



Youth Transitions from Higher Education into the Labour Market

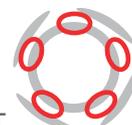
Haroon Borhat, Adaiyah Lilenstein, Kezia Lilenstein and Morné Oosthuizen

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Haroon Borat, Adaiiah Lilenstein, Kezia Lilenstein and Morné Oosthuizen



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www.lmip.org.za

Education and Skills Development (ESD) Programme
Human Sciences Research Council
134 Pretorius Street
Pretoria, 0002

Contact person for correspondence: Prof Haroon Borat
Email: haroon.bhorat@uct.ac.za
Tel: +27 (0)21 650 5705

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ABBREVIATIONS AND ACRONYMS

CHEC	Cape Higher Education Consortium
CPUT	Cape Peninsula University of Technology
DHET	Department of Higher Education and Training
GDS	Graduate Destination Survey
GPA	grade point average
SU	Stellenbosch University
UCT	University of Cape Town
UWC	University of the Western Cape
WEF	World Economic Forum

1. INTRODUCTION

Youth around the globe have a more difficult time finding employment than older individuals (World Bank, 2016), and South Africa is no exception. In South Africa, the national unemployment rate averages around 25% (narrow definition; South African Labour Force Surveys). For youth aged 15 to 34 years, it was 37% in 2015, while, for adults aged 35 to 64, it was 17% in the same year (Statistics South Africa, 2015a). Not surprisingly, given South Africa's history, this rate is higher for African (40%) and Coloured (32%) people when compared with Indian/Asian (23%) and white (11%) individuals (Statistics South Africa, 2015a). Whilst females in South Africa enjoy a slightly higher school completion rate than males (Statistics South Africa, 2013a), female youth in South Africa are also at a disadvantage in relation to labour market prospects (Statistics South Africa, 2015a). This is due, in part, to gender discrimination, which results in females with higher qualifications than males (matric vs incomplete secondary school) still struggling more to find work (Mlatsheni & Leibbrandt, 2015).

While education cannot erase the race and gender gap completely, it does go a considerable way in ensuring employment for specific education cohorts. Tertiary education is also associated with better-quality employment, including higher wages (Branson & Leibbrandt, 2013). Individuals with a tertiary education also have a far lower unemployment rate than those without one. In 2015, the unemployment rate was 26% and 28% for individuals with a matric diploma and less than a matric diploma, respectively. This decreases to 15% for individuals with a tertiary diploma or certificate, and to 5% for those with a tertiary degree (own calculations; Statistics South Africa, 2015b). This indicates that, while tertiary education is a marker for

better employment outcomes, it is not a guarantee of obtaining employment, and substantial differentials exist even between individuals who have obtained a tertiary education. These differences are also pronounced when looking at unemployment rates between the sexes and the races (own calculations; Statistics South Africa, 2015b).

This gives cause for an examination of the factors influencing the success of tertiary graduates in the workplace in order to better understand the pathway from higher education into the labour market. This report therefore seeks to shed light on the factors that differentiate those who transition from higher education into employment from those who transition into unemployment. While characteristics such as race and gender are evaluated, particular attention is given to the role of higher education institutions, to the field studied and to the qualification obtained. This is important given that existing literature on employment outcomes in South Africa assumes that (at least part of) existing race differentials are due to omitted factors such as these. The research makes use of a new data set, the Cape Higher Education Consortium's (CHEC) Graduate Destination Survey conducted in 2010 (CHEC, 2013) which collected background and employment information on graduates from four universities in the Western Cape, South Africa. This begins in Section 2, by providing background information on youth in the labour market and the role played by education, as well as racial and gender dynamics, in the various labour market outcomes studied. An overview of CHEC's GDS, including a discussion of its methodology and the content of the survey, is given in Section 3. Section 4 then provides results, while Section 5 concludes the report.

2. BACKGROUND

Youth are a vulnerable population

In contrast to the generally accepted international classification of youth as individuals aged 15 to 24 years (UNESCO, 2016), youth in South Africa are defined as those aged between 15 and 34. This broader categorisation reflects the belief that, due to historical imbalances, South Africans are likely to remain in a 'youth-like' state for longer periods (The Presidency, 2009), where 'youth-like state' refers to dependence on others (UNESCO, 2016).

South Africa's is a young population, with youth accounting for a larger share of the working-age population than adults aged 35 to 64 (Statistics South Africa, 2015a). In 2015, almost 37% of South African youth were unemployed, while the adult rate was 20 percentage points lower at 17% (Statistics South Africa, 2015a). There are a number of reasons why employment outcomes may be worse for youth than for the adult population. There is well-documented evidence of the importance of social networks in job search in South Africa (Burns, Godlonton & Keswell, 2010; Dinkelman, 2004; Dinkelman & Pirouz, 2002). While adults are more likely to have strong social networks linking them to employment opportunities, youth are more likely to be surrounded by young people who themselves are unemployed. In addition, the cost of job search may be particularly prohibitive for youth, who are less likely to have accumulated savings. The expected pay-off from job search is also lower for youth due to the lower likelihood of employment. From the perspective of the firm, hiring youth may be relatively more of a risk because they have less experience in the job market and are unlikely to have extensive proof of job performance.

In addition to suffering job scarcity, when youth do find jobs these are often less stable and of a lower quality than the jobs enjoyed by their adult

counterparts (Bhorat & Mayet, 2012; Statistics South Africa, 2015a). During the recent recession, job losses among youth far outstripped job losses for the adult population and, even when adult employment started to increase around 2011, job loss among youth was still ongoing (Statistics South Africa, 2015a). This may be due to 'last-in, first-out' policies employed during periods of job shedding.

