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Schooling inequality, higher education and the labour market: Evidence from a graduate tracer study in the Eastern Cape, South Africa

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LIST OF ABBREVIATIONS AND ACRONYMS

CDE	The Centre for Development and Enterprise
CESM	Classification of Educational Subject Matter
CHEC	Cape Higher Education Consortium
CHET	Centre for Higher Education Transformation
DPRU	Development Policy Research Unit
HBU	historically black university
HEMIS	Higher Education Management Information System
HSRC	Human Sciences Research Council
HWU	historically white university
ICC	intra-class correlation
NEET	not in education, employment or training
SCE	Senior Certificate Examination
SET	science, engineering and technology
TIPS	Trade and Industrial Policy Strategies
UFH	University of Fort Hare

INTRODUCTION

Inequality in primary- and secondary-schooling outcomes is a persistent feature of the education system in post-apartheid South Africa.¹ In turn, differences in schooling quality carry over into the post-school sector where choices for further education and training are often limited by schooling background and socio-economic status. In particular, research has suggested that South Africa's relatively low participation rate in higher education (Cloete 2004) and the large number of young people who are not in employment, education or training (NEETs) are a product of low schooling quality and a post-school training sector which does not meet the needs of the majority of school leavers (Cloete 2009; Cosser & Du Toit 2002; Pillay 2004). By one estimate, at least 10% of those 18 to 24 years old in South Africa are classified as NEETs but would qualify for at least some type of post-schooling education or training (Sheppard & Cloete 2009).

In addition to the low levels of participation and completion in higher education, there are at least two further areas of concern for higher education in South Africa. The first is the substantial gap between programme or degree preference and enrolment, on the one hand, and completion, on the other (Cosser 2009). Even if government is successful in achieving its stated goal of shifting the balance of enrolments away from humanities subjects towards science, engineering and technology (SET), and business and commerce (Cloete 2004; Department of Education 2001; Pillay 2004), its achievement would be blunted by limited success in completing first-choice qualifications, particularly in cases where first choices were in desired fields of study such as SET.

The second area of concern is the heterogeneity in employment outcomes among those who have completed a university degree. Identifying the reasons for differential employment outcomes for graduates is crucial for both equity and efficiency reasons. Equity considerations require investigations of the ways in which socio-economic and schooling inequalities continue to shape employment outcomes in order to identify ways of achieving more equal outcomes for all graduates regardless of education history, demographics or socio-economic background. Efficiency considerations require that human resources are deployed optimally within the labour market by matching graduates with jobs that meet their skills profiles.

This study attempts to link schooling, demographic, socio-economic and academic factors to first-choice degree completion and labour market outcomes. More specifically, this study investigates those factors that are most directly associated with whether the degrees that university graduates obtain reflect their first qualification choices, and also examines the effects of those factors and degree types on labour market outcomes.

The remainder of the paper is structured as follows. The next section reviews the literature on the transition from schooling to higher education in South Africa, with a particular focus on programme choice, followed by the recent literature on graduate employment and unemployment, and the broad findings of the graduate tracer studies which have been conducted in South Africa to date. Section three describes the graduate tracer study design and the analysis upon which the empirical section of the paper is based. In section four, the results of the descriptive statistics and a multivariate analysis are presented in two parts. Finally, section five discusses the results and reflects on the implications for higher education in South Africa.

¹ South Africa has one of the world's highest measures of intra-class correlation (ICC), which is a standardised indicator of variation in academic achievements (Branson & Zuze 2012).

REVIEW

Programme choice and the transition from school to university

One fairly widely held conclusion from the literature on the transition to higher education in South Africa is that access to and success in tertiary education are still very closely associated with socio-economic status (Branson et al. 2009a). However, success in higher education has been relatively narrowly defined in the literature and is often restricted to enrolment and graduation rates, employment and earnings. One clear exception is literature (Cosser 2009, 2010; Cosser & Du Toit 2002; Cosser et al. 2004) which has examined the intentions of secondary students to complete specific degree programmes at universities (ambitions) and then matched these with outcomes. On the whole, this work has concluded that there is evidence for a wide disparity between learner preferences or ambitions and actual higher-education enrolments (Cosser 2010).

In addition to identifying a gap between intentions and enrolments with respect to degree choice, this work has suggested that the mismatch between intentions and outcomes differs both by race and field of study. For example, Cosser and colleagues (2004) found that, among school leavers who intended to pursue a degree in SET, white students were more likely to enrol in an SET programme at university relative to other race groups. Concomitantly, the preference gap for Africans who intend to study an SET subject has been particularly and persistently larger (Cosser 2009).

