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# Transformation, stratification and higher education: exploring the absorption into employment of public financial aid beneficiaries across the South African higher education system

Angelique Wildschut[1,2] · Michael Rogan[3,4,5] · Bongiwe Mncwango[6]

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**Abstract**
Improving access to higher education is an important strategy for achieving equity in the labour market. Against the backdrop of the 'massification' of higher education in a number of countries, most notably in the UK during the 1990s, a growing literature on graduate un/employment has aimed to investigate whether the graduate labour market has absorbed the increasing number of university completers. In post-apartheid South Africa, this question assumes an added significance corresponding with the need to redress sharp inequalities in access to higher education inherited from the colonial and apartheid eras. Measuring graduate employment outcomes, however, is notoriously difficult. Graduate employment studies are often ad hoc and focus on graduates from only a handful of universities or degree programmes. Exploring a novel dataset, this paper presents the first analysis of the labour market absorption rates of publicly funded (through the National Student Financial Aid Scheme (NSFAS)) graduates from low-income households across all South African universities between 2005 and 2015. While our findings illustrate the expected differences in the probability of employment by race and gender, we also identify a strong and significant association between the type of university from which NSFAS students graduate and the probability of employment and show that this association holds irrespective of race, gender and the field of study in which a degree is obtained. We conclude with a reflection on what a hierarchical higher education system means for the role of higher education in transformation and creating an equitable society.

**Keywords** Transformation · Student financial aid · Labour market · Higher education · Graduate employment

✉ Angelique Wildschut
AngeliqueW@nsfas.org.za

Extended author information available on the last page of the article

## Introduction

Access to a university education is increasingly seen as one of the key mechanisms to achieve social mobility in low- and middle-income countries (Johnstone 2004; Schendel and McCowan 2016). Accordingly, publicly funded schemes to support and expand access to higher education have also grown, existing in more than 70 countries across the world (Shen and Ziderman 2008; Ziderman 2017). African countries with loan schemes include, for example, Kenya, Rwanda, South Africa, Ghana, Botswana, Nigeria, Tanzania, Zimbabwe, Burundi, Ethiopia and Uganda. Student loan and/or bursary schemes are thus quite common internationally and across Africa, differing of course, in structure and key objectives.

Recognising the growing problem of student debt and the inadequate access to higher education faced by disadvantaged students, the newly formed post-apartheid South African government introduced the National Student Financial Aid Scheme (NSFAS) in 1996. NSFAS' core intent is to support those students who cannot afford higher education, to create more equitable opportunities and access, as well as to shift the inherited skewed racial profile of higher education participation.

A NSFAS bursary[1] is now available to all South African citizens who have a minimum household income of up to R350 000[2] (+-US$ 25,268) and who gain a place at a public university or Technical and Vocational Education and Training (TVET) college for their first post-school qualification. The scheme provides a complete bursary for the full cost of study (fees and university or college residence) plus applicable allowances for food, travel, books and accommodation (if not in university or college residence).

Since its formal establishment, the South African scheme has grown significantly. Bhorat and Pillay (2017) estimate that between 1999 and 2013 NSFAS funding grew from R441 million (US$ 31,500,000) to R8.5 billion (US$ 607,142,857). Furthermore, in the 2016/2017 financial year, NSFAS disbursed R12.4 billion (US$ 885,714,285) to both public universities and TVET colleges, representing an increase in funding of 34% from R9.2 billion (US$ 657,142,857) in the 2015/2016 academic year (NSFAS 2017). NSFAS therefore represents a substantial and increasing public investment in students from disadvantaged backgrounds.

In terms of outcomes, a growing body of literature suggests that NSFAS funding has impacted positively on student access, progression and success in post-school education and training (PSET) (De Villiers et al. 2013; National Treasury South Africa 2016). However, given the clear objectives of transformation, social mobility and redress underpinning public funding for higher education access, understanding the labour market outcomes of the scheme's beneficiaries has remained a key knowledge gap within the South African context. Moreover, the rapid increase in university attendance (and completion) within a higher education system which has historically been divided by race and class raises some obvious questions around the transformative potential of a university education as well as for issues of equity in labour market opportunities and outcomes.

[1] A presidential pronouncement in December 2017 changed the funding scheme from one that provided a mixture of loans and bursaries to a bursary scheme only. This provision applies to all those that qualify for NSFAS funding as of 2018. The study focused on students funded between 2005 and 2015; thus, reference will still be made to loans.

[2] Statistics from Statistics South Africa (StasSA) indicate that approximately 91% of South African household incomes fall under the R350,000 household income threshold (*Living Conditions of Households in South Africa*, Statistics South Africa, Statistical Release 0310, Table 7.5.4).

Against this backdrop, two crucial questions are, first, whether NSFAS-funded graduates find employment after university. Second, and given the context of a diverse and historically segmented higher (and basic) education system, a related question concerns which NSFAS-funded graduates are employed after completing their degrees. The broader question here is whether a highly stratified higher education system frustrates the potential for a university education to promote social mobility. Accordingly, the empirical question that we attempt to answer is whether and how obtaining a degree at a historically disadvantaged and under-resourced university is associated with the probability of finding employment.

In answering these questions, this paper exploits a novel source of data which matches the recipients of NSFAS funding to administrative records from the South African Revenue Service (SARS), as well as to data from the Higher Education Management Information System (HEMIS). The remainder of the paper is structured as follows. The next section offers a brief review of the international literature on stratification in higher education as well as an overview of the recent graduate employment literature in South Africa as context for the exploration of the employment outcomes of NSFAS-funded students. We then discuss the data source that we analyse, our empirical strategy and several potential limitations to our methodology. This section is followed by a descriptive analysis of the post-apartheid population of NSFAS-funded graduates. The section proceeds by presenting a series of multivariate estimates of the probability of employment for the most recent (2015) cohort of NSFAS graduates. The final section discusses the key findings, firstly, in relation to the extant knowledge on the labour market absorption of graduates, and then secondly, in relation to the higher education literature that examines the related concepts of social stratification[3].

## Stratification in higher education, social mobility and graduate employment

In the international literature, the question of whether university graduates find (appropriate) work is typically located within a broader body of research which is concerned with job matching, over-qualification or skills-utilisation in the labour market. In a number of Organisation for Economic Co-operation (OECD) countries, the interest in over-qualification, in particular, is linked with the rise in the number of university graduates and whether this has corresponded with an increase in graduate-level jobs (Green and Zhu 2010; McGuinness and Sloane 2011). An over-arching concern in this literature, and particularly in studies from the United Kingdom (UK), is that the demand for university graduates has not kept pace with the supply of graduates emanating from the 'massification' of higher education during the 1990s (e.g. Dolton and Vignoles 2000; Sutherland 2012).

While much of the developed country literature displays a somewhat instrumentalist approach to the graduate labour market, there is a section (mostly from the UK, the United States (US)) and some European Union (EU) countries) which is concerned with the divergent outcomes associated with differences in the real or perceived quality of higher education institutions (HEIs) (Chevalier and Conlon 2003; Hussain et al. 2009).