Although being young is a disadvantage for all individuals in terms of labour market outcomes, Africans and women are more affected by this disadvantage than are other groups (Bhorat & Mayet, 2012; Statistics South Africa, 2015a). The difference in the unemployment rate between African youth and African adults peaked at 23 percentage points over the period 2008 to 2015. In contrast, the same statistic for the white population reached a maximum of 8.2 percentage points over the same period (Statistics South Africa, 2015a). Similarly, although male and female unemployment rates for adults are sometimes comparable (and can even be higher for females in some provinces), differences between male and female unemployment rates for youth are notable. The female youth unemployment rate was 41% in 2015, compared with 34% amongst male youth. However, the gap in the unemployment rate for males and females narrowed from 9.6 percentage points in 2008 to 6.9 percentage points in 2015 (Statistics South Africa, 2015a).

Given the above, it is unsurprising that young African females are the most vulnerable population group in the South African labour market. In 2015, the young African female unemployment rate was 45%, but was substantially lower for young African males, at 37%. However, the female unemployment rate was lower than the male unemployment rate amongst young white individuals, at 11% and 12%, respectively. This indicates that, while average

gender differentials in employment amongst youth are large, the vulnerability of females to unemployment is notably race-specific. Clearly, both race and gender play a large and interconnected role in mediating the effects of being young and seeking work in South Africa.

Education is a way of improving employment prospects

In 2015, 52% of youth aged 20 to 35 had not completed their high school education (Statistics South Africa, 2015b). These individuals, and even some of those who have completed high school, may leave the school system poorly educated and hence enter the labour market without the necessary knowledge, skills and behaviours for the world of work. We know that, even at the Grade 6 level, a large proportion of South African students do not acquire the grade-appropriate basic literacy and numeracy skills (Spaull & Taylor, 2015). Within countries, education quality varies widely between regions and between schools, with poorer individuals at a great disadvantage when it comes to work-appropriate education (Jimenez, King & Tan, 2012).

Those individuals who make it to higher education are rewarded well for their tertiary degree. Besides higher pay for the employed (Branson & Leibbrandt, 2013), they also benefit from higher employment rates overall (Bhorat & Kimani, 2015), with the unemployment rate of graduates being 11% in 2015 compared with 27% for those without a tertiary education (Statistics South Africa, 2015b). During the period 2008 to 2015, youth of every education level suffered job losses, except those who held a tertiary qualification (Statistics South Africa, 2015a). The relatively high unemployment rates for individuals without a tertiary education are thought to be related, at least in part, to a skills mismatch between what is required by employers and what job seekers can do. As South African firms are forced to adopt technological change in order to remain competitive, the input ratio of capital to labour has increased. This capital deepening has been most prevalent in the primary and secondary sectors, leading to a decline in the share of unskilled labour relative to skilled labour over the last four decades (Bhorat & Hodge, 1999; Bhorat, 2004;

Edwards, 2001; Burger & Woolard, 2005; Bhorat & Mayet, 2012).

This indicates that labour demand is driven by skills-biased technical change, which serves to increase demand for skilled workers at the expense of low-skilled workers. Indeed, surveyed South African employers state that they cannot find enough workers with the required skills to grow their businesses (Jimenez et al., 2012). This is confirmed by the latest World Economic Forum's (WEF) Global Competitiveness Report, which ranked an 'inadequately educated workforce' as the fifth-most problematic constraint on doing business in South Africa (WEF, 2015). Consequently, South Africa is in the challenging position of having an exceedingly high unemployment rate coupled with unmet demand for high-skilled workers, which may be substantial enough to severely inhibit business growth. Dealing with this skills mismatch is therefore of critical importance in addressing South Africa's unemployment crises. It is notable, then, that recent years have seen an improvement in the education levels of both youth and adults, although these levels remain worryingly low (Statistics South Africa, 2015a).

Nationally, in 2015, less than one-fifth of employed youth worked in skilled occupations. More than half worked in semi-skilled occupations, and almost a third worked in low-skilled occupations (Statistics South Africa, 2015a). Interestingly, and despite their lower employment rates, a larger proportion of female youth work in skilled occupations than do male youth, with a difference of 3.8 percentage points (Statistics South Africa, 2015a). This may reflect the growth of employment in high-skilled services, where entry barriers for women are lower than in other sectors. This may also indicate the persistence of gender discrimination in the employment of low- and semi-skilled individuals. Similarly, African youth are far less likely to be employed in skilled positions than white youth (13% and 53% work in skilled positions, respectively). Coloured youth are even less likely to work in skilled positions than African youth (10.5%), and Indian/Asian youth find themselves between the two extremes but closer to the white average (36%) (Statistics South Africa, 2015a).

These differences in the type of employment obtained amongst youth may be due to differences in educational achievement. However, it is important to note that, even when education levels are similar, there are stark differences in the labour market experience of graduates of different race groups. While unemployment rates amongst African tertiary education holders is 16%, it is only 3% amongst white individuals holding a tertiary qualification (Statistics South Africa, 2015b). This difference is even greater when looking only at youth, with unemployment rates increasing to 27% and 6% amongst African and white individuals with a tertiary qualification, respectively (Statistics South Africa, 2015b).

