

FACT SHEET

ARE WE PRODUCING ENOUGH DOCTORAL GRADUATES IN OUR UNIVERSITIES?

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**higher education
& training**

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1. BACKGROUND

Research and innovation are integral parts of the work of universities. The National Development Plan (NDP) affirms universities as the dominant producers of new knowledge and responsible for critiquing information and finding new local and global applications for existing knowledge. It is recognised that knowledge production must increase if South Africa's developmental goals are to be achieved. In terms of the NDP, South Africa's publication output is the highest on the continent, however, its innovation system is small by international standards. In particular, doctoral graduate numbers are significantly lower than in equivalent developing countries. To ensure that the research and innovation system, which includes universities, adequately address the developmental needs of our society and economy, the NDP sets the following targets to be met by 2030:

1. Increase the percentage of PhD qualified staff in the higher education sector from the current 34 percent to over 75 percent by 2030; and
2. Produce more than 100 doctoral graduates per million per year by 2030.

Against this backdrop, this fact sheet provides progress against the achievement of the above NDP targets.

2. PURPOSE

This fact sheet aims to track progress made against the goals of increasing doctoral graduates in South Africa as stated in the National Development Plan. It does so by answering the following research question:

Are we producing enough doctoral graduates in South Africa?

3. METHODOLOGY

The data in this fact sheet are drawn from the report *Statistics on Post-School Education and Training in South Africa* published annually by the Department of Higher Education and Training (DHET). The data presented in this fact sheet are only for public Higher Education Institutions (HEIs) or universities, and does not include data from private HEIs. In line with the reference period of the NDP, the period under review in this fact sheet is 2010 to 2017.

4. TERMS AND DEFINITIONS

4.1. Number of doctoral graduates per million of population per year

The number of doctoral graduates per million of population per year is calculated by dividing the total number of doctoral degree graduates in a given year by the number the persons in the population in the same year and multiplying the result by 1 000 000.

4.2. Postgraduate students

Postgraduate students includes all students in universities enrolled for Postgraduate, Below Master's Level, Master's Degree, Master's Degree and Doctoral Degrees.

4.3. Doctoral graduate

A person who has completed a Doctoral degree.

5. SUMMARY OF FINDINGS

This section presents the progress towards the achievement of the targets set out in the NDP.

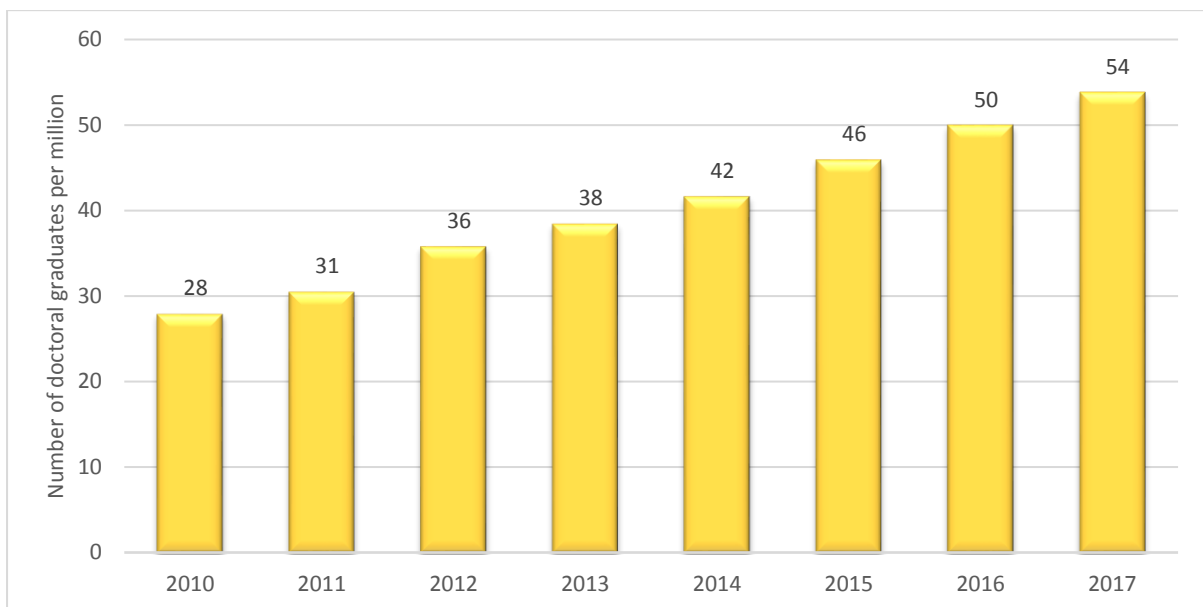
The figures of the findings are presented in section 6. The key findings are as follows:

