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Merits of the Carnegie Basic Classification for Benchmarking the Performance of Universities in the South

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Merits of the Carnegie Basic Classification for Benchmarking the Performance of Universities in the South

Sujata Gamage¹ and Il-haam Petersen²

Abstract

Universities in the South are exhorted to play an active role in the innovation system in those countries but very little attention is paid to different roles played by different types of universities. A survey of existing classification systems for higher education in the North and the South shows that it is difficult to classify higher education institutions, but a time-tested classification such as the Carnegie Basic Classification can be used as a starting point for cross-country comparisons. Arguing that benchmarking is more appropriate for the performance evaluation of higher education institutions in the developing world, we use the Carnegie Basic Classification to benchmark the performance of the public higher education system in South Africa against that of US to demonstrate the feasibility of the concept. The necessity of developing an internet-based interface for benchmarking the performance of higher education institutions in the southern hemisphere, similar to the one provided by the Carnegie Foundation for the higher education sector in the US is discussed.

Introduction

The importance of knowledge for development is undisputed. So is the importance of the role played by universities in the production or synthesis, and dissemination of knowledge. Less well understood is the role of universities in developing countries. The topic has been given increasing attention in the literature with the argument that the conditions in developing countries differ from advanced countries and thus the challenges differ. Also, societal needs

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differ. The literature providing empirical evidence of the role of universities in developing country contexts is thus growing, showing that the conditions and societal needs do indeed differ and thus universities are playing diverse roles (see Science and Public Policy Special Issue, vol. 36, 2009). Within the group of developing countries, there are also differences in the key roles played in countries of different levels of development. For example, in Tanzania, a least developed country, lead universities play an important role in more low-technology needs of SMEs (Mwamila and Diyamett, 2009), and in an upper-middle-income country like South Africa, the need for universities to provide high skilled individuals has been emphasized (Ndabeni and Maharajh, 2009).

However, little empirical research has been done to describe the different types of universities, understand how each type contributes to development and evaluate the performance of each type (some examples are Kruss and Petersen, 2008; Liefner and Schiller, 2008).

Governments in developed countries in the US, UK, European Union, Japan, and Australia have invested heavily in their national university infrastructures. As a result, 180 (90%) of the top 200 universities in the world 2009 ranking are located in those countries (www.timeshighereducation.co.uk, retrieved 27 June 2010). These developed countries also have well established systems for quality assurance by national authorities and/or assessments by private ranking surveys. The higher education systems in these countries are often large enough to accommodate within-country benchmarking and other performance evaluations.

In developing countries, intergovernmental organizations such as the World Bank continue to invest in upgrading the quality of universities, the quality of undergraduate education in particular, through well-funded programs (World Bank, 2002, Appendix D). These programs have been successful in establishing within country quality assurance systems but lacking are efforts to benchmark or rank the performance of local universities against aspirational peer systems outside of the countries concerned³. In the absence of benchmarking or ranking against higher performing systems outside of those countries, within-country quality assurance systems

³ Aspirational peers in the context of a given national higher education system are one or more systems outside of the country that perform at a higher level in regard to a set of selected criteria.

in developing countries lack credibility. Higher education systems in smaller emerging economies such as South Africa, Malaysia and South Korea may present suitable aspirational peer systems for developing countries but, unfortunately, higher education systems in those emerging economies too are not as well-characterized as those in the developed world.

A universal classification framework, if made available, can be used by developing countries to understand how their universities' perform compared to their aspirational peers. Such comparisons would be useful to universities in their self assessments and to policymakers in their efforts to steer the university systems to more adequately meet societal needs.

In the present study, we survey the existing classification systems to discover that a universal classification for a national higher education system would be difficult to achieve, but a time-tested system such as the Carnegie Basic Classification can be used as a starting point for cross-country comparisons. Secondly, we argue for the use of benchmarking rather than ranking for the performance evaluation of higher education institutions in the developing world. Thirdly, we use the Carnegie Basic Classification to benchmark the performance of the public higher education system in South Africa against that of US to demonstrate the feasibility of the concept. Fourthly, we argue for the necessity of developing an internet-based interface for benchmarking the performance of higher education institutions in the southern hemisphere, similar to the one provided by the Carnegie Foundation for the higher education sector in the US.