Employment outcomes are related to certain characteristics of the tertiary degree

During apartheid, black individuals¹ were prohibited from studying many of the fields that were open to white individuals. Since the fall of apartheid, these fields have become accessible to the previously excluded groups (Bhorat & Kimani, 2015). Similarly, women have been discouraged from attending higher education institutions throughout history, but this trend is changing. Hence, in the last two decades, the participation rates of black individuals and women in higher education institutions have increased significantly (Bhorat & Kimani, 2015). In 2013, Africans (68%) and women (54%) made up the majority of those in public, contact higher education in South Africa (DHET, 2013). However, it should be noted that, for African individuals, this proportion is still far below the actual population rates of this group (80%; Statistics South Africa, 2015a), meaning that they are still underrepresented at higher education institutions. In reflecting on this, it is notable that, while half of all Indians/Asians and whites enrol for tertiary degrees, only 11% and 7% of all Africans and Coloureds, respectively, do the same (Bhorat & Kimani, 2015).

Owing to the country's history of segregation and racially based policies, the low tertiary enrolment rates of African and Coloured individuals have been

attributed to the poor quality of primary and secondary schooling and to poverty, among other factors, which are still strongly related to race (Bhorat & Kimani, 2015). Spaul (2013) argues for the bimodality of the existing school system, with historically black schools unable to impart the necessary literacy and numeracy skills. This can be traced, at least partly, to managerial inefficiency dating back to apartheid, which pro-poor reforms have as yet been unable to overcome (Van der Berg, 2007). Segregation was institutionalised even among higher education institutions, resulting in quality differentials between these institutions as well. During apartheid, higher education institutions designated for whites received more funding and resources and offered a larger range of courses than those designated for Africans (Bhorat & Kimani, 2015). Although the years since the end of apartheid have seen substantial efforts aimed at decreasing the quality differentials of these institutions, historically black education institutions are still at a disadvantage. This disadvantage is even evident in the amount of funding that these institutions receive today – with historically white institutions receiving substantially more funding on average – which is most likely due to lower research and teaching outputs emanating from the previously disadvantaged institutions (Bhorat & Kimani, 2015).

The perceived skills mismatch which characterises the South African labour market may be related to the low (real or perceived) quality of historically black institutions. Firms have expressed concern that even tertiary graduates often do not have the skills required by industry (Pauw et al. 2006). Furthermore, existing race differentials in graduate employment outcomes may be related to the characteristics of the institution attended. If African individuals are more likely to attend historically black universities, which firms may view as less desirable in terms of quality of the qualification obtained, this may be driving the differences in employment outcomes found between races. Employment prospects are also related to the field of study, with higher unemployment rates amongst graduates in the fields of education, training and development (Burger & Woolard, 2005). Thus, at an institutional level, the skills mismatch may also be related to a mismatch in the courses offered and the skills demanded by

¹ As per convention, we use the term 'black' here to refer to people classified as African, Indian, Asian and Coloured.

employers (Bhorat & Kimani, 2015). Relatedly, wages vary substantially among individuals with similar qualifications even when they are employed, with the distribution favouring white individuals. This phenomenon may also be related to race-associated differences in education quality (Burger & Jaffa, 2006). Fortunately, these racial differences do appear to be on the decline, despite their apparent persistence in the South African economy (Branson & Leibbrandt, 2013; Bhorat & Mayet, 2012).

Overall, it is clear that education is a key factor driving success in the labour market. Employment outcomes differ considerably between individuals with and without a tertiary education. However, obtaining a tertiary education is not a guarantee of labour market success, and differences in employment outcomes exist between graduates. In particular, tertiary degree holders fare substantially better in the labour market than those graduating with a diploma or certificate. In addition, women and African graduates have lower employment rates than males or white graduates. However,

gender differences are less pronounced than differences between the races, with white female graduates actually experiencing higher employment rates than white male graduates. The existing race differences in employment outcomes, even amongst tertiary graduates, may be due to perceived or real differences in the quality of education obtained. Factors such as institution attended (historically black or white), qualification studied and grade point average (GPA) obtained may all be driving (at least some of) the higher unemployment rate amongst African graduates. Controlling for institutional differences in their study of graduate labour market outcomes, Bhorat and Mayet (2012) find that race differences in employment outcomes remain important, even after controlling for the type of institution attended. This report serves to add to the existing literature by including a range of institutional-level factors in the employment equation. It may be that the importance of race in determining employment outcomes for graduates is diminished when these effects are controlled for.

3. THE CAPE HIGHER EDUCATION CONSORTIUM'S GRADUATE DESTINATION SURVEY

The Western Cape is one of nine provinces in South Africa and is home to four public universities: the Cape Peninsula University of Technology (CPUT), Stellenbosch University (SU), the University of Cape Town (UCT), and the University of the Western Cape (UWC). The Cape Higher Education Consortium (CHEC) is a collaborative body with these four universities as its members, and its aim is to establish the Western Cape as a strong higher education region. The Graduate Destination Survey (GDS) comprised a tracer survey that was administered by each of the four universities to their 2010 cohorts of graduates who had completed a certificate/diploma, undergraduate degree or postgraduate degree in that year.