Two further contributions from this literature are, firstly, that poor academic performance during the last year of schooling (matric) is the main reason for the gap between programme intentions and enrolment (Cosser et al. 2004). Secondly, however,

there is the finding that programme preferences also change considerably *after* enrolment or, in other words, during the course of university study and are therefore not necessarily confined to differences in enrolment outcomes (Cosser et al. 2004). It is this particular finding which requires more attention and is one of the areas of focus of the present study.

Post-apartheid trends in graduate employment

Much more research has been conducted on graduate employment in South Africa and the focus of this work has been on whether or not graduate unemployment is a significant and growing problem. On the one hand, several studies (Bhorat 2004; DPRU 2006; Kraak 2010; Pauw, Oosthuizen, et al. 2006) have suggested that graduate unemployment is increasing in South Africa. The general view according to this literature is that, despite a skills gap in the labour market, there is still a mismatch between the skills demanded by employers/firms and the training provided by universities (Bhorat 2004; Bhorat & Oosthuizen 2005; DPRU 2006; Kraak 2005). In particular, there has been some suggestion in the literature that graduates from fields such as humanities and the arts are less likely to find employment, compared with those from fields like engineering and the medical sciences (Du Toit & Roodt 2008).

On the other hand, more recent research (Altbeker & Storme 2013; Van Broekhuizen 2013; Van der Berg & Van Broekhuizen 2012) has suggested that the problem of graduate unemployment in South Africa has been exaggerated, since the unemployment rate for people with university degrees has consistently been below 6% (broadly defined). Graduate unemployment, like unemployment generally, was highest in about

2001, at which point about 8.4% of university graduates were (broadly) unemployed, as were just over 18% of diploma holders (Van der Berg & Van Broekhuizen 2012). Economic expansion between 2002 and 2007 reduced these rates of unemployment greatly, and, while unemployment for people with tertiary qualifications has increased since 2008, it remains very low in comparison with rates for people who have only a school education (Altbeker & Storme 2013; Branson et al. 2009a). Much of the 'problem' of graduate unemployment, therefore, seems associated with students who have attended further education and training (FET) colleges, while unemployment rates for university graduates remain low (Van Broekhuizen 2013; Van der Berg & Van Broekhuizen 2012).

Not all graduates, however, experience the labour market on equal terms and there is still evidence of gendered and racial patterns of employment among graduates (Moleke 2005a). A number of studies on graduate employment in the post-apartheid period (Bhorat et al. 2010; Branson et al. 2009b; Letseka et al. 2010; Moleke 2005a; Pauw, Oosthuizen et al. 2006) suggest that race, gender and type of institution (i.e. historically white universities (HWUs) as opposed to historically black universities (HBUs)) are still significant determinants of labour market outcomes.

Although some of this disadvantage in labour market outcomes is related to field of study, there is evidence to suggest that black graduates, and particularly those from HBUs, are significantly less likely to find employment immediately after graduation, even after controlling for field of study (Moleke 2005a). The reasons for the poorer employment prospects for graduates of HBUs are not clear, but empirical work with firms has suggested that some employers may still perceive HBUs as having a lower quality of graduates (DPRU 2006; Pauw, Bhorat, et al. 2006). An alternative explanation for graduate unemployment (Kraak 2010) which has gained some traction is that graduates with general degrees, and particularly those from the HBUs, enter the labour market without any substantive social networks among private-sector firms and enterprises.

Graduate destination studies in South Africa

Much of this information on university graduates in South Africa and their subsequent labour market outcomes has come from national Labour Force Surveys. However, there has also been a handful of dedicated graduate tracer (or destination) studies conducted in South Africa. The first national graduate study (Moleke 2005a, 2005b) to focus on university graduates in South Africa traced 2 672 graduates who obtained their qualifications between 1990 and 1998. The study (Moleke 2005a) found the rate of unemployment among university graduates to be generally low (about 94% of graduates found employment within a year of graduation) and, where unemployment did occur, it was only for short periods.

Despite these low levels of unemployment, a number of characteristics were found to be associated with having experienced unemployment. In particular, the study showed that black graduates, women, those with degrees in the humanities and graduates from HBUs were all significantly more likely to report having experienced a period of unemployment (Moleke 2005a). Among the employed, employment sectors also seemed to differ by race and the findings suggested that the public sector was often the first employer for African and Coloured graduates, while white and Indian graduates obtained their first job in the private sector (Moleke 2005a).

