriate for gauging the public good contribution of universities in Africa (and beyond). It avoids the conflation of the distinct elements and allows users to observe strengths and weaknesses in different areas. It also enables some qualitative and some quantitative measures across the various dimensions. For each of the six broad areas outlined above – solidarities, equity of access, deliberative space, graduate destinations, knowledge production and community engagement – a proxy may need to be selected, one that is practical in terms of collecting data but also adequate for representing the dimension as a whole (acknowledging that no proxy will be fully representative). While the information available internationally on equity of access (for example in the WIDE database) is crucial, it captures only one aspect of the public good, and therefore needs to be supplemented with others. The suggestions presented in the dashboard are a starting point in order to push thinking beyond the current limitations with respect to proxies and related datasets, and the extensive limitations of international rankings in their narrow understanding of quality, in fostering unhealthy competition, and as an impetus to performativity.

One chief limitation of the more prominent metrics applied today is their decontexualised character. With respect to the operationalisation of this particular dashboard, one possible way around this limitation is to have institutions provide self-reported data. Specifically, institutions may report on dimensions that are most relevant to the public good roles that they play. Furthermore, institutions are encouraged to self-report on the contextual factors that act upon the dimensions most relevant to them.

As outlined above, there are advantages to system-wide as well as institutional-level indicators and rankings. Indicators focusing on individual

universities can homogenise by intimating that all institutions need to display the same characteristics, and have the same areas of specialism and ethos. They also foster competition rather than co-operation. System-level indicators acknowledge that different institutions can play complementary roles within the system, and cater for student heterogeneity as well as the diverse needs and interests of society as a whole. In encouraging this diversity, constant vigilance is needed to prevent horizontal differences from turning into vertical differences, which would lead to stratification of the system and the reproduction of socioeconomic inequalities. A possible way forward here is for countries to combine institutional-level and system-level indicators, to provide important information for universities while acknowledging their need to work together.

One of the most intractable dilemmas that an initiative of this sort faces is that between simplicity and complexity. The reality of the work of universities and their impact on public good is multifaceted and highly complex, and anything approximating to a single number – even when comprised of a series of amalgamated indicators – will be reductive. And yet, displaying the full complexity of these ideas will render the message unappealing for policymakers and for the public. The success of the mainstream international rankings is that they provide a single line on which to order all institutions – we can easily see where an institution is located in relation to all others, and how it rises and falls year-on-year. There is likely to be a strong relationship between simplicity and public uptake.

Countries may decide, therefore, that amalgamating the six proxies into a single composite indicator is preferable in order to raise the profile of the public good indicator. If this decision is taken, it must be recalled that the index is likely to hide significant disparities between the different aggregated areas, and strategies for action should take the disaggregated data as their starting point.

There is, of course, a chance that all of these efforts may prove to be counterproductive. As has been seen extensively at the school level, the use of targets and other indicators has led to unhealthy cultures of performativity and even falsification of results, even when motivated by the need to address inequalities in the system (Ball 2012). Furthermore, there is the question of reporting fatigue, with universities required to provide a host of different kinds of information to national higher education bodies, leading to a heavy burden on administrative resources and a distraction from the substantive work of the institution. If universities in Africa are already playing a significant role in promoting the public good, why do we need an indicator at all? These questions cannot be dismissed altogether, and there are genuine risks in this kind of initiative.

Nevertheless, we consider that the contrary tendencies are sufficiently strong as to make the risk worthwhile. As argued by Marginson (2011), higher education globally is constrained in fulfilling its public good role on account of marketisation and status competition. The commercialisation of higher education systems is undermining equity of access (through intensifying cost barriers in the system, in addition to the uneven playing field of competitive entrance exams that has long existed), but also prevents the conducting of research and community engagement in the public interest. These constraints are particularly evident in the rapidly expanding for-profit sector, mainly constituted of institutions running low-cost applied social science and professional degrees, with fewer activities beyond direct classroom or distance instruction.

Yet constraints on the public good role are also evident in public universities in which creeping marketisation has been observed in most countries around the world. Status competition is more ambiguous, and it cannot be denied that much of the activity of elite universities can and does bring public benefit. Yet the forms of competition promoted by international rankings – as outlined extensively above – privilege elite publications and reputation to the detriment of inclusive admissions and community engagement work. McCowan (2019) adds to these outcomes the trend of unbundling, through which the constituent elements of higher education (teaching, research and community engagement, and within teaching, the elements of course design, delivery and assessment) are being separated in order to drive down costs and maximise profitability. This disaggregation of elements reduces any leverage in the system for ensuring equality of opportunity and promoting public good benefit for external communities.

The dashboard proposed in this paper offers an opportunity for higher education stakeholders to counter the effects of marketisation and commercialisation. One could say it creates the opportunity for a cultural shift. Whereas the 'market for higher education' defines students as consumers and drives students to treat higher education as a product for sale, this dashboard re-centres the role that students, civil society, communities and other stakeholders all play in co-constructing the university. Thus, the dashboard has the ability to reorganise the power dynamics between stakeholders. By redefining the relevant stakeholders as not simply passive recipients of the public good conferred by universities, it accents their contribution to the public good.

The trends of marketisation, status competition and unbundling mean that while stakeholders in the higher education system may be motivated by the public good, as shown by the data collected for the Higher Education,

Inequality and the Public Good in Four African Countries project, they are severely constrained in being able to deliver it. This article has argued that identifying indicators of the public good, and systematising them in a dashboard, can assist in bringing the public good to the centre of the university's and the higher education system's attention, and can – to some extent – counter the weight of the international rankings. A dashboard would also serve a function in enabling the self-evaluation of institutions, for understanding how they compare with others (not necessarily in order to promote competition between them, but to understand the differences), and provide a basis on which to enhance their work. The huge potential of the higher education system, in helping to achieve the SDGs and in ensuring just and prosperous societies, will only be achieved if it is underpinned by public good values and can focus its resources on public-oriented activities.

Acknowledgements

Notes

1. This article uses the term 'indicator' to denote information that relates to a single variable of interest, as opposed to an 'index', which may comprise a variety of indicators combined. Indicators may be qualitative or categorical, but are often numerical. Rankings are formed when entities are ordered in relation to their performance on particular indicators or indices.
2. https://universitas21.com/rankings
3. International Standard Classification of Education
4. Further data is held by the World Bank and the OECD for a reduced set of countries.
5. The public good can be conceptualised in a unitary way or as a series of discrete goods. The latter view is common in economics, following the seminal treatment by Samuelson (1954).
6. These themes surfaced through data analysis at the country level using codes generated partly on the basis of the research questions and partly on the basis of internal discussions by teams in each country. This was followed by a workshop in London where a tentative outline of key emerging themes was drafted. Thereafter, workshops were conducted in each African country where the findings were presented to stakeholders who contributed feedback to the team. Finally, a final round of the thematic analysis was conducted by the team, bringing us to this working definition of the public good.

7. These are: funding; equitable distribution of educational resources and policy contradictions; institutional conditions such as colonial legacies, gender-based harm or language policy.

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