The main aim of the GDS was to allow for a better understanding of the varied pathways into work for the graduates of the four universities. As such, the GDS included questions on individual characteristics (race, age, gender, etc.), university life (field, qualification obtained, whether the student received a bursary, etc.) as well as post-education activities (work-seeking behaviour, current employment status, etc.). The GDS did not include information on students who dropped out before graduation, meaning that the employment outcomes of these nongraduates cannot be analysed with this data.² The sampling frame consisted of 24 710 individuals (i.e. each one of the 2010 graduates from each university), but, in practice, the universities received responses from only 22.5% of the relevant graduates (on average across the institutions), making the final sample size 5 560 individuals. Although UWC had the

lowest absolute number of responses ($n = 995$), this was actually the highest response rate overall (26.7%). The other response rates were very similar, at 21.9% for UCT, 21.8% for CPUT and 21.6% for SU. Unfortunately, it is possible, and even probable, that non-random factors influenced which graduates responded to the survey and which did not. With the aim of the present research in mind (which seeks to determine the factors associated with transitions to employment), it is of particular importance to understand whether the employment status of the graduate was related to their decision or ability to complete the survey. Similarly, it is of importance to understand whether factors associated with employment (e.g. gender) were also associated with survey response. If survey response was associated with these factors, then our results are likely to be biased.

One factor which certainly led to non-random response was the fact that the universities contacted both currently enrolled and non-enrolled graduates, and that they contacted currently enrolled graduates using their current institutional email address. Hence, those who were currently enrolled were more likely to receive the correspondence, since that email address was definitely still in use at the time, and were consequently more likely to respond. This means that labour market status, in terms of non-participation in relation to participation, is certainly biased. However, a recent study showed that these issues have limited impact in an employment equation (Branson & Leibbrandt, 2017), which is the analysis that we undertake below.

² This truncated sample means that our estimates of employment outcomes are upwardly biased. Our econometric estimates may also underestimate the impact of the characteristics concerned on labour market outcomes in cases where these are consistent with the sample of unobservable dropouts.

4. RESULTS

Descriptive statistics

Table 1 displays some of the characteristics of the graduate sample, overall and by institution. Figures sum to 100% within each column, within each left-hand side category. Most of the sample was currently in the labour market and employed (almost 90%); there were slightly more females than males; just over two in five graduates received a bursary while studying; most individuals graduated with an undergraduate degree, followed by graduation with a postgraduate degree (the least being those who graduated with a certificate or diploma); most graduates had parents who also held a tertiary degree; most individuals were white, followed by African, and then Coloured, with a very small proportion being Indian/Asian; and most individuals graduated with a qualification in the field of Business and Commerce, followed by Science, Engineering and Technology, with the fewest individuals graduating with a qualification in Law.

The right-hand side of Table 1 presents characteristics of the graduate sample separated by institution. It can be observed that, while Stellenbosch University (SU) and the University of Cape Town (UCT) had a higher proportion of employed graduates relative to the Cape Peninsula University of Technology (CPUT) and the University of the Western Cape (UWC), the latter universities actually had higher proportions of students who were currently in the labour market. This is likely due to SU and UCT having greater proportions of students pursuing postgraduate qualifications, and fewer students pursuing diplomas, than their counterparts. Indeed, the graduate sample displays these patterns. CPUT, in particular, tends to produce graduates with diplomas and does not tend to produce graduates with postgraduate degrees, as compared with the other three universities. Bursary receipt is common at all universities, although there

is a 12 percentage point difference between the proportion of graduates who received a bursary at UWC and SU, which had the highest and lowest proportions receiving bursaries, respectively.

It is notable, given the different racial profiles of the universities, that, while UCT and SU are historically white universities, UWC is a historically African university and CPUT is the result of a merger between a historically Coloured university (the Peninsula Technikon) and a historically white university (the Cape Technikon), which both became mixed-race universities in 1987 shortly before the fall of apartheid. Although education can open up opportunities for youth and other vulnerable populations (in terms of labour market outcomes), this continued segregation, although not as stark as during apartheid times and not as deliberate, is likely to contribute to sustaining the inequalities that exist socially and economically in South Africa, given the relative advantages that historically privileged institutions still have.

The distribution across field of study is similar across the institutions, with all universities having high proportions of graduates from the field of Science, Engineering and Technology and the field of Business and Commerce. CPUT also focuses, to a lesser extent, on Health and Education, while UCT focuses more on Humanities and the Social Sciences and SU on Humanities and the Social Sciences and Health. UWC has the greatest spread of graduates across faculties. Hence, while field of study may be a driver of differing employment rates, no clear pattern can be observed simply from the descriptive analysis presented. Finally, levels of parental education also vary substantially between universities. CPUT and UWC have far higher proportions of students with mothers and/or fathers with less than a matric qualification (the greatest difference being 30 percentage points between

UWC and UCT in terms of mother's education), while UCT and SU have far higher proportions of students with mothers and/or fathers with a tertiary degree (the greatest difference being 34 percentage points between UCT and UWC in terms of father's

education). While relatively high parental education may be associated with factors that could influence employment (such as social networks), it is unlikely that parental education itself directly influences employment status.