Classification of Higher Education Institutions

We used a representative sample of countries to evaluate the current state classifications. In our sample, US, UK, Canada and Australia represent countries in the North. To represent the countries in the South, we picked one country each for each region – South Africa in the African continent, India for South Asia, Malaysia for South-East Asia and South Korea for East Asia. The results are summarized for each country according to three types of classifications – classifications by policymakers or other sanctioned national authorities, classifications used in ranking surveys aimed at students and their parents and classification by third parties such as academic institutions or education think tanks.

Classifications Used by National Authorities

Interestingly, national authorities seem to shy away from classifying their university systems by criteria other than ‘public v. private’ or ‘universities v. colleges’ with the distinction between universities and colleges left undefined. Higher education systems in Australia, Canada, UK and the US fall into this category. In the US, public sector higher education is devolved to the states with the federal department of education serving as a supporting entity that provides a framework for national comparisons through the NCES (National Center for Education Statistics). NCES reports their data by ‘4-Year institutions v. 2-Year Institutions’ or ‘Public institutions v. Private institutions,’ differentiations which carry no controversies. In India, the differentiation reflects the different processes for accreditation used by the central government.

Table1: Classification of Universities, by National Authorities

Region/Country	Authority	Classification
Australia	Department of Education, Employment and Workplace Relations	Public Universities (35), Private Universities (2), Self-accrediting provider (3); non-self-accrediting provider (150+)
Canada	Association of Universities and Colleges of Canada	Public Universities , Private Not for Profit Universities and University-Degree Level colleges (95)
UK	Higher Education Funding Commission of England	Universities and Higher Education Colleges (130)
US	National Center for Education Statistics	Public, Private; or 2-year/4-year
India	Department of Higher Education, Ministry of Human Resource Development	Institutes of National Importance (23); Central Universities (22), Accredited State Universities (95), Deemed Universities (35) and Private Universities (1)
Malaysia	Ministry for Higher Education	Public (20); Private (3); Foreign University Branches (4); Polytechnics (22); Community Colleges (37); and Private Colleges (about 500)
South Africa	Council for Higher Education (CHE)	[Traditional]Universities (11), Comprehensive Universities (6), Universities of Technology (6)

South Korea	Ministry of Education	Public (54), Private (318); Or Universities (175), Universities of Education (11), Industrial Universities (14), Junior Colleges (148), Miscellaneous Other (25 Junior Colleges, Broadcast and Correspondence Universities, Technical Colleges, and other miscellaneous institutions)
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Notes: Number of institutions indicated in parenthesis. All Internet sources are up to date to Jun 22, 2010
Source: deewr.gov.au/HigherEducation/Pages/Overview.aspx; http://www.aucc.ca/index_e.html;
hefce.ac.uk/aboutus/history/; nces.gov; education.nic.in/IHL.asp;
educationmalaysia.gov.my/index.php?article=mohe; www.che.ac.za/heinsa/overview/;
english.mest.go.kr/main.jsp?idx=0401030101

Of the countries surveyed, South Africa is the only country which gives a somewhat more meaningful differentiation, but the path to differentiation in that country has been and continues to be a difficult one. The current strategy of the CHE is to observe the emerging trends and adapt reporting formats as necessary. According to the South African Council of Higher Education (CHE, 2009):

In 2003 a new funding framework was introduced by the Department of Education to distribute state funding to the public institutions. The phasing-in period for this new framework ended in 2007 and the impact of the change has begun to be felt. The public higher education institutions have undergone extensive restructuring resulting in 23 public universities. This report categorizes public higher education institutions as universities, comprehensive universities and universities of technology in order to illustrate how national trends sometimes play out differently in different parts of the higher education sector. The idea of moving towards defined institutional types was introduced by the CHE in a policy report published in June 2000 with a view to increasing the differentiation and diversity of institutions (CHE, 2000). The sector rejected this “externally-imposed institutional typology” (SAUVCA, 2000, p. 2), while supporting the principles of differentiation and diversity of institutions. However, there are indications that the sector is beginning to differentiate itself, as will be discussed in the conclusion. Such self-differentiation is welcomed and,

where data is available, the groupings that emerge will be used in future reporting on the sector.