Some of this work suggests a link between increases in participation in higher education and inequality and stratification. Stratification can be defined as the process that sorts individuals into positions that provide unequal levels of material and social rewards. While education is important for disrupting the perpetuation of social inequalities, it can also be an

[3] Since our sample consists of low-income and historically disadvantaged students, the question of whether access to higher education has indeed disrupted social inequality is an important one.

important vehicle of social stratification (Triventi 2011). It is thus not surprising that experiences in some contexts have shown that increases in higher education participation have not necessarily improved inequalities in either access to high-quality higher education or successful labour market transitions (for example, Arum et al. 2007; Marginson 2016; Davies and Zarifa 2012). A related point is the recognition that the 'stratification' of higher education systems can exacerbate inequality if equitable access to higher quality or 'prestigious' universities is not realised (Buckner 2013).

Secondly, stratification in higher education can take on a range of forms—vertical (referring to distinct course levels or cycles arranged in a sequence) and horizontal (which includes at least two kinds of differentiation; different types of institutions or educational sectors that can be hierarchically classified on the basis of degree of selectivity, quality of instruction and academic prestige) (Triventi 2013a, b). While other forms of stratification have a bearing, institutional differentiation particularly has been recognised significant in structuring occupational outcomes (Triventi 2011). Where institutional differentiation is strong, privileged families can take advantage to access the better quality and rewarded types of education. The relation between higher education expansion and inequality/stratification is evidenced at both individual and structural levels.

A final insight is that while higher education stratification contributes to the reproduction of inequality, the extent of its effect depends heavily on the country and PSET institutional system context. Institutional arrangements of higher education mediate the relation between social origin and occupational outcomes, but there is no uniform trend across country contexts (Triventi 2011). The extent of the role it plays varies based on the percentage of graduates in the labour market and the reliance on social networks in job search.

In low- and middle-income countries where higher education participation may be driven largely by the desire of households to achieve social mobility and where transformation and the creation of a middle class are priorities, the 'quality of mass higher education' may be of even greater concern (Marginson 2016). In these contexts, unequal access to 'elite' or higher quality universities may actually undermine the transformative objectives of higher education by 'set[ting] limits on what education can achieve' in such societies (Marginson 2016).

Therefore, while the specific need for higher education to address racial transformation and equity at the same time as maintaining quality during a rapid transition period (for a detailed analysis, see Badat 2019) makes post-apartheid South Africa an interesting case[4], the issue of stratification and uneven institutional quality is clearly an issue in a number of countries.

## Graduate employment in South Africa

As a context with an urgent need to redress past injustices and transform society, post-apartheid South Africa has seen a growing body of literature concerned with graduate un/employment (Cosser 2003; Moleke 2010; CHEC 2013; Walker and Fongwa 2017). While the exact extent of graduate unemployment in South Africa has been contested (DPRU 2006; Van der Berg and Van Broekhuizen 2012), there are now several points of consensus. For example, there is recent evidence that higher education graduates from low-income households, and particularly those who attended poorly resourced schools, are more likely to be unemployed (Rogan and Reynolds 2016).

[4] One prominent author (Cooper 2019) has even described the stratification of higher education institutions in post-apartheid South Africa as the driver of a 'stalled revolution'.

Moreover, characteristics such as race and gender have been identified consistently as determinants of unemployment in the South African graduate labour market (Bhorat et al. 2010; Rogan et al. 2015). Most research to date, however, has been based either on small graduate destination or tracer studies which are plagued by low response rates or on larger household surveys (particularly the labour force surveys) which do not have a focus on university graduates. These challenges notwithstanding, the most comprehensive study to date suggests that (working age) graduate employment rates have been between 80 and 85% during the post-apartheid period while graduate unemployment has been consistently around 5% (Van der Berg and Van Broekhuizen 2012). The concern in South Africa, therefore, is not necessarily the level of graduate (un)employment but rather the persistent gender, race and institutional characteristics of graduate employment outcomes. However, a notable gap in the South African graduate employment literature concerns the different employment outcomes across the country's unequal higher education system (for a comprehensive review, see Cooper 2015).

The reason for this is that, despite the highly unequal structure of HEIs in South Africa, data constraints have, to a large extent, prevented South African researchers from exploring the variation in labour market outcomes across the university system. One important exception is a recent study by Van Broekhuizen (2016) who employs an innovative strategy by using the characteristics of graduates from different types of universities found in administrative data (HEMIS) to 'impute' this information in the South African labour force surveys. His analysis, thus, circumvents the typical problem of the lack of data which contains both information on the type of university attended and employment outcomes. Van Broekhuizen (2016), therefore, presents nationally representative evidence, for the first time in South Africa, that the type of institution attended is linked with the probability of finding employment.

To date, it has not been possible to extend this analysis. However, with the data that we analyse in this paper, we are able to explore, for the first time, the labour market outcomes of publicly funded higher education graduates. The fact that this group of graduates is from low-income households and forms the 'newly participating social layer' (Marginson 2016) adds further significance, as this allows us to explore whether the unequal structure of higher education institutions is associated with the labour market outcomes of such groups. The data therefore allow us to build on Van Broekhuizen's (2016) analysis that, while innovative, was based on a number of assumptions to impute the probability of attending a particular type of university. We turn now to the question of which graduates find employment and, in particular, whether and how absorption rates for graduates from different types of South African universities diverge.

## Data and methods

NSFAS maintains a range of separate datasets at unit record level to inform disbursement of loan and bursary funding and to monitor the repayment of loans. For the purposes of this analysis, a unique dataset was constructed, at unit record level, by matching data across three distinct administrative datasets. These datasets include NSFAS funding data from 2005 to 2015, South African higher education enrolment and graduation records (HEMIS) from 2005 to 2015 and employment information as of February 2017 (from the South African Revenue Service).

We define graduates as those with a completed bachelor's degree from a public higher education institution. Completers of diplomas and certificates from higher education

institutions are, therefore, not included in the analysis[5]. This is a decision influenced by the available data but is also consistent with the approach of other recent contributions to the South African literature (see Altbeker and Storme 2013; Van Broekhuizen 2016; Van der Berg and Van Broekhuizen 2012; Rogan and Reynolds 2016). In terms of the labour market, a NSFAS-funded graduate was identified as being employed if she or he had filed a tax return up until the end of the 2016/2017 tax season and if the name of her/his employer was also captured in the data. This decision was informed by the fact that experience with NSFAS loan recovery suggests that if no employer name is captured for an individual, this likely indicates that the person is not currently employed, or their details are captured in this dataset for possibly less secure forms of employment (student or casual employment).

This proxy for employment status comes with several important limitations. First, it does not include all types of employment and some graduates who are in informal, casual or low-paying employment will not be captured as being employed in this database. Second, finding an employment rate of 75% does not mean that 25% were unemployed. Those not in formal employment could be unemployed, employed in the informal sector, self-employed, studying further or generally inactive in the labour market (i.e. not wanting and/or not actively seeking employment). Unfortunately, the available data do not allow an analysis of the labour market status of this group who are not employed. Relatedly, it is possible that even the entries with the name of an employer could include past (i.e. not current) employment data (because employment data are only updated once a tax return is filed). To the extent that this is the case, the employment estimates presented in this paper should be seen as upper-bound estimates. Third, SARS does not provide any information on earnings or income to NSFAS so there is currently no possibility of identifying whether graduates are earning salaries commensurate with their level of education (or of exploring differences in earnings among graduates).