- The number of doctoral graduates per million in the population in 2017 was 54. This figure represents a 100% increase from that of 2010, where there were only 28 graduates (see Figure 1 below).
- Although the number of doctoral graduates have been on an upward trajectory year-on-year in South Africa, it is significantly lower compared to its BRICS counterparts and peer countries such as Malaysia (see Figure 2 below).
- In order to achieve the NDP target of 100 doctoral graduates per million per annum by 2030, universities need to produce more than 5 000 graduates per annum. However, currently (as in 2017), universities are producing 3 057 graduates per annum (see Figure 3 below).
- The NDP proposes an increase in the number of students enrolled at postgraduate level to over 25% of university enrolments by 2030 in order to achieve the set target of 100 doctoral graduates per million per year.
- The share of post graduate students enrolled in universities fluctuated within the ranges 16% and 18% between 2010 and 2017 (see Figure 4 below).

- If the share of postgraduate students enrolled in universities increases at the same pace in the remaining 13 years, between 2018 and 2030, the NDP target of enrolling over 25% students at postgraduate level might not be realised.
- The NDP further prescribes that if South Africa is to be a leading innovator, the majority of doctorates students should graduate in Science, engineering, technology and mathematics field of study. In 2017, about 52% of the doctoral graduates were in the Science, engineering and technology field of study. This has remained unchanged in the period between 2010 and 2017 (DHET, 2017 HEMIS database).
- The NDP set a target that by 2030, 75% of all academics should have a PhD. Yet, in 2017 46% of academics had a PhD. Therefore, given current growth rates in the share of academics with PhDs, it is unlikely that universities will reach the NDP target (see Figure 5 below).

6. FIGURES

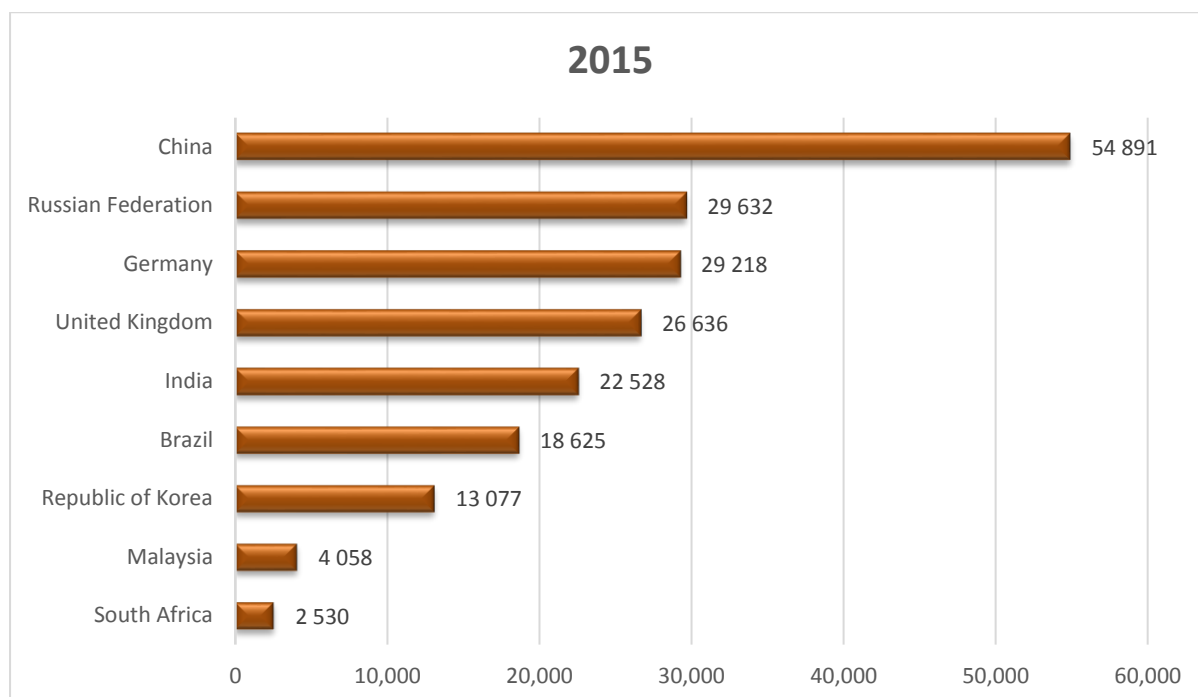
Figure 1: Number of doctoral degree graduates per million of population per year, 2010 - 2017