Singh (2008) too argues that “the potential value of differentiation as a policy goal or strategy must be seen in tandem with the possible risks that accompany it. It also points to the need to negotiate tensions and conflicts between differentiation and other chosen policy goals”.

Classifications Used by Private Ranking Surveys

Ranking surveys are aimed at students and parents. Generally, ranking surveys differentiate universities according to the level of degrees awarded and disciplinary focus, presumably the categories of interest to students and parents. In ranking surveys in the US and Canada, primarily undergraduate institutions are separated out from institutions that combine graduate and undergraduate programs. In the US, primarily undergraduate institutions are represented by the liberal arts or baccalaureate category. These institutions are generally small in size and provide an undergraduate-oriented environment. The term ‘liberal arts’ implies a disciplinary focus on arts and sciences while the term ‘baccalaureate’ implies a professional focus. In Canada too, the focus of its national ranking survey is on differentiating institutions according to the needs of the students. For example, in Canada, primarily undergraduate institutions are labeled as such and other institutions are further divided as medical-doctoral and comprehensive. In Australia, the UK and India, the ranking surveys do not differentiate among universities.

Table2: Classification of Universities by Ranking Surveys

Country	Survey	Classification
Australia	Australian Ranking Survey	-
Canada	Maclean's Magazine (Canada)	Medical Doctoral, Comprehensive, Primarily Undergraduate
UK	Times	-
UK	Guardian	-
US	US News & World Report	National, Masters, Liberal Arts, Baccalaureate

India	India Today	By Academic Program (Arts, Science, Commerce, Engineering, Law and Medicine)
International	Times	World Universities (Top 200)
International	SJTU	World Universities (Top 500)
Regional-Asia	AsiaWeek	Multidisciplinary/Science & Technology

Key: SJTU- Shanghai Jiao Tong University

Notes: To our knowledge there are no national ranking surveys in Malaysia or South Korea. All Internet sources are up to date to Jun 27, 2010.

Source: www.gooduniguide.com.au; oncampus.macleans.ca/education/2008/12/19/our-18th-annual-rankings/2; www.timesonline.co.uk; education.guardian.co.uk; www.usnews.com; www.india-today.com; ed.sjtu.edu.cn/ranking.htm (now www.arwu.org); www.thes.co.uk/worldrankings; cgi.cnn.com/ASIANOW/asiaweek/features/universities2000

Classifications Proposed by Third Parties

Third parties such as academics, independent researchers, academic institutions or think tanks are able to experiment a little more freely in coming up with classifications for higher education. For example, Marginson's illustrative classification that assigns some universities to the "Wannabee Sandstone" is something that a national authority cannot use. Some of these classifications also focus on one of the university activities. For example, classifications proposed by Kahn et al (2007) for South Africa and Shin (2009) for South Korea focus on research performance. Interestingly, Kahn et al also make comparison between universities' research performance pre- and post-2004 when the merger process transforming South Africa's higher education was due to be completed, thus illustrating how classifications can be used to track changes in university system. Moodie (2009) and Lim (2009) on the other hand, attempted to develop classification systems according to level of development, providing a description of the typical types of universities in such countries.

The classification framework put forward by the USA based Carnegie Foundation for Education is the most innovative classification in this regard. It is a multi-dimensional, user-driven framework that can be used by any stakeholder.

