nance. Most of the growth of higher education institutions is in the commerce and business studies areas, rather than in the science and technical college fields.

Overall, the private sector owns 72 percent and the public sector 28 percent of the tertiary institutions. The overwhelming majority of students at the public universities are sponsored by private sources, not by government. In fact, apart from providing the required funding and other resources to the private tertiary education institutions, the private sector also plays a big role as a source of funding for the public tertiary institutions. Thus, the private sector plays a vital, complementary role in the provision of tertiary education in Uganda.

Quality Up to the 1990s

As noted, Uganda's quality of education at all levels used to be the best in Eastern Africa. The sound quality of education was sustained by a highly qualified team of instructors, well-equipped and well-funded institutions, adequate supporting services and staff, and good governance at all institutions. Despite political turbulence following the Idi Amin coup d'état of 1971, the quality remained reasonably high for at least two decades. Unlike today, it should also be noted that, at that time, there was hardly any corruption in the country, and student and teacher discipline and morale were very high. Unfortunately, corruption is now widespread in the country.

As noted earlier, many foreign students flocked to Uganda's secondary schools in search of quality education. Following admission of nongovernment sponsored students in 1992–1993, accompanied by the establishment of private universities since 1988, many non-Ugandans also flocked to the country to benefit from sound quality university education. The fact that tertiary education in Uganda is generally cheaper than in neighboring countries also helped increase the demand, and, therefore, the number of foreign student inflows into the country.

After that, the situation changed for the worse—mainly due to serious underfunding. Currently, most higher education institutions are known for, inter alia, insufficient funding, overcrowded lecture halls, insufficient (and sometimes inexperienced and underqualified) instructors, inadequate teaching and learning materials, suboptimal numbers of senior academics, meagre or non-existent research output, and shortcomings in administration and other aspects of governance. In fact, all the universities are currently "bottom-heavy," with a serious lack of senior staff, particularly at the professorial levels. As for research, basically, only Makerere University can boast of reasonable annual research output; the other universities are essentially teaching universities with minimal research output. The situation at most institutions in terms of physical and edu-cational infrastructure and academic standards leaves a lot to be desired, just as in primary and secondary schools.

The Way Forward

Uganda needs to immediately modernize higher education—including rehabilitation and growth in the face of changing needs and technologies. Ultimately, this involves reshaping higher education in order to give it new life and a new relevance, including transforming institutions to meet changing social needs. This revitalization should culminate in improvements in its quality and quantity, strengthening existing systems and structures, filling existing gaps, diagnosing and dealing with deficiencies, and, consequently, enhancing sustainable development.

The higher education sector definitely needs overhauling. Annual government budget allocation to the entire education sector needs to be raised from its current low level (less than 10 percent of the budget) to at least 15 percent. Hence, increased funding, close supervision, and serious attention to solving the other challenges are essential in overcoming the multifaceted problems afflicting the subsector. Policy should target these variables. ∎

The Challenges of Creating a Ranking: A Colombian Example

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Colombia is a country with a population of 48 million and 2.3 million students enrolled in higher education (49 percent access rate). For almost two decades, the Colombian government used a voluntary accreditation system to provide information to the population on the quality of higher education institutions. Even if accreditation has

been a recognized tool to grant public trust in educational quality, it does not provide enough information for decision-making, as the public only knows whether a higher education institution is accredited or not. The public does not know the extent to which the quality of an institution is close to, or far away from accreditation standards. In addition, only 14 percent of higher education institutions are accredited, and most of the remaining 86 percent have opted out. Therefore, the community has limited information on the quality of the nonaccredited institutions, which represent the majority. The main source of information consulted by the community is in the international rankings. However, the most comprehensive academic ranking in the region so far, QS Latin America, includes only 50 of the 289 Colombian higher education institutions (17 percent).

As members and advisors of the ministry of education of Colombia, we developed a ranking with a multidimensional approach: the Model of Higher Education Performance Indicators (MIDE by its acronym in Spanish). Our goal was to provide information enabling the community to compare the performance of the country´s public and private higher education institutions and inform their decisions on higher education,

This article addresses the five main challenges encountered during the design, implementation, and disclosure of MIDE, which was launched on July 15, 2015 by the minister of education. We also present the methodology used to overcome these challenges.

Challenge 1: Information Sources and Reliability

The most challenging restriction for the construction of an academic ranking relies on the availability and robustness of information. We built MIDE based only on already existing data provided by public information systems; we did not use indicators stemming from surveys and reputational measures, as we considered them prone to be self-referential and self-perpetuating. Although Colombian data sources are public and free, they are rather difficult to access and interpret by the population. Therefore, MIDE was designed to provide a simple mechanism to read and interpret data resulting from these information tools.

The information systems that we used have been developed by the government since the early 2000s to measure the performance of higher education institutions in terms of quality and pertinence. These systems use mainly information reported by higher education institutions. They include demographic and financial variables of institutions; dropout rates based on socioeconomic indicators; alumni employability and salaries in the job market; research indicators; and results of higher education standardized national tests.