These pitfalls notwithstanding, this paper provides the first examination of the labour market outcomes of NSFAS-funded graduates disaggregated by demographic characteristics (gender, race and age), institution of higher education and field of study.

The final dataset for analysis thus contains anonymised student funding, graduation and employment outcome information for 11 distinct cohorts of NSFAS-funded students that graduated from a public HE institution with a degree in 2005 ($n$ = 5552), 2006 ($n$ = 9314), 2007 ($n$ = 12,246), 2008 ($n$ = 15,275), 2009 ($n$ = 18,232), 2010 ($n$ = 20,732), 2011 ($n$ = 25,234), 2012 ($n$ = 32,009), 2013 ($n$ = 38,648), 2014 ($n$ = 46,723) and 2015 ($n$ = 54,891). This enables us to explore the employment outcomes of NSFAS-funded public university students between 2005 and 2015 over time and compare the labour market outcomes of different cohorts of graduates, distinguished by institution, demographics and field of study. While we estimate absorption rates for the entire population (2005–2015 NSFAS graduates) for which we have data, we focus specifically on the most recent (2015) group of graduates in the latter part of the empirical section. We do this for two reasons. First, an analysis of the most recent cohort is more relevant for policy since it captures an up-to-date assessment of graduate outcomes. Second, measuring employment outcomes 2 years after graduation identifies differences in the time between graduation and employment (since almost all graduates ultimately find jobs) and allows our results to be more comparable with the broader graduate employment literature (see Schomburg and Teichler 2011; Teichler 2007).

[5] The three sets of administrative data also did not identify non-completers, so it was not possible to estimate the employment rates of NSFAS funding recipients who did not complete their degrees.

Given the historical context of higher education in South Africa and the legacy of students from poorer households[6] being less likely to attend the better resourced and research-intensive universities (Van Broekhuizen 2016), the main focus of the analysis is on the type of university a graduate attended. To examine the differences in labour market outcomes across South Africa's diverse and highly uneven[7] university system, we group institutions in three different ways (following Van Broekhuizen 2016). First, we classify universities according to their main function by adopting the South African Department of Higher Education and Training's (DHET) grouping of institutions into traditional and comprehensive universities and universities of technology. The so-called comprehensive universities, of which there are now six, offer a combination of academic and vocational diplomas and degrees, while the six universities of technology focus on vocationally oriented education. The 11 traditional universities offer theoretically oriented university degrees.

Second, we group universities according to their positioning within the historical context of higher education in South Africa. In the following other studies (see Baldry 2016; Bhorat et al. 2010; CHE 2004), we adopt a simple grouping of universities into either historically advantaged institutions (HAIs) or historically disadvantaged institutions (HDIs). While there are certainly drawbacks with classifying institutions into two broad categories (particularly in the cases where an HAI and an HDI were merged in the early 2000s), this approach remains popular in the literature since it acknowledges that the higher education system remains fragmented along historical (racial) lines.

Third, and precisely because of the challenges associated with classifying institutions according to their historical status, the Centre for Higher Education Trust (CHET) proposed a classification system in which South African universities are grouped into three 'clusters' based on performance and functional characteristics (Fisher and Scott 2011; Cooper 2015). This clustering system seems to capture both the unevenness in quality and the historical differences across institutions since cluster 1 includes the high-ranking research focused universities in South Africa (all HAIs) while the second includes a mixture of traditional and comprehensive universities. The third cluster includes mostly HDIs and consists of all of the universities of technology and two comprehensive universities (Fisher and Scott 2011; Van Broekhuizen 2016). Given our interest in the stratification of higher education in South Africa, we estimate (probit) the probability of employment for NSFAS graduates using all three of these institutional groupings separately but regard the CHET cluster approach as our preferred classification system.

## Results

### Sample description of the 2005–2015 NSFAS beneficiaries

Before focusing on the employment outcomes of NSFAS-funded university graduates, we reflect briefly on the profile of the study population (i.e. NSFAS beneficiaries between 2005 and 2015). In line with the objectives of the funding scheme, the majority of recipients were

[6] NSFAS recipients are, by definition, students from households with low income.

[7] It is widely acknowledged that the quality and capacity of universities differ considerably in South Africa and that many of these differences stem from the race-based organisation and management of higher education under apartheid (Fisher and Scott 2011; Cooper 2015).

from previously disadvantaged groups. The beneficiaries of NSFAS funding from 2005 to 2015 ($n = 611{,}963$) were predominantly female (57%). Recipients were also disproportionately African (90%) with smaller proportions of Coloured (4%), White (2%), Indian (0.7%) and recipients classified as 'Other' (3%). The average length of funding support is 2.5 years with the majority of recipients receiving between 1 and 6 years of funding (98.5%). Additional analysis shows that NSFAS recipients make up about 7% of the total number of individuals that enrolled in higher education institutions between 2005 and 2015.

## Graduate absorption rates and selected characteristics

We turn now to an overview of NSFAS-funded graduates (between 2005 and 2015) that were employed, as of February 2017 (Fig. 1). The figure illustrates a high rate of absorption (91% average) overall. The year on year increase in the number of employed graduates (e.g. from 5445 in 2005 to 41,787 in 2015) conforms to prior expectations and simply reflects the regular increases in the number of funding recipients over the years. The decrease in the absorption rate (particularly after 2011) is also an expected finding. This does not reflect a worsening of the labour market outcomes of more recent cohorts, per se, but is more likely capturing the fact that it often takes graduates a period of time after completing their studies to find employment. The absorption rates presented in the figure are, therefore, very encouraging. Although our data do not provide information regarding the type of employment obtained, from this perspective, the employment rates of 88% and 76% for the 2014 and 2015 cohorts,