Table3: Classification of Universities by Third Party

Country	Survey	Classification
Australia	Marginson (1997)	Sandstone Universities, Universities of Technology, Wannabee Sandstones and New Universities
Developed Countries	Moodie (2009)	World Research Universities, Selecting Universities, Recruiting Universities, Vocational Institutes
Developing Countries	Lim (2009)	Elite, Rural-based, Urban-based
South Africa	Kahn et al. (2007)	Big Five, Next Seven, Small
South Korea	Shin (2009)	Research Universities, Research Active Universities, Doctoral Universities
UK	IHEM Country Report (2007)	Old, New, Open
US	Carnegie Foundation, Basic Classification 2005	Doctoral, Master's, Bachelor's, Associate's
US	Carnegie Foundation, Extended Classification 2005	Dimensions (Size and Setting, What is taught, Who are the students, Research Activity and Community Engagement)

Key: SJTU- Shanghai Jiao Tong University

Source: Marginson (1997); Moodie (2009); Kahn, Vlotman, Steyn and van der Schyff (2007); Shin (2009); IHEM Country Report, Center for Higher Education Policy Studies (2007); www.carnegiefoundation.org

A Classification has to fit the purpose

The survey of classification systems shows that there can be no one set of classification. A classification has to fit the purpose. Ranking surveys are free to choose the classification they desire but national authorities have to address the concerns of multiple stakeholders in their decisions. Therefore, at a national level, what is needed is not one classification but a classification framework such as the Carnegie Foundation's Framework 2005 which can be used to create classes of institutions as needed for each purpose, be they policy issues, parent or student concerns, self-assessment by higher education institutions and research and analysis by third parties.

However, our work shows that the Carnegie Basic Classification can be used by a third party, such as a non-profit foundation, as the basis for benchmarking the performance of universities in the developing world.

Carnegie Framework 2005 – A User-Driven Multi-Dimensional Framework for Classifying Higher Education Institutions

The Carnegie Foundation for the Advancement of Teaching's university classification is by far the most established and well-known university classification system. This classification system dates back to the 1970's when the Carnegie Commission on Higher Education developed a classification of colleges and universities to support their program of research and policy analysis. Derived from empirical data on colleges and universities, the Carnegie Classification was published for use by other researchers in 1973, and subsequently updated in 1976, 1987, 1994, 2000, and the most recent change was the major revamping of the classification in 2005. For over three decades, the Carnegie Classification has been the leading framework for describing institutional diversity in US higher education. It has been widely used in the study of higher education, both as a way to represent and control for institutional differences, and also in the design of research studies to ensure adequate representation of sampled institutions, students, or faculty. This section draws on information provided on the Carnegie Foundation's website where a complete description of the history of the framework, methods and data can be found (www.carnegiefoundation.org, retrieved 16 October 2009).

With the 2005 revision, the single classification system was replaced by a set of multiple, parallel classifications:

- * Undergraduate Instructional Program Classification
- * Graduate Instructional Program Classification
- * Enrollment Profile Classification
- * Undergraduate Profile Classification

* Size & Setting Classification

* Basic Classification

The new classifications provide different lenses through which to view US colleges and universities, offering researchers greater flexibility in meeting their analytic needs. The original Carnegie Classification framework—now called the Basic Classification—has also been substantially revised. The Basic Classification continues to be based on academic hierarchy or distribution of the levels of qualifications offered.

Figure 1: Carnegie Basic Classification, 2005

Doctorate-granting Universities

Awards 20 or more doctorates per year

Master's Colleges and Universities

Awards more than 50 masters degrees and less than 20 doctorates per year

Baccalaureate Colleges

Bachelors degrees represent at least 10% of all degrees awarded and fewer than 50 Masters or 20 doctoral degrees are awarded per year

Associate's Colleges

Bachelors degrees represent less than 10% of all degrees awarded

Special Focus Institutions

Faith, Med, Health, Eng, Tech, Bus, Arts, Law, Other

Tribal Colleges

According to the Carnegie basic classification, Doctorate-granting Universities are institutions awarding 20 or more doctorates for the particular year with research activity being classified according level of activity (using a composite indicator) (very high, high and low).

Master's Colleges and Universities are institutions awarding more than 50 masters degrees and less than 20 doctorates for the particular year studied, and institutions are further

classified according to the size of their masters programs based on the number of masters students produced in the year (large = at least 200, medium = 100-199, and small = 50-99).