In 2005, the Human Sciences Research Council (HSRC) (see Cosser & Letseka 2010) extended this earlier work with a graduate tracer study which investigated the factors that influence choice of field of study along with the dynamics which determine university dropout, graduation, and successful transition to the labour market. Once again, one of the key findings was that black graduates and those who obtained a degree in the humanities, in particular, were more likely to be unemployed (Bhorat et al. 2010; Moleke 2010). The findings lead to the unfortunate conclusion that race is still one of the strongest indicators of both graduation and employment, even after controlling for type of institution and field of study (Bhorat et al. 2010).

Finally, the most recent South African graduate study was conducted by the Cape Higher Education Consortium (CHEC) (CHEC 2013). The CHEC study aimed to trace all 2010 graduates from the four public universities in the Western Cape province. The respondents were contacted in 2012 and the focus was on identifying employment and unemployment

transitions and outcomes in the two years following graduation. Overall, the study found that 84% of the interviewed cohort were employed at the time of the interview. Similar to the two earlier studies, two of the key findings were that the burden of unemployment was highest among black graduates and that the institutional differences were significant (CHEC 2013).

METHODS

Research design

The data analysed in this paper come from a graduate tracer study which interviewed successful graduates from the two traditional universities² in the Eastern Cape province of South Africa, namely Rhodes University and the University of Fort Hare. Respondents were drawn from a stratified³ random sample of all graduates who completed a three- or four-year bachelor's degree in either 2010 or 2011. Aggregate information on the broad characteristics of graduates was available through the Higher Education Management Information System (HEMIS) and unit record information on each graduating group was obtained from the respective university records offices. Responses from a total of 469 graduates from Rhodes and 742 graduates from the University of Fort Hare (UFH) were successfully captured (n=1 211). Given the difficulties in obtaining reliable contact details for graduates, the survey was administered both through telephonic interviews and through an online survey platform. On the whole, the response rates (39% for the UFH and 47% at Rhodes) were appreciably higher than for past tracer studies conducted in South Africa. Once the data collection was complete, statistical weights were estimated in order to correct for non-response.

Analysis

In terms of the empirical strategy, the closest antecedent to the present study is the analysis by Bhorat et al. (2010), which estimated the probability of unemployment from the 2005 graduate tracer

study conducted by the HSRC. The analysis for the present study has two distinct parts: the first part consists of a descriptive analysis of degree choice and the transition to the labour market among graduates from the two universities. The second part then identifies, through a multivariate analysis (logit estimation), how schooling quality,⁴ academic achievements, field of study, as well as race, gender and socio-economic status are associated with the probability of completing a first-choice degree and finding employment, respectively.

Limitations

There are several important limitations to the study's design. Firstly, the study team did not have full access to student records. As a result, the information captured in the survey is the result of retrospective, self-reported evaluations and cannot be verified by administrative records. Secondly, and related to the above, the survey respondents were also asked to act as secondary sources of information on such household characteristics as parental employment, income and education, and tertiary education among siblings. An additional limitation associated with the design of tracer studies, selection bias, is a source of concern, since the ability to contact respondents may be correlated with a number of the outcomes being investigated (e.g. employment status).

Graduate sample characteristics

Since Rhodes University is an HWU and Fort Hare is an HBU, it is not surprising that the racial composition of graduates from the two universities is very different. Most graduates from Rhodes University

2 Traditional universities offer theoretically oriented degrees and are less vocational compared with comprehensive universities and universities of technology (see De Villiers et al. 2013).

3 The sample was stratified by field of study as categorised by the South African Classification of Educational Subject Matter (CESM) manual. The categories included: science engineering and technology (SET), business and commerce, education, and humanities.

4 Public schools are divided into quintiles according to their poverty ranking. In the regressions, the school poverty variable is constructed as a dummy variable where quintile 5 schools and elite private schools are the reference category (0) and quintiles 1–4 are coded as '1'.