Table 1: Characteristics of the graduate sample

	Total	Institution			
		CPUT	UCT	SU	UWC
Employment status^a					
Employed	89.9	84.4	93.7	95.1	86.6
Not employed	10.1	15.6	6.3	4.9	13.4
Labour market status					
In the labour market	82.8	92.0	78.4	76.8	83.3
Not in the labour market	17.3	8.0	21.6	23.2	16.8
Gender					
Male	43.6	43.1	46.7	43.5	39.9
Female	56.4	57.0	53.4	56.5	60.2
Bursary receipt					
Yes	42.3	46.8	40.1	36.5	48.5
No	57.7	53.2	59.9	63.5	51.5
Qualification					
Certificate/diploma	21.8	61.4	4.7	1.5	11.1
Undergraduate degree	44.0	35.8	48.3	44.1	53.1
Postgraduate degree	34.3	2.9	47.1	54.4	35.7
Mother's education					
Tertiary	46.4	30.5	60.9	57.8	28.8
Matric	23.7	27.6	22.0	21.4	23.8
Some/none	29.9	42.0	17.1	20.8	47.4
Father's education					
Tertiary	50.7	31.9	66.2	62.1	32.4
Matric	21.6	25.7	18.1	19.7	24.5
Some/none	27.7	42.5	15.7	18.2	43.2
Race					
African	31.29	45.9	25.4	17.0	39.7
Coloured	27.04	35.0	16.7	17.0	47.6
Indian/Asian	3.66	1.4	7.4	1.3	7.3
White	38.01	17.7	50.6	64.7	5.4
Field					
Science/Engineering/Technology	25.33	31.7	27.0	22.0	16.3
Business/Commerce	29.98	38.2	29.6	25.9	22.3
Humanities/Social Sciences	17.09	6.2	24.5	20.7	19.4
Health	12.48	8.2	8.1	17.4	18.5
Law	2.88	0.2	2.8	3.1	7.9
Education	8.64	10.5	6.6	6.6	12.5
Other	3.60	5.1	1.4	4.2	3.1

Notes:

1. All proportions have been weighted according to institution and qualification type.
2. The proportion employed is calculated as a percentage of the total labour force (i.e. the employed and the unemployed and not including those who were not economically active).

Table 2 displays the employment rates of different individuals. Marginally more males were employed than females, while substantially fewer African and Coloured individuals were employed compared with Indians/Asians and whites. Africans had the lowest employment rates overall, while Indians/Asians had the highest, with their employment rates separated by a 15.8 percentage point gap. It is interesting that Indian/Asian individuals were even more likely to be employed than white individuals, which may be related to the fact that social spending for Indians/Asians was relatively higher than for African and Coloured individuals during apartheid (with Indian/Asian spending on education making up half the social-spending budget) (Van der Berg, 2001), and that Indian/Asian individuals qualify in terms of the South African employment equity regulations. In addition, relatively more whites graduated in the field of Humanities and the Social Sciences (21.2%) – which had the lowest employment rate of the different fields – compared with Indians/Asians (13.3%). It should be noted that the racial disparities seen at the tertiary-institution level were almost certainly related to racial disparities accumulated throughout the education system up to that point.

In terms of employment status more generally, it can be seen from Table 2 that individuals who graduated in the field of Humanities and the Social Sciences had the lowest employment rates, while individuals who graduated in the field of Education had the highest, with a 10 percentage point difference between the two. It is interesting that the field of Education was associated with a high employment rate, given that Burger and Woolard (2005) found this field to be associated with relatively high unemployment rates.

Individuals with a postgraduate degree had higher employment rates than those with an undergraduate degree, who, in turn, had higher employment rates than those with a certificate or diploma. The employment rate for those with an undergraduate degree was more similar to the postgraduate employment rate than the certificate/diploma employment rate. Individuals with a postgraduate degree had a 12.2 percentage point higher employment rate than those with a certificate or diploma. These statistics are in line with those from

the Quarterly Labour Force Survey, although graduate employment rates are higher using this data (Statistics South Africa 2015b; own calculations).

Table 2: Relationship between individual characteristics and employment

	Proportion employed
Gender	
Male	91.3
Female	88.8
Race	
African	81.2
Coloured	93.1
Indian/Asian	97.0
White	94.8
Field	
Science/Engineering/Technology	87.7
Business/Commerce	89.0
Humanities/Social Sciences	86.2
Health	95.0
Law	93.6
Education	96.2
Qualification	
Certificate/diploma	82.0
Undergraduate degree	90.8
Postgraduate degree	94.2

Notes:

1. All proportions have been weighted according to institution and qualification type.
2. The proportion employed is calculated as a percentage of the total labour force (i.e. the employed and the unemployed and not including those who were not economically active).

This profile of employment outcomes relates to what was discussed above in terms of reasons why UCT and SU are associated with higher employment outcomes than CPUT and UWC. Either qualification type (diploma versus postgraduate degree, etc.) or race (or both) could be driving these differences, while field of study may have differing effects on the employment rates of university graduates, depending on the field itself. Gender does not appear to be a particularly important determinant of employment outcomes, but gender differentials could be hidden by variations in other factors. Although these descriptive statistics point to some interesting and important correlates of employment status, such statistics may or may not represent significant determinants of employment in a

statistical sense. The following section will therefore present the results of a multivariate employment equation which seeks to understand which of these variables are significantly related to employment, and in what measure.

Econometric modelling

Variables thought to influence employment are gender, race, location and a host of institutional-level factors. We expect race differentials even after controlling for institutional-level factors, particularly the fact that African individuals will have the lowest likelihood of employment. Those with postgraduate degrees are also expected to have a greater likelihood of employment than those with an undergraduate degree or a diploma/certificate. Finally, we expect graduates from the Health and Education faculties to have an increased likelihood of employment when compared with graduates from other faculties. This is due to their almost automatic employment in the public sector. Specifically, many health graduates are required to do a one-year community service internship after graduation, thereby guaranteeing employment for these graduates.

The results of this model are given in Table 3. The coefficients shown are the average marginal effects. Average marginal effects give the average change in the probability of employment due to a discrete change in the relevant independent variable. For example, if the coefficient on 'male' is 0.04, this is interpreted as: 'On average, male probability of employment is 4 percentage points higher than female probability of employment'.

In the models presented in Table 3, the base group used for gender is female, race is African individuals, field is Science, Engineering and Technology, qualification is individuals with an undergraduate degree, institution is UWC, and, for current location, it is the Western Cape. Finally, those who took Higher or Standard Grade Mathematics are compared with those who did not take Mathematics at school (the base group).