Baccalaureate Colleges refer to institutions where the number of bachelor's degrees produced represents at least 10% of all degrees awarded and fewer than 50 masters or 20 doctoral degrees are awarded for the year. Baccalaureate Colleges are further classified according to their disciplinary focus, that is, whether 50% or more of the degrees awarded are in the Arts and

Sciences (Bac/A&S: Baccalaureate Colleges-Arts & Sciences) or other fields (Bac/Diverse: Baccalaureate Colleges-Diverse Fields).

Institutions that report a proportion of bachelor's degrees smaller than 10% of their total undergraduate degrees awarded are referred to as Baccalaureate/Associate's Colleges (Bac/Assoc), whereas institutions that awarded a total number of bachelor's degrees representing less than 10% of all degrees awarded for the year are classified as Associate's Colleges. Associate's Colleges are further classified according to the size of the student body (i.e. full-year unduplicated credit headcount; small = less than 2 500, medium = 2 500 – 7 500, and large = greater than 7 500), their location based on US Census zones (urban or rural), the number of campuses they have (single or multi-campus), the duration of courses (2-year or 4-year colleges), whether they are public or private and not-for-profit, and the extent to which the curricular focus is narrowly drawn.

Benchmarking or Ranking

Ranking of institutions are typically administered by newspapers. Giving one institution a rank of one and another a rank of two and so on are often done on the basis of imperfect information or imperfect calculations. In ranking, the top member of the group ranked is essentially the benchmark for the group. For understandable reasons national authorities shy away from such listings.

Benchmarking essentially is a process whereby an institution picks a performance indicator, evaluates the performance of competitors or aspirational peers in terms of the selected indicator and decides on a point at which to set one's performance targets. A national authority may rank the performance of the national higher education sector as whole against another national authority without invoking controversies that result when institutions are singled out. As the world Bank notes:

Stakeholder interaction with other countries that face similar challenges can help overcome opposition to reform. A study tour to Uganda recently organized for Guinean officials and university leaders under a World Bank-financed project had

a remarkable impact. Learning firsthand about management reforms at Makerere University encouraged the Guineans to move full speed toward institutional income-generating activities and increased university linkages with industry. World Bank policy seminars involving several neighboring countries, held recently in South Asia, Eastern Europe, Africa, and Central and South America, have had a similar eye-opening effect, inducing countries to accept more easily reforms that have already been undertaken elsewhere in the region. [WB, 2002, p109]

Having a framework for distinguishing different types of universities would greatly improve these types of cross country comparisons.

Benchmarking the Efficiency of Bachelor's Degree Output in South Africa

The increasing demand for higher education is forcing institutions both public and private to find the optimum conditions for serving the largest number of students. Differentiating the South African Higher Education System using output-based criteria used in the Carnegie 2005 framework allows us to compare the US and South African systems in terms of their efficiency in providing opportunities to receive degrees.

The US higher education system is perhaps the best documented system in the world. According to the data published by the WebCASPAR interface of the National Science Foundation, in 2007, the US system comprised of 1478 institutions awarding over one million bachelor's degrees. The South African public higher education system consists of 23 universities awarding 51,267 bachelor's degrees in 2008. The 23 universities in South Africa are differentiated as traditional universities (11), comprehensive universities (6) and universities of technology (6) by the Council of Higher Education in South Africa. This differentiation seems to be based on largely historical and contextual factors. The private higher education sector in South Africa is not well characterized but is expected to be insignificant in comparison to the public sector.

In order to compare the two systems, we applied the Carnegie Basic Classification to these 23 institutions to differentiate these institutions as Doctoral, Master's, Bachelor's and Associate's. The results show that all but 2 of the 11 traditional universities and all but 2 of the 6 comprehensive universities are doctoral institutions (i.e. institutions that graduate 20 or more doctoral degrees per year) indicating that the terminology traditional and comprehensive more or less coincides with the doctoral terminology in the Carnegie framework (see Figure 1).