Challenge 2: Diversity of Higher Education Institutions

One major challenge in the construction of the MIDE model was to compare the performance of diverse higher education institutions with common metrics. In order to partition a complex higher education system, we adapted the concept used by the Carnegie Classification of Higher Education Institutions in the United States. We aggregated both public and private institutions in four groups (Doctoral, Master, Bachelor, and Specialized institutions), according to the number of graduates or programs offered per education level and the number of disciplines offered in undergraduate programs. This classification allowed us to produce, in addition to a general ranking, a ranking for each group.

> **For almost two decades, the Colombian government used a voluntary accreditation system to provide information to the population on the quality of higher education institutions.**

Challenge 3: Choice of Variables and Indicators

The MIDE structure is based on the review of different elements of global rankings such as the Academic Rankings of World Universities (Shanghai) principles, the QS weights system, and the multidimensional approach of U-Multirank. MIDE is composed of 18 variables grouped in six dimensions that are aggregated in three main categories: students, professors, and institutions. We considered both input and output variables. Input variables serve as indicators of resources available to the institution, and output variables serve as indicators of learning outcomes and success on the labor market. We selected indicators in which a progression would result in an improvement for the higher education institutions, both in international rankings and in the domestic process of accreditation.

MIDE is different from other rankings, in that it incorporates objective measures of learning outcomes using the results of the Colombian state examination SABER PRO. Since 2003, this examination evaluates annually all higher education graduates in five basic areas of competence, including quantitative reasoning, critical reading, writing, English comprehension, and a module with discipline-specific questions.

Challenge 4: Ranking Methodology

The main role of rankings is to serve as a systematic or-

ganization structure that allows summarizing a series of variables in one single score. To rank the institutions, we designed a methodology called "Ranking of Rankings," as a technique that guaranteed every variable to have the same scale and distribution. The methodology consisted of using the ordinal place of the higher education institution in each indicator, then averaging the positions to get a final score by using a weight for each variable. This led to the challenge of defining weights for each variable. Although we considered the option of allowing users the freedom of assigning the weights so they could create their own ranking, for the ministry it was crucial to promote improvement in certain key indicators. Therefore, we fixed weights for each variable according to the robustness and reliability of data sources, and to the importance of the indicator in the higher education goals of the National Development Plan.

Challenge 5: Disclosure

Normally, ranking models are developed by third parties. Although the model was created by the ministry of education itself with the goal of increasing quality and improving decision-making, this presented a challenge because the ministry is responsible for providing resources to higher education institutions and thus, in part, responsible for their quality. Therefore, the ministry could be seen as both judge and jury in this process. However, the result of culling available information produced a useful tool for the public and a wake-up call for the institutions. In that way, we reassured the community that 1) the ranking was not going to be used for other purposes, such as informing resource allocation or setting quality standards for the accreditation process; 2) the model indicators were balanced in order to be representative of the complexity of the higher education system; 3) the ranking was designed with relevant existing objective measures to be transparent, and thus replicable.

Outlook

After facing these different challenges and publishing MIDE in July 2015, the ministry managed to establish a common language around higher education quality that was heavily discussed in the following months. Even if the model may need time to achieve a certain degree of maturity, it has certainly provided relevant and reliable information for higher education institutions on how to improve in quality, and for parents and families to make informed decisions on higher education. Throughout 2016, an updated version of the ranking (MIDE 2.0) was developed and increasingly accepted by higher education institutions.   ∎

Private Higher Education in Brazil: Fueling Economic Growth

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The Brazilian private education sector is one of the largest in the world. The demand for education in the country is so high that with relevant support from the government, private universities keep expanding. In the traditional higher education community, most think of private education in terms of business rather than of a national plan, with a critical focus on their quality. With nonprofit institutions also engaged in creating profits by means of various courses and projects, there is no end to the discussion about for-profit and nonprofit education. In Brazil, meanwhile, the national test of graduates (ENADE) reveals a wide range of quality in both the public and private sectors, where the great motivation of students from for-profits makes them show strong results. Private universities, as a part of the National Program, often undergo rigid quality checks. In the majority of cases, the teaching staff of these universities are employed at federal and state institutions, while the students, mainly from the low-income social strata, have a high motivation to study.

A Force to Be Reckoned With

Since 1996, the private higher education sector in Brazil has been consolidating each year, as shown in the latest census data: out of 2,364 higher education institutions (HEIs) in Brazil, 87.5 percent are private. This includes 2,069 universities, university centers, and colleges distributed throughout Brazil, giving Brazilian citizens the possibility to complete a degree (undergraduate, master's, and doctorate) and to change their own circumstances and the circumstances of their families.

The strength of this private segment is proved by national statistics: today, there are more than 6 million students enrolled in private higher education institutions, which represents more than 75 percent of all university students. There is a certain social twist in the educational sys-