Sources: own calculations based on *Statistics on Post-School Education and Training in South Africa, 2017 (DHET)* and *Mid-year population estimates 2018 (Statistics South Africa)*

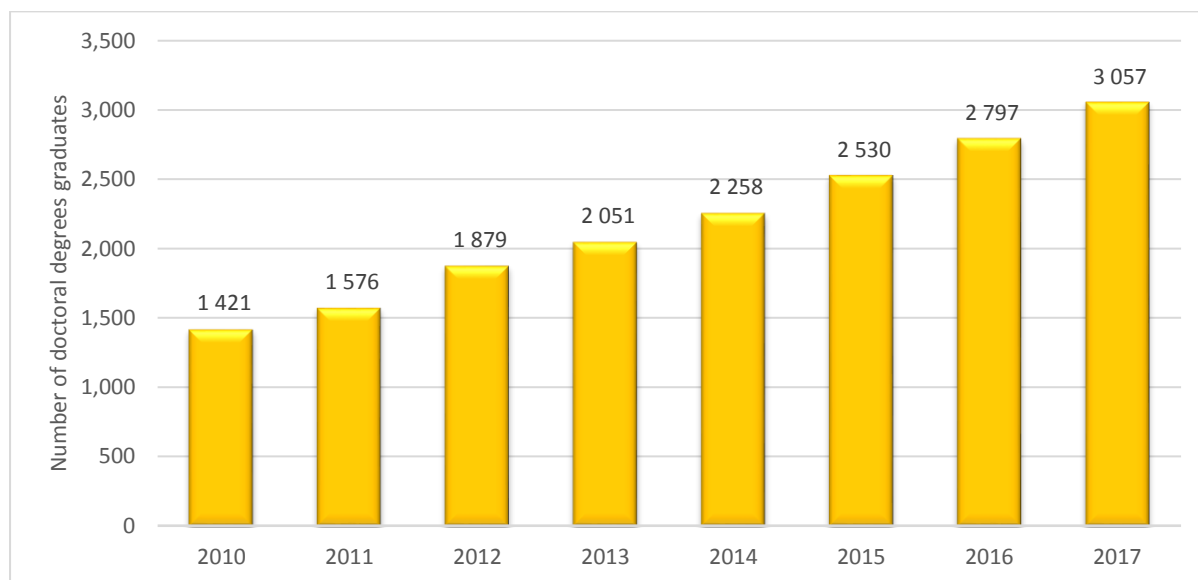
Note: The number of doctoral graduates per million of population per year is calculated by dividing the total number of doctoral degree graduates in a given year by the number the persons in the population in the same year and multiplying the result by 1 000 000.

Figure 2: Number of doctoral degree graduates by country, 2015



Source: UNESCO Institute for Statistics. Extracted 22 January 2020 from UIS.Stat.