Figure 2: Classification of South African universities by South African CHE classification and the Carnegie Foundation Basic Classification 2005

	Traditional Universities	Comprehensive Universities	Universities of Technology
Doctoral	N= 9 SUN, Very High Research UCT, Very High Research UKZN, Very High Research UP, Very High Research WITS, Very High Research UFS, High Research NWU, Low Research RU, Low Research UWC, Low Research	N=4 UJ, High Research UNISA, High Research NMMU, Low Research UZ, Low Research	N=0
Master's	N=2 UFH, Small UL, Large	N=1 UNIVEN, Small	N=3 UL, Large CPUT, Small DIT, Small TUT, Medium
Bachelor's	N=0	N=1 WSU, Associate Dominant	N=2 CUT, Associate Dominant VUT, Associate Dominant
Associate's	N=0	N=0	N=1 MUT, Rural-Large

Key: CPUT-Cape Peninsula University of Technology (29,158); CUT-Central University of Technology (10,458); DIT-Durban Institute of Technology (22,765); MUT-Mangosuthu University of Technology (10,096); NMMU-Nelson Mandela Metropolitan University (24,245); NWU-North West University (38,707); RU-Rhodes University (5,922); SUN-University of Stellenbosch (21,943); TUT-Tshwane University of Technology (51,446); UCT-University of Cape Town (21,224); UFH-University of Fort Hare (8,526); UFS-University of the Free State (24,132); UJ-University of Johannesburg (42,882); UKZN-University of KwaZulu Natal (37,582); UL-University of Limpopo (16,560); UNISA-University of South Africa (227,539); UNIVEN-University of Venda for Science and Technology (11,173); UP-University of Pretoria (46,122); UWC-University of the Western Cape (14,838); UZ-University of

Zululand (10,591); VUT-Vaal University of Technology (17,185); WITS-University of the Witwatersrand (24,198); WSU-Walter Sisulu University of Technology and Science (24,085);

Notes: Carnegie Basic Classification 2005 (Doctoral, Mater's, Bachelor's definitions are acc

Source: Higher Education Monitor (CHE, 2009) (<http://www.che.ac.za>, retrieved 6 November 2009)

At a glance the South African system seems like an inverted pyramid with 13 doctoral institutions per every 1 Associate level institution in comparison the pyramid structure in USA with 195 doctoral institutions for every 871 associate-level institution.

Table 4: Number of Higher Education Institutions in South Africa and USA by Carnegie Basic Classification 2005

	South Africa	USA
Doctoral	13	195
Master's	6	265
Bachelor's	3	147
Associate's	1	871
ALL	23	1478

The public sector doctoral institutions in the USA provide a unique model of higher education where research and graduate programs are carried in conjunction with large undergraduate programs with the two types of programs reinforcing each other. For example, graduate programs provide a large cadre of doctoral and master's students who serve as teaching assistants to professors. Problems of large class sizes and lower level of interaction between professor's and students etc., the public sector doctoral institutions increase access to higher education and accounted for nearly 40% of the bachelor's degrees awarded in the USA (or 62% of all the bachelor's degrees awarded by public sector institutions). For example, in 2007, 1478 public sector institutions accounted for over one million Bachelor's degree awards. In the same year 1682 private institutions reported an output of only 587,009 bachelor's degrees awarded.

A comparison of the number of by Bachelor's degrees awarded by the US and South African systems show similarities between the two systems.

Table 5: Percent of Bachelor's degrees awarded by the USA and South African higher education systems by Carnegie basic classification

	South Africa	USA
Doctoral	62%	78%
Master's	34%	18%
Bachelor's	5%	4%
Associate's	0%	0%
ALL	1,025,961	51,267

Benchmarking the Efficiency of Associate Degree Output in the South African System

Two-year programs at higher education institutions are increasingly seen as efficient means of opening the doors of higher education to a larger number of students. In fact, in the US, the Obama administration's higher education expenditures are expected to be largely targeted towards community colleges awarding two-year programs [http://www.whitehouse.gov/issues/education/ and http://www.nytimes.com/2009/07/15/us/politics/15obama.html?_r=1].