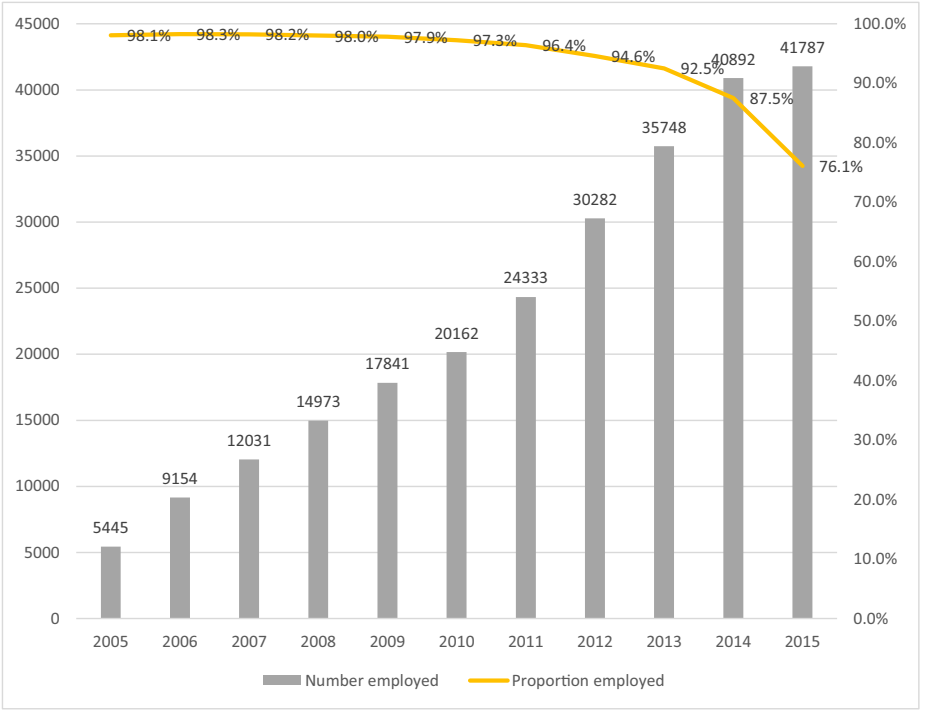


**Fig. 1** Number and proportion of NSFAS-funded graduates between 2005 and 2015 who were employed (as at 22 February 2017). Source: Own calculations from merged dataset ($N = 252{,}648$)

respectively, are also welcome news since they suggest that the vast majority of NSFAS recipients find employment within 2 to 3 years of graduating.

Against these high rates of graduate absorption into the formal labour market and the fact that the time to employment is often a key outcome of graduate employment studies, summary statistics (Table 1) for the most recent (2015) cohort[8], for which we have data, are presented next. After removing missing observations, a complete database for a cohort of 54,777 NSFAS-funded graduates, of whom the majority (61%) are women, remained. On the whole, these figures suggest that NSFAS recipients often attend historically disadvantaged institutions and that women were marginally more likely to attend a higher 'quality' institution than their male counterparts.

The vast majority (89%) of NSFAS recipients are Black Africans, and the differences by gender are relatively small. It is only when considering the field of study in which NSFAS recipients have graduated that there are several clear gender differences worth noting. Women were far less likely to obtain a degree in a Science, Engineering and Technology (SET) subject than their male counterparts (17.5% vs. 29.9%). At the same time, female NSFAS graduates were more likely to obtain a Humanities (21% vs. 15%) or an Education (21% vs. 14%) degree than male graduates[9].

## The determinants of graduate employment

Overall, 76% of the 2015 NSFAS graduate cohort was employed in 2017 but this aggregate figure masks large differences across higher education institutions. Figure 2 shows the average employment proportions for NSFAS-funded university graduates disaggregated by institution. The graph highlights how absorption rates differ quite substantially depending on the institution attended. 34.4 percentage points separate the absorption rate of Cape Peninsula University of Technology (CPUT) graduates from University of Limpopo graduates, for example. The top universities ranked by the percentage of employed NSFAS graduates are CPUT (91.5%), followed by the University of the Western Cape and the University of Cape Town tied for second place at 91.1%. In contrast, the lowest absorption rates were found among graduates from Walter Sisulu University (62.4%), the University of Venda (59.8%) and the University of Limpopo (57.1%). On the whole, a cursory glance at the list of universities, ranked by graduate employment rates, suggests that the probability of employment is correlated quite closely with the historical hierarchy of institutions within the South African higher education system. Cluster 1 universities are mostly ranked in the top third according to employment rates while the four universities with the lowest graduate employment rates are all cluster 3 institutions. An additional, but related, observation is that the universities with the higher rates of graduate employment are located in larger cities, while those with the lowest levels of graduate employment are found in secondary cities, smaller towns and/or former segregated homeland areas.

Building on these descriptive statistics, Table 2 presents the results of three baseline probit regressions to investigate, in a multivariate context, how a range of variables are associated with the probability of employment for the 2015 cohort of graduates. The estimates in the table

[8] This timeframe (1–2 years after graduation) also aligns well with the recommended follow-up period used in graduate destination or tracer studies (see Teichler 1999, 2000).

[9] These patterns follow national enrolment trends where males continue to dominate the STEM subjects (see Reddy et al. 2017).

**Table 1** Descriptive statistics for the 2015 cohort of NSFAS graduates (column totals)

| | Gender | | Total |
|---|---|---|---|
| | Women | Men | |
| Race | | | |
| Black African | 88.3 | 90.6 | 89.2 |
| Coloured | 4.2 | 2.9 | 3.7 |
| Indian/Asian | 0.8 | 0.7 | 0.8 |
| White | 2.2 | 1.7 | 2.0 |
| Other | 4.5 | 4.2 | 4.4 |
| University type (DHET) | | | |
| Traditional | 34.1 | 33.4 | 33.8 |
| Comprehensive | 36.2 | 33.0 | 35.0 |
| Technical | 29.7 | 33.6 | 31.2 |
| University type (historical) | | | |
| HDI | 61.9 | 64.9 | 63.1 |
| University type (cluster) | | | |
| Cluster 1 | 18.9 | 17.9 | 18.5 |
| Cluster 2 | 52.5 | 50.7 | 51.8 |
| Cluster 3 | 28.6 | 31.5 | 29.7 |
| Field of study | | | |
| SET | 17.5 | 29.9 | 22.4 |
| Commerce | 32.6 | 34.7 | 33.4 |
| Humanities | 20.8 | 14.7 | 18.4 |
| Education | 20.8 | 13.7 | 18.0 |
| Health | 5.3 | 3.2 | 4.5 |
| Law | 3.0 | 3.8 | 3.3 |
| Employment status | | | |
| Employed | 74.6 | 78.5 | 76.1 |
| *N* | 33,312 | 21,465 | 54,777 |

Source: Own calculations from merged dataset constructed from NSFAS, HEMIS and SARS administrative data

denote average marginal effects (AMEs) where the average of discrete or partial changes over all observations are computed. The first specification (I) focuses only on the demographic characteristics of 2015 NSFAS-funded graduates (gender and race), whereas in the second model (II), the type of university (DHET classification) is introduced. The third model (III) includes all the demographic and institutional type variables and then adds in a control for field of study.

In the first model, we observe that the probability of women being employed is about four percentage points lower than for men (controlling for race). Furthermore, Black Africans are less likely to be employed in comparison to the other three main race groups in South Africa, and again, this difference is statistically significant at the 99% level of confidence. In the second specification, where a variable denoting university type is added, we find that the probability of being employed is higher for graduates from traditional universities and universities of technology (by 2.8 and 5.4 percentage points, respectively) relative to those who attended comprehensive universities (controlling for race and gender). This is an important finding and supports the conclusions from earlier work (Van Broekhuizen 2016). In relation to the results in the table, an additional finding is that adding controls for university type does not change, appreciably, the employment probabilities by race and gender. Women and Black African graduates remain significantly less likely to be employed irrespective of the type of university they attended.