In Table 3, females are less likely to be employed than males (by 2 percentage points; $p < .05$), Africans

are less likely to be employed than other race groups (with the difference in probabilities ranging between 8 and 12 percentage points; $p < .01$ in all cases), Higher Grade Mathematics improves the probability of employment (by 4 percentage points; $p < .01$) compared with those who do not take Mathematics at school, while having completed Standard Grade Mathematics is not a significant indicator of employment probability. Individuals in the faculties of Health and Education are more likely to be employed than those in Science, Engineering and Technology (by 8 and 12 percentage points, respectively; $p < .01$), while those in the Humanities and Social Sciences are less likely to be employed (by 3 percentage points; $p < .05$). Having a certificate or diploma decreases employment probability (by 5 percentage points; $p < .01$), while having a postgraduate degree increases it (by 3 percentage points; $p < .05$) compared with those individuals with an undergraduate degree. Graduates from UWC are the least likely to be employed (with the difference in probabilities ranging between 4 and 7 percentage points; $p < .01$ in all cases), and the current location of the individual appears to be little related to employment, except in the case where those currently residing in the Eastern Cape are less likely to be employed than those in the Western Cape (by 4 percentage points; $p < .1$).

In regressions not given here,³ this model was rerun several times with different base groups, since we are interested in more results than just those given here. For example, the results in this table only give the employment rates of Coloured individuals as compared with African individuals, but we are also interested in whether the employment rates of Coloured individuals are significantly different from those of white individuals. The coefficients of the other explanatory variables (e.g. gender) do not change when the base group changes.

From these additional models, we find that there are no statistical differences in employment probabilities between the other universities (i.e. among CPU, SU and UCT), or individuals of the other races (i.e. among Coloured, Indian/Asian and white individuals). In terms of field of study, those graduating in the field of Humanities and the Social

3 Please contact the corresponding author for these results.

Table 3: Graduate employment on institutional and individual characteristics

Dependent variable: Employment status	
Gender: Female	-0.022** [0.009]
Race: Coloured	0.100*** [0.011]
Indian/Asian	0.123*** [0.032]
White	0.080*** [0.013]
Mathematics: Higher Grade	0.035*** [0.013]
Standard Grade	0.010 [0.010]
Faculty: Business/Commerce	0.013 [0.012]
Humanities/Social Sciences	-0.030** [0.015]
Health	0.079*** [0.019]
Law	0.052* [0.029]
Education	0.122*** [0.023]
Other	-0.005 [0.023]
Qualification: Certificate/diploma	-0.049*** [0.012]
Postgraduate degree	0.025** [0.013]
Institution: CPUT	0.038*** [0.014]
UCT	0.065*** [0.016]
SU	0.063*** [0.016]
Province: Eastern Cape	-0.035* [0.018]
Free State	0.034 [0.055]
Gauteng	0.031* [0.016]
KwaZulu-Natal	0.031 [0.029]
Limpopo	0.016 [0.038]
Mpumalanga	0.032 [0.041]
Northern Cape	0.007 [0.037]
North West	0.023 [0.033]
Observations (N)	4 181

Notes:

1. Regressions have been weighted according to institution and qualification type.
2. The proportion employed is calculated as a percentage of the total labour force (i.e. the employed and the unemployed and not including those who were not economically active).
3. The base group used for gender is female, race is African individuals, high school mathematics is neither Higher nor Standard Grade (i.e. no Mathematics taken), field is Science, Engineering & Technology, qualification is individuals with an undergraduate degree, institution is UWC, and, for current location, it is the Western Cape.

Sciences have the lowest probability of employment (with differences in probability ranging between 3 and 15 percentage points; $p < .05$ in all cases), while those in the field of Education have the highest (with the differences in probability ranging between 4 and 15 percentage points; $p < .1$ in all cases besides Health, which is $p < .1$), followed by Health (with the probabilities ranging between 7 and 10 percentage points, excepting Law which does not show significant differences; $p < .01$ in all cases of significance). The high employment probabilities of graduates in the Health and Education fields may be related to the large number of public-sector employment opportunities in these fields.

Furthermore, the model was also rerun for each institution separately, the results of which can be observed in Appendix A. In these models, gender is not a significant determinant of employment status for any institution. This suggests that the sample sizes are not large enough ($753 \leq N \leq 1409$) in these restricted models to pick up on the gender differences observed more generally. Racial differences in employment outcomes are stark at CPUT and SU and are in line with those already seen. However, at UCT, only white graduates are more likely to be employed than Africans (by 4 percentage points; $p < .05$), whereas at UWC only Coloured individuals are more likely to be employed than Africans (by 11 percentage points; $p < .01$). It could be, however, that the small samples are again hiding statistical differences.

Although high school Mathematics (Higher Grade, Standard Grade, none) predicted employment status in the unrestricted model, from these results we see that such differences are driven only by differences at UCT. High school Mathematics taken is not statistically significant at the other universities, while both having taken Higher Grade or Standard Grade improve the chances of employment among UCT graduates. Results for the field in which the individual graduated are similar in the restricted models (mainly for UWC), but the fact that each university specialises to some degree in some subjects over others means that there are not enough observations in each category to make firm conclusions here.