In 2007, USA reported the awarding of 557,791 associate degrees. In 2009, the South African system reported the awarding of 42,441 2-year certificates of diplomas.

Table 3: Percent of Associate degrees awarded by the USA and South African higher education systems by Carnegie basic classification

US	SA	USA
Doctoral	2%	44%
Master's	3%	37%
Bachelor's	3%	14%

Associate's	91%	5%
ALL	557,791	42,441

A comparison between USA and South Africa reveals that the South African higher education system uses its doctoral institutions to fill the need for associate degree programs as well. For example, in South Africa 44% of 2-year associate degree-equivalents are awarded by doctoral institutions as opposed to 2% in the USA. Whether it is an unintended innovation by the South African system or a sign of inefficiency is an issue that needs to be explored by South African policymakers.

Extending the Basic Classification

We combined the Carnegie's Undergraduate Program Classification with the Basic Classification to get a more detailed classification of universities in South Africa. The results are revealing. South Africa HE system has no arts and science program intensive (A&S+) universities. Six of its doctoral institutions are professional program intensive (Prof+). All bachelor's level universities are professional program intensive.

Figure 3: Classification of South African universities by the Carnegie Basic Classification 2005 and the Carnegie Undergraduate Instructional Program Classification 2005

	A&S +	Balanced	Prof+
Doctoral	N= 0	N=7 RU SUN UCT UJ UKZN UP WITS	N=6 NMMU NWU UFS UNISA UWC UZ

Master's	N=0	N=4 CPUT DIT TUT UNIVEN	N=2 UFH UL
Bachelor's	N=0	N=0	N=3 CUT VUT WSU
Associate's	N=0	N=0	N=1 MUT

Key: A&S+: 60–79 percent of bachelor's degree majors were in the arts and sciences;
 Prof+: 60–79 percent of bachelor's degree majors were in professional fields; Balanced - bachelor's degree majors were relatively balanced between arts and sciences and professional fields (41–59 percent in each)
 CPUT- Cape Peninsula University of Technology - CUT- Central University of Technology - DIT- Durban Institute of Technology - MUT- Mangosuthu University of Technology - NMMU- Nelson Mandela Metropolitan University- NWU- North West University - RU- Rhodes University - SUN- University of Stellenbosch - TUT- Tshwane University of Technology - UCT- University of Cape Town - UFH- University of Fort Hare- UFS- University of the Free State - UJ- University of Johannesburg - UKZN- University of KwaZulu Natal - UL- University of Limpopo - UNISA- University of South Africa - UNIVEN- University of Venda for Science and Technology - UP- University of Pretoria - UWC- University of the Western Cape - UZ- University of Zululand - VUT- Vaal University of Technology - WITS- University of the Witwatersrand - WSU- Walter Sisulu University of Technology and Science-

Notes The Carnegie Classification 2005 classifies universities according to the highest level of qualifications provided (<http://www.carnegiefoundation.org>); Higher Education Monitor (CHE, 2009) (<http://www.che.ac.za>, retrieved 6 November 2009); Total headcount enrolment for 2006 is reported in brackets

Source: Data is for 2006, retrieved from the South African national Higher Education Management System (HEMIS) database (<http://www.education.gov.za>, retrieved April 2009)

Conclusion

The Carnegie basic classification framework will be a useful tool for comparisons across university systems or within a university system. In the present study we used the US system as an aspirational peer system for South Africa and benchmarked South Africa's performance against USA using the Carnegie basic classification framework. This benchmarking exercise revealed issues that a within-country benchmarking would not have. The World Bank and inter-governmental organizations invests much in improving the quality and relevance of universities across the world but there are no efforts to benchmark the performance of these universities. The

Carnegie Foundation⁴ provides a web-based user-driven interface for benchmarking and other comparative evaluations of higher education institutions in USA. Present study shows that a similar system for higher education sectors in the developing South would be a necessary condition for developing efficient and effective higher education institutions in the region.

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⁴ http://classifications.carnegiefoundation.org/lookup_listings/custom.php

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