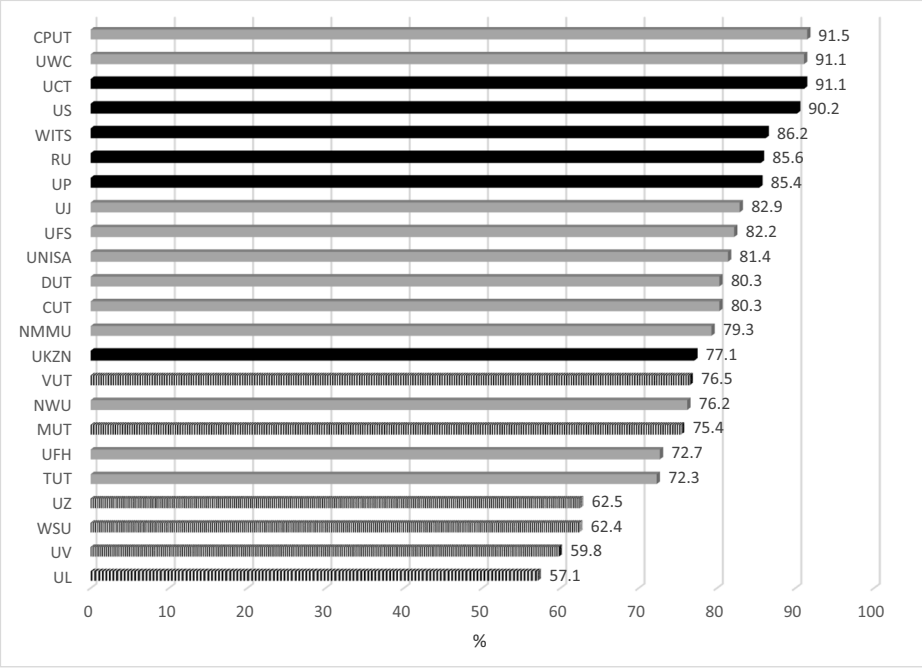


**Fig. 2** Labour market absorption for 2015 NSFAS graduates, disaggregated by institution. Source: Own calculations from merged dataset. Cluster 1 = black; cluster 2 = grey; cluster 3 = pattern fill. Notes: These three institutional cluster groupings were first proposed by the Centre for Higher Education Trust (CHET) (2010) ($N$ = 54,777). *CPUT Cape Peninsula University of Technology, UWC University of the Western Cape, UCT University of Cape Town, US University of Stellenbosch, WITS University of the Witwatersrand, RU Rhodes University, UP University of Pretoria, UJ University of Johannesburg, UFS University of the Free State, UNISA University of South Africa, DUT Durban University of Technology, CUT Central University of Technology, NMMU Nelson Mandela Metropolitan University, UKZN University of Kwazulu-Natal, VUT Vaal University of Technology, NWU North-West University, MUT Mangosuthu University of Technology, UFH University of Fort Hare, TUT Tshwane University of Technology, UZ University of Zululand, WSU Walter Sisulu University, UV University of Venda, UL University of Limpopo*

In the final specification (III) when a control for broad field of study is added, the relative probabilities of employment by gender, race and university type remain largely unchanged. Relative to Humanities graduates, Education graduates are most likely to find employment, followed by Health Sciences (both by about 21 percentage points) and then SET graduates. It is also interesting to note that the association between university type and employment strengthens when controls for field of study are included. This suggests that the lower employment rates among graduates from comprehensive universities are not necessarily explained by the study programmes offered by these universities.

The type of institutional classification used by the South African Department of Higher Education (DHET), however, masks a number of important differences between universities in the specifications in Table 2. In Table 3, we re-estimate the same set of specifications, but we use the HDI/HAI (I, II and III) and the CHET cluster (IV, V and VI) classifications to explore further the association between the type of institution and the probability of being employed. The first column (I) in the table shows that the probability of employment for NSFAS graduates from the historically disadvantaged universities is about 10 percentage points lower than that for their counterparts from the historically advantaged universities. However,

**Table 2** The relative probability of employment (estimation by probit) for the 2015 graduate cohort

| | I | II | III |
|---|---|---|---|
| Gender (ref: male) | | | |
| Female | − 0.043*** (0.004) | − 0.041*** (0.004) | − 0.045*** (0.004) |
| Race (ref: Black African) | | | |
| Coloured | 0.156*** (0.007) | 0.154*** (0.007) | 0.160*** (0.007) |
| Indian | 0.122*** (0.016) | 0.121*** (0.016) | 0.114*** (0.018) |
| White | 0.163*** (0.009) | 0.163*** (0.009) | 0.159*** (0.010) |
| Other | 0.022** (0.009) | 0.021** (0.009) | 0.015+ (0.009) |
| University type (ref: comprehensive) | | | |
| Traditional university | | 0.028*** (0.004) | 0.036*** (0.005) |
| Universities of technology | | 0.054*** (0.004) | 0.075*** (0.005) |
| Field of study (ref: Humanities) | | | |
| Science Education and Technology | | | 0.097*** (0.006) |
| Commerce | | | 0.008 (0.005) |
| Education | | | 0.214*** (0.006) |
| Health | | | 0.207*** (0.011) |
| Law | | | -0.007 (0.011) |
| cons | 0.760***(0.010) | 0.672*** (0.013) | 0.414*** (0.018) |
| *N* | 54,777 | 54,777 | 50,799 |
| Pseudo *R*-sq | 0.010 | 0.013 | 0.045 |

Source: Own calculations from merged dataset constructed from NSFAS, HEMIS and SARS administrative data. Notes: Average marginal effects (AMEs) reported. Standard errors in parentheses. $^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$

attending an HDI does not 'explain' the gender and racial differences in the probability of employment since the marginal effects for these variables are similar to those in the base equation (column I of Table 2). Adding in controls for the field of study (II) shows the same results as in Table 2 above and, again, suggests that NSFAS graduates with a Humanities degree are significantly less likely to be employed relative to graduates from other disciplines. The crucial finding, however, is that the field of study does not explain the lower probability of employment for graduates from HDIs at all (the coefficient is nearly unchanged between specifications I and II). In the third specification, a set of interaction terms between race and type of HEI are introduced. The interactions suggest that Coloured and 'Other' race groups that graduated from an HDI have a greater probability of being employed than Black African graduates.