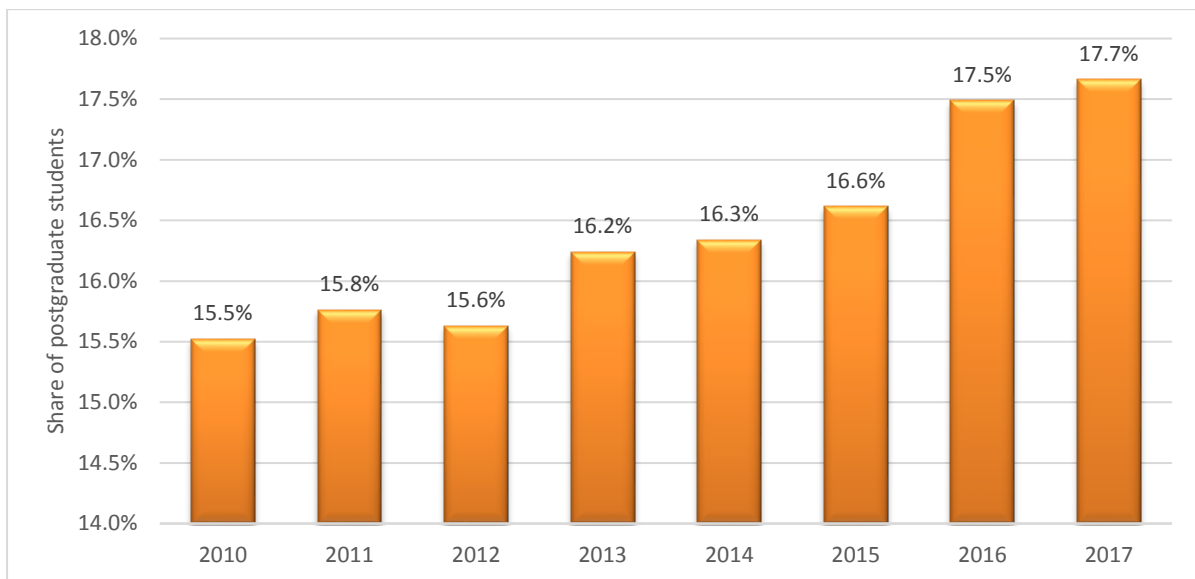
Figure 3: Number of doctoral degree graduates in universities, 2010 - 2017



Source: Statistics on Post-School Education and Training in South Africa, 2017.

Note: There were 34 doctoral graduates from private Higher Education Institutions in 2017. These are not included in the numbers reported in Figure 3 above.

Figure 4: Share of postgraduate students enrolled in universities, 2010 - 2017

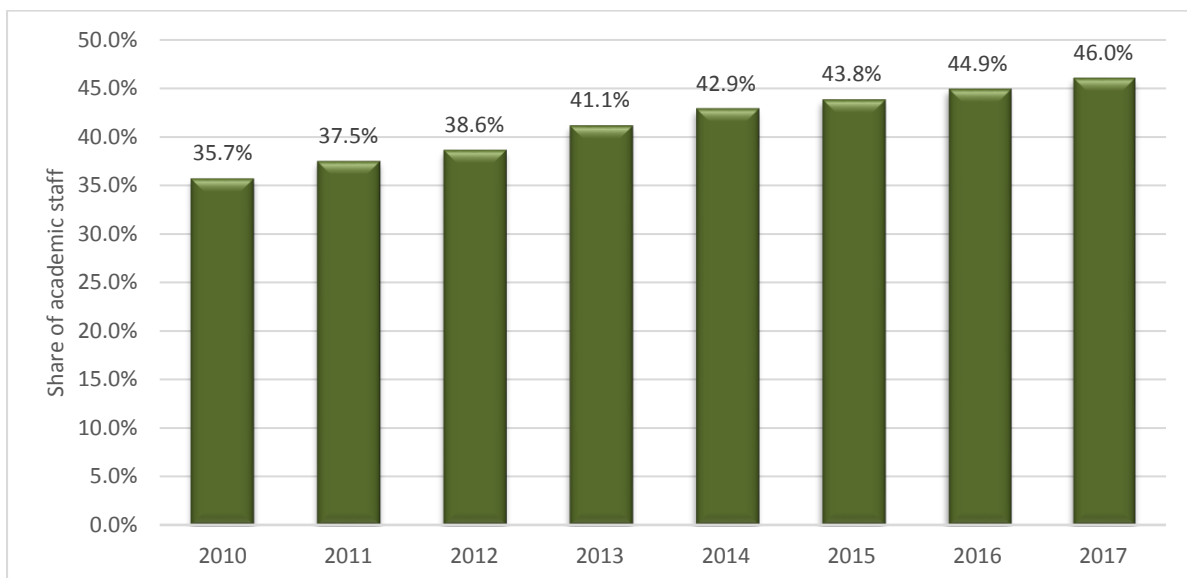


Source: Statistics on Post-School Education and Training in South Africa, 2017 (Own calculations).

Note 1: Postgraduate students includes all students in universities enrolled for Postgraduate, Below Master's Level, Master's Degree, Master's Degree and Doctoral Degrees.

Note 2: The share is calculated by dividing the number of postgraduate students enrolled in universities by the total number of students enrolled in universities.

Figure 5: Share of academic staff with a PHD in universities, 2010 - 2017



Source: DHET. HEMIS database (2010-2017). Own calculations