At CPUT, where postgraduate degrees are extremely uncommon, those with certificates or diplomas still fare worse than their counterparts holding an undergraduate degree (with an 11 percentage point difference in employment; $p < .01$). At UCT, there appear to be no systematic differences between those holding undergraduate degrees and other graduates, while at SU those with postgraduate degrees are only slightly more likely to be employed (with a 4 percentage point difference), and this is only significant at the 10% level. Surprisingly, at UWC, undergraduates fare worse than both those with postgraduate degrees (with a 5 percentage point difference; $p < .05$) and those with certificates and diplomas (with a 9 percentage point difference), but the latter is only significant at the 10% level. Finally, residing in the Eastern Cape is only associated with lower employment for those graduating from CPUT, while for those graduating from UCT and UWC residence in Gauteng is associated with a higher probability of employment.

One important omitted variable in these models is the grade point average (GPA) of the individual. Unfortunately, GPA was not available for large portions of the sample, including postgraduates at SU and for doctorates and masters by coursework at UCT and CPUT. However, despite controlling for institution, field and qualification type, race is still a significant determinant of employment outcomes in the employment equation. Hence, despite assertions that omitted variables related to tertiary-education quality are driving race differentials in employment status, the inclusion of these factors (excepting GPA) still does not erase racial differences in employment opportunities.

There may, of course, still be other factors driving these differences rather than race *per se*, or GPA. One background characteristic that is not included in this analysis is the density of social networks that graduates of different races had access to upon graduation. Another individual characteristic which may explain these differences is the socialisation of individuals into acquiring work-oriented behavioural traits. White graduates, whose parents and siblings are more likely to be employed due to apartheid-era policies, may benefit from growing up in a 'job culture' which teaches children to value and adopt

behavioural traits that are otherwise not objectively valuable. Such traits may be pride in one's ideas and accomplishments and a high level of self-confidence, as opposed to modesty, which would contribute to giving a 'good' impression in an interview.

On the other hand, it is entirely plausible given the historical context of South Africa that racial discrimination still exists in the labour market and affects the employment opportunities of

individuals differently based on their race. The results presented here support this idea, showing that an African individual with an equivalent tertiary degree in the same field will still struggle more to find employment than a comparable white, Coloured or Indian/Asian graduate. Although we cannot rule out unobserved factors in accounting for this difference, we also cannot dismiss the likely possibility of discrimination in the labour market.

5. CONCLUSION

Tertiary education is a way for youth to escape unemployment and low-quality employment. However, not all youth benefit from tertiary education in the same way. Of particular importance is the fact that African graduates are less likely to be employed than other graduates. This is potentially due to a persistence of racially based employment decisions, since African individuals of the same institutional background still find it harder to find employment than similar counterparts from another race group. This is in line with related literature, which highlights how racial disparities persist even at high levels of education. Besides race, those who study Health and Education are at a relative advantage, while those who study Humanities and Social Sciences are at a relative disadvantage when it comes to finding employment. Those who complete an undergraduate or postgraduate degree rather than a certificate or diploma are at a relative advantage, with postgraduate degree holders being further advantaged. Further research needs to look into

whether these relationships still exist when GPA information is included in the analyses.

Of importance for this research is that institution of study also affects the likelihood of finding employment, with UWC associated with the lowest employment rates of the four universities. While mean statistics indicate that SU provides the best chance of being employed, this relationship actually appears to be spurious (in the case of UCT and CPUT) and driven by the racial, field and qualification composition of the university's graduates rather than by the reputation or quality of the institution itself. Both racially biased university compositions and racially biased employment outcomes may be due either to lingering prejudices inherited from South Africa's apartheid history, or they may be due to quality differentials in education present throughout the schooling system, beginning in Grade 1 or even earlier. These quality differentials are themselves related to a history of apartheid, but they present different challenges from simply ingrained discrimination.

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APPENDIX

Table A1: Graduate employment on institutional and individual characteristics: UCT

Dependent variable: Employment status	
Gender: Female	0.006
	[0.018]
Race: Coloured	0.033
	[0.026]
Indian/Asian	0.067
	[0.048]
White	0.035*
	[0.018]
Mathematics : Higher Grade	0.047**
	[0.019]
Standard Grade	0.077**
	[0.032]
Faculty: Business/Commerce	0.058**
	[0.024]
Humanities/Social Sciences	-0.012
	[0.023]
Health	0.000
	[0.000]
Law	0.054
	[0.049]
Education	0.040
	[0.044]
Other	0.000
	[0.000]
Qualification: Certificate/diploma	0.070
	[0.057]
Postgraduate degree	0.012
	[0.017]
Province: Eastern Cape	0.000
	[0.000]
Free State	0.000
	[0.000]
Gauteng	0.037*
	[0.020]
KwaZulu-Natal	0.000
	[0.000]
Limpopo	0.000
	[0.000]
Mpumalanga	0.000
	[0.000]
Northern Cape	-0.037
	[0.072]
North West	-0.010
	[0.062]
Observations (N)	753

Notes:

1. Regressions have been weighted according to institution and qualification type.
2. The proportion employed is calculated as a percentage of the total labour force (i.e. the employed and the unemployed and not including those who were not economically active).
3. The base group used for gender is female, race is African individuals, high school Mathematics is neither Higher nor Standard Grade (no Mathematics taken), field is Science, Engineering & Technology, qualification is individuals with an undergraduate degree, and, for current location, it is the Western Cape.