Finally, models IV, V and VI in Table 3 investigate whether there are different employment outcomes across the three university clusters. The results show that there is a strong, significant and negative association between graduating from a cluster 3 university and being employed. Across all three specifications, the probability of being employed is about 16 percentage points lower for graduates of the cluster 3 institutions (relative to cluster 1 universities). These universities, as outlined above, are almost all HDIs, are non-research intensive and are generally not as well-resourced as the high-ranking universities in the country. They are, moreover, mostly located far away from the country's main urban centres. As with the other specifications in Tables 2 and 3, controlling for field of study has very little 'effect' on the association between university type and employment. This means that, controlling for other factors, the claim that students from lower quality universities may be studying generic subjects and are, therefore, less likely to find employment (e.g. Pauw et al. 2008) is not

**Table 3** The relative probability of employment (estimation by probit) for the 2015 graduate cohort, by institution type

| | I | II | II | IV | V | VI |
|---|---|---|---|---|---|---|
| Gender (ref: male) | | | | | | |
| Female | − 0.046*** | − 0.048*** | − 0.048*** | − 0.047*** | − 0.048*** | − 0.048*** |
| | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) |
| Race (ref: African) | | | | | | |
| Coloured | 0.151*** | 0.159*** | 0.121*** | 0.118*** | 0.124*** | 0.106*** |
| | (0.007) | (0.007) | (0.014) | (0.008) | (0.009) | (0.016) |
| Indian | 0.123*** | 0.115*** | 0.063+ | 0.078** | 0.068** | 0.082** |
| | (0.016) | (0.018) | (0.037) | (0.019) | (0.021) | (0.025) |
| White | 0.138*** | 0.134*** | 0.117*** | 0.126*** | 0.121*** | 0.117*** |
| | (0.010) | (0.016) | (0.014) | (0.011) | (0.012) | (0.014) |
| Other | 0.021* | 0.019* | − 0.049** | − 0.006 | − 0.014 | − 0.010 |
| | (0.009) | (0.009) | (0.017) | (0.009) | (0.009) | (0.049) |
| University type (ref: HAI) | | | | | | |
| HDI | − 0.101*** | − 0.100*** | − 0.108*** | | | |
| | (0.004) | (0.004) | (0.004) | | | |
| University type (ref: cluster 1) | | | | | | |
| Cluster 2 | | | | − 0.005 | − 0.003 | 0.001 |
| | | | | (0.017) | (0.005) | (0.005) |
| Cluster 3 | | | | − 0.161*** | − 0.165*** | − 0.165*** |
| | | | | (0.006) | (0.006) | (0.006) |
| Field of study (ref: Humanities) | | | | | | |
| Science Education | | 0.116*** | 0.116*** | | 0.124*** | 0.124*** |
| and Technology | | (0.006) | (0.006) | | (0.006) | (0.006) |
| Commerce | | 0.025*** | 0.024*** | | 0.021*** | 0.021*** |
| | | (0.005) | (0.005) | | (0.005) | (0.005) |
| Education | | 0.206*** | 0.206*** | | 0.211*** | 0.211*** |
| | | (0.006) | (0.006) | | (0.006) | (0.006) |
| Health | | 0.228*** | 0.228*** | | 0.222*** | 0.222*** |
| | | (0.011) | (0.011) | | (0.005) | (0.011) |
| Law | | 0.004 | 0.004 | | − 0.002 | − 0.002 |
| | | (0.010) | (0.010) | | (0.010) | (0.010) |
| Interactions (ref: African) | | | | | | |
| Coloured_HDI | | | 0.093*** | | | |
| | | | (0.025) | | | |
| Indian_HDI | | | 0.092+ | | | |
| | | | (0.052) | | | |
| White_HDI | | | 0.068+ | | | |
| | | | (0.039) | | | |
| Other_HDI | | | 0.098*** | | | |
| | | | (0.019) | | | |
| Coloured_cluster2 | | | | | | 0.039+ |
| | | | | | | (0.026) |
| Indian_cluster2 | | | | | | − 0.056 |
| | | | | | | (0.052) |
| White_cluster2 | | | | | | 0.018 |
| | | | | | | (0.041) |
| Other_cluster2 | | | | | | 0.003 |
| | | | | | | (0.048) |
| Coloured_cluster3 | | | | | | − 0.008 |
| | | | | | | (0.113) |
| Indian_cluster3 | | | | | – | – |
| White_cluster3 | | | | | – | – |

**Table 3** (continued)

| | I | II | II | IV | V | VI |
|---|---|---|---|---|---|---|
| Other_cluster3 | | | | | | − 0.028 |
| | | | | | | (0.051) |
| cons | 0.990*** | 0.724*** | 0.743*** | 0.952*** | 0.675*** | 0.681*** |
| | (0.013) | (0.019) | (0.019) | (0.017) | (0.022) | (0.022) |
| *N* | 54,777 | 50,799 | 50,799 | 54,777 | 50,799 | 50,799 |
| Pseudo *R*-sq | 0.022 | 0.052 | 0.053 | 0.034 | 0.067 | 0.067 |

Source: Own calculations from merged dataset constructed from NSFAS, HEMIS and SARS administrative data. Notes: Average marginal effects (AMEs) reported. Standard errors in parentheses. $^{+}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$

consistent with our findings. Rather, we find that there is a strong and significant association between the type of university from which NSFAS students graduate and the probability of employment and that this association holds irrespective of race[10], gender and the field of study in which a degree is obtained. In other words, we find that the stratification of the higher education system in South Africa is significantly associated with the probability of finding employment for low-income, publicly funded graduates.

## Discussion

This paper aimed to identify how the probability of graduate employment differed across a highly stratified higher education system. The analysis focused on a particularly vulnerable group of graduates from low-income households who have received means tested public funding to participate in higher education. Moreover, the context of post-apartheid South Africa represents an important example of a higher education system which is expected to address the crucial issues of transformation, the creation of a 'black' middle class and the creation of opportunities for a new and emerging 'social layer' (see Marginson 2016).

In terms of the overall rates of graduate employment, our findings are largely positive since the vast majority of NSFAS graduates since 2005 were employed in 2017. This finding offers support to other recent work (Van der Berg and Van Broekhuizen 2012) which shows that graduate unemployment rates are very low in South Africa while graduate absorption rates (albeit for the entire working age graduate population) have remained over 80% for most of the past two decades. While our data do not allow us to examine graduate unemployment, the fact that roughly three quarters of recent graduates were employed within a relatively short period after completing their degrees provides further support to the notion that the South African graduate labour market compares favourably[11] with other countries. For example, recent work

[10] The interaction terms for race and university cluster again demonstrate a lower probability of finding employment for black graduates. This set (e.g. column VI) of interactions also highlights the skewed racial composition of the cluster 3 HEIs since White and Indian graduates were dropped from the regression due to small sample sizes and collinearity. On the whole, however, the interaction terms are largely insignificant which suggests that there are not necessarily additional race and institutional effects on the probability of employment. However, the probability of employment among the cluster 3 universities (controlling for race) remains significantly lower across all specifications.

[11] One caveat is, of course, that we cannot identify whether the jobs which graduates report are related to their studies or commensurate with their level of education, i.e. whether they are 'graduate jobs'.

on the employment rates of recent graduates from Australia and the EU found an absorption rate of 68% measured 4 months after graduation (Australia) and 83% (EU) 1–3 years after graduation (OECD 2017). By comparison, the employment estimates based on the analysis of our merged dataset (already acknowledged as likely to be upper-bound estimates) appear plausible based on both the international and South African literature on graduate employment.

However, if we are to heed Marginson's (2016) warning of the 'unequalising' effects of hierarchies in the quality of higher education institutions, then a closer inspection of which universities are attended by low-income students and how this is associated with the labour market is required.

Put bluntly, in low- and middle-income countries, 'the more difficult issue is the relationship between educational inequality and socio-economic inequality' (Marginson 2016, p. 430). In these contexts, the role of higher education in promoting social mobility requires a much stronger focus on building more equal institutions with 'broadly allocated social value' (Marginson 2016, p. 430). In the South African context, the analysis we present in this paper provides empirical support for the claim that the institutional landscape has contributed to a polarising of universities into two distinct groups. The first is comprised of an elite research-intensive group at the top which is pulling away from the rest in terms of research outputs and post-graduate enrolments and completions. Moreover, Black African students in these universities are increasingly coming from the middle and upper classes and from the upper-tier of the school system. The second group, in contrast, remains largely under-graduate teaching institutions and is attended mostly by Black African students from poorer households (see Cooper 2019).

In investigating unequal outcomes in higher education and the way in which these are associated with institutional hierarchies, the second part of our empirical analysis showed that the probability of finding employment is not the same for all NSFAS graduates. Unfortunately, we find the same gender and race differences in employment probabilities that have been reported in most graduate destination and employment studies within the South African context. While a common finding in other studies, it is perhaps surprising that the lower probability of employment for Black African graduates is evident even in this specific group of publicly funded graduates. In other graduate employment studies, it is likely that the strong correlation between race and low income explains the higher risk of unemployment for Black African graduates. This is less likely to be the case in our study since all NSFAS graduates come from low-income households. Moreover, the finding that the lower employment probabilities for Black graduates and women did not change even after controlling for field of study and institution type suggests that there are other factors outside of the higher education environment that impact on employment, as some other authors have asserted (Akoojee et al. 2012; Walker and Fongwa 2017).

Similarly, the claim, often found in the literature (e.g. Moleke 2010; Pauw et al. 2008), that Black graduates, and particularly those from the HDIs, are obtaining general degrees which are not well matched with the needs of the labour market does not appear to explain the racial differences in employment in our analysis. While we do find significant differences in the probability of employment across the broad fields of study, the lower employment probabilities for (particularly Black African) graduates from the HDIs (and cluster 3 universities) are almost unchanged when controls for field of study are added. This suggests that the association between institution type and employment is largely independent of study choices. The possible reasons for the lower rates of employment for graduates from these HDIs may include a signalling effect to employers about the perceived quality of graduates from these institutions,

the actual quality of education provided at the HDIs, the distance of these institutions from the main economic activities in the country and, relatedly, the lack of social networks developed in these institutions (or among the students who attend these universities).

An additional possible explanation for the lower employment rates of graduates from the HDIs, and one which highlights a limitation of our data, is that it is possible that the HDIs admit students who are less prepared for university study or differ from students that attend the HAIs in some other way. The data provided for our analysis did not contain any information on schooling quality or academic performance (in either school or university). To the extent that poorly prepared students are more likely to attend an HDI, the effects of institution type in our estimations will be overstated. Schooling quality could also, over and above the impact it has on academic preparation, influence the social networks that graduates have when they enter the labour market. Given the history of basic schooling and higher education in South Africa, this is a strong possibility and an important area for future research.

## Conclusion

For higher education to play a positive role in promoting social mobility and reducing inequality, increases in higher education participation must be accompanied by equitable access to quality institutions. An important gauge of progress in this regard is the labour market success of university graduates, in general, and graduates from low-income households, in particular.

Publicly funded university graduates from low-income households are an important group in any society precisely because they have negotiated socio-economic disadvantage to not only gain access to a university but also to complete their studies and obtain a degree. In South Africa, it is, therefore, not surprising that the literature has focused on evaluating changes to access, retention and throughput, of these students within the higher education system. The South African NSFAS has succeeded in improving higher education access to historically disadvantaged students in one of the world's most unequal societies.

However, in making the transition from higher education to the labour market, inequality across higher education institutions remains a barrier to harnessing the full benefits of improved participation in higher education. The fact that most NSFAS graduates were enrolled in HDIs and that the absorption rates associated with these universities were significantly lower than those from the 'highly ranked' South African universities remains a concern. This finding of persisting inequalities in labour market outcomes corresponding with a hierarchy among higher education institutions in South Africa therefore suggests that increasing access to higher education is not enough and can only go so far within a highly unequal context. This is in line with similar findings internationally, where it appears that individuals with higher socio-economic status can capitalise on that advantage to gain access to higher quality and prestige institutions (Lucas 2009; Boliver 2011), so that this favourable position becomes in fact a resource that produces momentum for further gains (also referred to as the *Matthew effect*) (Davies and Zarifa 2012). Thus, more attention should be paid to improving the quality of institutions across the South African higher

education system. To fail to do so would be to fall into the trap of ignoring social inequalities which shape access to the best universities as well as the labour market returns to higher education.

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## References

Akoojee, S., Nkomo, M., & Twalo, T. (2012). Access to labour market equity: advancing the case for national development in South African Higher Education. *Alternation, 19*(2), 293–313.

Altbeker, A., & Storme, E. (2013). *Graduate unemployment in South Africa – a much exaggerated problem*. Johannesburg: The Centre for Development and Enterprise (CDE).

Arum, R., Gamoran, A., & Shavit, Y. (2007). More inclusion than diversion: expansion, differentiation and market structures in higher education. In Y. Shavit, R. Arum, & A. Gamoran (Eds.), *Stratification in higher education: a contemporary study* (pp. 1–35). Stanford: Stanford University Press.

Badat, S. (2019). The equity-quality/development paradox and higher education transformation post-1994. In J. Reynolds, B. Fine, & R. van Niekerk (Eds.), *Race, class and the post-apartheid democratic state* (pp. 241–281). Durban: UKZN Press.

Baldry, K. (2016). Graduate unemployment in South Africa: social inequality reproduced. *Journal of Education and Work, 29*(7), 788–812.

Bhorat, H. & Pillay, P. (2017). *The National Student Financial Aid Scheme (NSFAS) and the development of the higher education system in South Africa: a description of the demographics and performance of NSFAS beneficiaries*. Labour Market Intelligence Partnership (LMIP) Report 29.

Bhorat, H., Mayet, N., & Visser, M. (2010). Student graduation, labour market destinations and employment earnings. In M. Letseka, M. Cosser, M. Breier, & M. Visser (Eds.), *Student retention and graduate destination: higher education and labour market access and success* (pp. 97–124). Cape Town: HSRC Press.

Boliver, V. (2011). Expansion, differentiation, and the persistence of social class inequalities in British higher education. *Higher Education, 61*, 229–242.

Buckner, E. (2013). Access to higher education in Egypt: examining trends by university sector. *Comparative Education Review, 57*(3), 527–552.

Cape Higher Education Consortium (CHEC). (2013). *Pathways from university to work: a graduate destination survey of the 2010 cohort of graduates from the Western Cape Universities*. Wynberg: CHEC.

Centre for Higher Education Trust (CHE). (2004). *South African Higher Education in the first decade after democracy*. Pretoria: Council on Higher Education.

Chevalier, A., & Conlon, G. (2003). *Does it pay to attend a prestigious university?* Bon: Institute for the Study of Labor (IZA).

Cooper, D. (2015). Social justice and South African university student enrolment data by 'race', 1998–2012: from 'skewed revolution' to 'stalled revolution'. *Higher Education Quarterly, 69*(3), 237–262.