Table A2: Graduate employment on institutional and individual characteristics: UWC

Dependent variable: Employment status	
Gender: Female	-0.029
	[0.024]
Race: Coloured	0.111***
	[0.024]
Indian/Asian	0.096
	[0.059]
White	0.036
	[0.060]
Mathematics : Higher Grade	0.056
	[0.036]
Standard Grade	0.046*
	[0.024]
Faculty: Business/Commerce	0.091**
	[0.038]
Humanities/Social Sciences	0.009
	[0.039]
Health	0.173***
	[0.046]
Law	0.083
	[0.051]
Education	0.130**
	[0.051]
Other	-0.024
	[0.066]
Qualification: Certificate/diploma	0.089*
	[0.048]
Postgraduate degree	0.054**
	[0.026]
Province: Eastern Cape	-0.027
	[0.050]
Free State	0.000
	[0.000]
Gauteng	0.070*
	[0.042]
KwaZulu-Natal	0.079
	[0.072]
Limpopo	0.045
	[0.084]
Mpumalanga	0.049
	[0.115]
Northern Cape	-0.020
	[0.084]
North West	-0.027
	[0.070]
Observations (N)	756

Notes:

1. Regressions have been weighted according to institution and qualification type.
2. The proportion employed is calculated as a percentage of the total labour force (i.e. the employed and the unemployed and not including those who were not economically active).
3. The base group used for gender is female, race is African individuals, high school Mathematics is neither Higher nor Standard Grade (no Mathematics taken), field is Science, Engineering & Technology, qualification is individuals with an undergraduate degree, and, for current location, it is the Western Cape.

Table A3: Graduate employment on institutional and individual characteristics: SU

Dependent variable: Employment status	
Gender: Female	-0.017
	[0.014]
Race: Coloured	0.090***
	[0.026]
Indian/Asian	0.000
	[0.000]
White	0.075***
	[0.022]
Mathematics : Higher Grade	0.008
	[0.023]
Standard Grade	0.018
	[0.023]
Faculty: Business/Commerce	0.031
	[0.021]
Humanities/Social Sciences	-0.018
	[0.021]
Health	0.066**
	[0.029]
Law	0.055
	[0.044]
Education	0.000
	[0.000]
Other	-0.020
	[0.031]
Qualification: Certificate/diploma	0.058
	[0.048]
Postgraduate degree	0.032*
	[0.017]
Province: Eastern Cape	0.000
	[0.034]
Free State	-0.011
	[0.040]
Gauteng	0.027
	[0.020]
KwaZulu-Natal	0.018
	[0.036]
Limpopo	0.000
	[0.000]
Mpumalanga	0.000
	[0.000]
Northern Cape	0.000
	[0.000]
North West	0.000
	[0.000]
Observations (N)	933

Notes:

1. Regressions have been weighted according to institution and qualification type.
2. The proportion employed is calculated as a percentage of the total labour force (i.e. the employed and the unemployed and not including those who were not economically active).
3. The base group used for gender is female, race is African individuals, high school Mathematics is neither Higher nor Standard Grade (no Mathematics taken), field is Science, Engineering & Technology, qualification is individuals with an undergraduate degree, and, for current location, it is the Western Cape.

Table A4: Graduate employment on institutional and individual characteristics: CPU

Dependent variable: Employment status	
Gender: Female	-0.025 [0.018]
Race: Coloured	0.155*** [0.021]
Indian/Asian	0.234** [0.097]
White	0.147*** [0.036]
Mathematics : Higher Grade	0.052 [0.035]
Standard Grade	-0.012 [0.021]
Faculty: Business/Commerce	-0.048** [0.022]
Humanities/Social Sciences	-0.021 [0.039]
Health	0.029 [0.041]
Law	0.000 [0.000]
Education	0.101** [0.049]
Other	-0.007 [0.043]
Qualification: Certificate/diploma	-0.105*** [0.021]
Postgraduate degree	0.000 [0.000]
Province: Eastern Cape	-0.114*** [0.036]
Free State	0.000 [0.000]
Gauteng	-0.032 [0.048]
KwaZulu-Natal	-0.054 [0.066]
Limpopo	-0.118 [0.083]
Mpumalanga	-0.064 [0.109]
Northern Cape	0.050 [0.083]
North West	0.036 [0.075]
Observations (N)	1 409

Notes:

1. Regressions have been weighted according to institution and qualification type.
2. The proportion employed is calculated as a percentage of the total labour force (i.e. the employed and the unemployed and not including those who were not economically active).
3. The base group used for gender is female, race is African individuals, high school Mathematics is neither Higher nor Standard Grade (no Mathematics taken), field is Science, Engineering & Technology, qualification is individuals with an undergraduate degree, and, for current location, it is the Western Cape.



LABOUR MARKET
INTELLIGENCE PARTNERSHIP

Youth Transitions from Higher Education into the Labour Market

In order to better understand the pathway from higher education into the South African labour market, this research examined the factors influencing the success of tertiary graduates in the workplace. While tertiary education is a marker for better employment outcomes, associated with better quality employment including higher wages, it is not a guarantee of obtaining employment. Substantial differentials exist between individuals who have obtained a tertiary education, and are even more pronounced when looking at unemployment rates between the sexes and the races. This research aims to shed light on the factors that differentiate those who transition from higher education into employment from those who transition into unemployment. While characteristics such as race and gender are evaluated, particular attention is given to the role of higher education institutions, the field studied, and the qualification obtained. Using a new dataset, the CHEC's Graduate Destination Survey, this report provides information on youth in the labour market, investigating the role played by education, and racial and gender dynamics in the various labour market outcomes studied.

About the LMIP

The Labour Market Intelligence Partnership (LMIP) is a collaboration between the Department of Higher Education and Training, and a Human Sciences Research Council-led national research consortium. It aims to provide research to support the development of a credible institutional mechanism for skills planning in South Africa. For further information and resources on skills planning and the South African post-school sector and labour market, visit <http://www.lmip.org.za>.

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