Cooper, D. (2019). South African university student trends by 'race' and (possibly) social class, 1988-1998 and 2000-2012: Further insights into a "stalled revolution". In J. Reynolds, B. Fine, & R. van Niekerk (Eds.), *Race, class and the post-apartheid democratic state* (pp. 282–337). Durban: UKZN Press.

Cosser, M. (2003). Graduate tracer study. In M. Cosser, S. McGrath, A. Badroodien, & B. Maja (Eds.), *Technical college responsiveness: learner destinations and labour market environments in South Africa* (pp. 27–56). Cape Town: HSRC Press.

Davies, S., & Zarifa, D. (2012). The stratification of universities: Structural inequality in Canada and the United States. *Research in Social Stratification and Mobility, 30*, 143–158.

De Villiers, P., van Wyk, C., & van der Berg, S. (2013). *The first five years project - a cohort study of students awarded NSFAS loans in the first five years 2000 - 2004. Stellenbosch Economic Working Paper 11/13*. Department of Economics and the Bureau for Economic Research at the University of Stellenbosch.

Dolton, P., & Vignoles, A. (2000). The incidence and effects of overeducation in the U.K. graduate labour market. *Economics of Education Review, 19*(2), 179–198.

DPRU (2006) *Graduate unemployment in post-apartheid South Africa: nature and possible policy responses*. Research Report Compiled for Standard Bank and Business Leadership South Africa. University of Cape Town: Development Policy Research Unit.

Fisher, G., & Scott, I. (2011). *The role of higher education in closing the skills gap in South Africa. Closing the Skills and Technology Gap in South Africa: Background Paper 3*. Africa Region: World Bank Human Development Group.

Green, F., & Zhu, Y. (2010). Overqualification, job dissatisfaction, and increasing dispersion in the returns to graduate education. *Oxford Economic Papers, 62*, 740–763.

Hussain, I., McNally, S., & Telhaj, S. (2009). University quality and graduate wages in the UK. In *Institute for the Study of Labor (IZA)*. Germany: Bonn.

Johnstone, D. B. (2004). Higher education finance and accessibility: tuition fees and student loans in Sub-Saharan Africa. *JHEA/RESA, 2*(2), 11–36.

Lucas, S. (2009). Stratification theory, socioeconomic background, and educational attainment: a formal analysis. *Rationality and Society, 21*, 459–511.

Marginson, S. (2016). The worldwide trend to high participation higher education: dynamics of social stratification in inclusive systems. *Higher Education, 72*(4), 413–434.

McGuinness, S., & Sloane, P. (2011). Labour market mismatch among UK graduates: an analysis using REFLEX data. *Economics of Education Review, 30*(1), 130–145.

Moleke, P. (2010). The graduate labour market. In M. Letseka, M. Cosser, M. Breier, & M. Visser (Eds.), *Student retention and graduate destination: higher education and labour market access and success*. Cape Town: Human Science Research Council Press.

National Student Financial Aid Scheme (NSFAS). (2017). Annual Report 2016/17: 25 years of funding post-school education 1991 – 2016.

National Treasury, Republic of South Africa. (2016). Performance and expenditure review (PER): National Student Financial Aid Scheme (NSFAS). February.

Organisation for Economic Cooperation and Development (OECD) (2017) OECD employment outlook, Accessed online 20 November. https://data.oecd.org/emp/employment-rate.htm

Pauw, K., Oosthuizen, M., & van der Westhuizen, C. (2008). Graduate unemployment in the face of skills shortages: a labour market paradox. *South African Journal of Economics, 76*(1), 45–57.

Reddy, V., Bhorat, H., Powell, M., Visser, M., & Arends, F. (2017). *Skills supply and demand in South Africa. LMIP Report*. Human Sciences Research Council: Pretoria.

Rogan, M., & Reynolds, J. (2016). Schooling inequality and the labour market: evidence from a graduate tracer study in the Eastern Cape, South Africa. *Development Southern Africa, 33*(3).

Rogan, M., Reynolds, J., du Plessis, U., Bally, R., & Whitfield, K. (2015). *Pathways through university and into the labour market: report on a graduate tracer study from the Eastern Cape*. Pretoria: LMIP Report. Human Sciences Research Council.

Schendel, R., & McCowan, T. (2016). Expanding higher education systems in low- and middle-income countries: the challenges of equity and quality. *Higher Education, 72*(4), 407–411.

Schomburg, H., & Teichler, U. (2011). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna Process*. Netherlands: Sense Publishers.

Shen, H., & Ziderman, A. (2008). Student loans repayment and recovery: International comparisons. *Higher Education, 53*(3), 315–333.

Sutherland, J. (2012). Qualifications mismatch and skills mismatch. *Education and Training, 54*(7), 619–632.

Teichler, U. (1999). Research on the relationships between higher education and the world of work: past achievements, problems and new challenges. *Higher Education, 38*, 169–190.

Teichler, U. (2000). Graduate employment and work in selected European countries. *European Journal of Education, 35*(2), 141–156.

Teichler, U. (2007). Does higher education matter? Lessons from a comparative graduate survey. *European Journal of Education, 42*(1), 11–34.

Triventi, M. (2011). The role of higher education stratification in the reproduction of social inequality in the labour market. A comparative study of recent European graduates. Munich Personal RePEc Archive Paper No. 35996. https://mpra.ub.uni-muenchen.de/35996/.

Triventi, M. (2013a). Stratification in higher education and its relationship with social inequality: a comparative study of 11 European countries. *European Sociological Review, 29*(3), 489–502.

Triventi, M. (2013b). The role of higher education stratification in the reproduction of social inequality in the labor market. *Research in Social Stratification and Mobility, 32*, 45–63.

Van Broekhuizen, H. (2016). *Graduate unemployment and higher education institutions in South Africa. Stellenbosch Economic Working Papers: 08/16*. Stellenbosch: Department of Economics, University of Stellenbosch.

Van der Berg, S., & van Broekhuizen, H. (2012). *Graduate unemployment in South Africa: a much exaggerated problem. Stellenbosch Economic Working Papers: 22/12*. Stellenbosch: Department of Economics, University of Stellenbosch.

Walker, M., & Fongwa, S. (2017). *Universities, employability and human development*. London: Palgrave, Macmillan.

Ziderman, A. (2017). Experience with student loans, higher education. In J. Shin & P. Teixeira (Eds.), *Encyclopedia of international higher education systems and institutions*. Dordrecht: Springer.



## Affiliations

**Angelique Wildschut**[1,2] · **Michael Rogan**[3,4,5] · **Bongiwe Mncwango**[6]

[1] Research and Policy, National Student Financial Aid Scheme (NSFAS), Cape Town, South Africa

[2] Research Associate, Sociology Department, University of Pretoria, Pretoria, South Africa

[3] Associate Professor, Neil Aggett Labour Studies Unit (NALSO), Rhodes University, Grahamstown, South Africa

[4] Honorary Research Fellow, Human Sciences Research Council (HSRC), Pretoria, South Africa

[5] Research Associate, Women in Informal Employment: Globalizing and Organizing (WIEGO), Manchester, UK

[6] Research Manager, Human Sciences Research Council (HSRC), Pretoria, South Africa