(57% of the 2010 and 2011 cohorts) are still 'white' while only 35% are 'black African'. The vast majority (93%) of graduates from Fort Hare, however, are classified as black and less than 5% are white. While there has been some transformation, particularly at Rhodes University, over the past 20 years, it is clear that the racial compositions of the two universities still, to a great extent, reflect their historical positions in South Africa's higher education system.⁵

There is very little evidence to support the claim that race is strongly associated with field of study (Table 1). In particular, the suggestion (e.g. Moleke 2005b) that black students, and particularly those who study at HBUs, are significantly more likely to enrol in programmes (such as the humanities) which have a lower likelihood of employment does not appear to be the case for Rhodes and Fort Hare graduates. Moreover, black African graduates from Fort Hare are not significantly more likely to have completed a degree in the humanities than black African graduates from Rhodes.

In the light of the large differences in schooling quality in South Africa, one important finding is that the schooling histories of the two sets of graduates are very different (Table 2). About half of the Rhodes cohort attended public elite schools (compared with about a third of Fort Hare graduates). These are often described as former Model C schools and, while classified as public institutions, the tuition fees are often high (typically prohibitively so for low-income households), learner-to-teacher ratios are low, and the schools are relatively well resourced in terms of infrastructure. There is also a considerable 'elite' element to the Rhodes graduate group. About 30% attended private schools with very high (often exorbitant) tuition fees which restrict attendance to learners from upper-income and wealthy households. Over half (53%) of Fort Hare graduates, on the other hand, attended low-cost public schools. These schools are generally associated with lower academic achievements, high learner-to-teacher ratios and relatively poor infrastructure.

⁵ There is a very small number of graduates from the Coloured and Indian population groups. About 5% of Rhodes graduates are classified as Indian and about 3% are Coloured. At UFH, less than 1% are Indian and about 2% are Coloured.

Table 1. Field of study, by university and population group

	Black African	Coloured	Indian or Asian	White	Total
Rhodes University					
SET	21.72 (3.70)	1.92 (1.96)	40.66 (10.24)	19.16 (2.21)	20.60 (1.91)
Business/commerce	34.98 (4.41)	19.23 (11.91)	23.08 (7.67)	21.08 (2.37)	26.05 (2.18)
Education	1.69 (0.97)	3.85 (2.82)	0.00 (0.00)	0.44 (0.22)	0.95 (0.37)
Humanities	41.61 (4.19)	75.00 (12.06)	36.26 (10.10)	59.32 (2.86)	52.40 (2.38)
Total	100.00	100.00	100.00	100.00	100.00
University of Fort Hare					
SET	18.54 (1.47)	8.20 (5.87)	0.00 (0.00)	0.00 (0.00)	17.43 (1.38)
Business/commerce	24.45 (1.58)	26.23 (12.73)	46.15 (29.15)	39.06 (8.18)	25.23 (1.54)
Education	9.27 (1.40)	11.48 (7.80)	0.00 (0.00)	25.00 (8.08)	9.97 (1.36)
Humanities	47.73 (1.94)	54.10 (13.76)	53.85 (29.15)	35.94 (9.40)	47.37 (1.88)
Total	100.00	100.00	100.00	100.00	100.00

Notes: The data are weighted. Standard errors are in brackets.

Table 2. Type of school attended

	Rhodes University	University of Fort Hare	Total
Public-elite	49.88 (2.41)	33.68 (1.92)	40.35 (1.52)
Public-low-cost	14.77 (1.79)	52.66 (2.02)	37.05 (1.50)
Private-elite	29.60 (2.17)	3.72 (0.73)	14.38 (1.06)
Private-low-cost	5.09 (1.06)	9.17 (1.17)	7.49 (0.82)
Home schooling	0.17 (0.17)	0.16 (0.16)	0.17 (0.12)
Farm school	0.49 (0.35)	0.61 (0.30)	0.56 (0.23)
Total	100.00	100.00	100.00

Notes: The data are weighted. Standard errors are in brackets.

FINDINGS

Degree preferences and completion

Despite the far lower levels of schooling quality among the Fort Hare graduates, degree preferences between the two groups were similar. For example, the same percentage (30%) of graduates from both universities reported that, during their final year of school, they planned to study a discipline within the field of SET at university (Table 3). At the same time, the Fort Hare cohort exhibited a slightly higher (relative to Rhodes graduates) preference for commerce and a slightly lower intention to study humanities when they were in matric. In terms of realising these intentions, about 47% of the Rhodes graduates and 41% of the Fort Hare graduates went on to complete a degree in their first-choice subject. In other words,

Rhodes graduates were only slightly (and not significantly) more successful in completing the degree which they intended to study while still in school.

However, these figures mask large differences between fields of study (Table 4). At Rhodes, for example, about 60% of graduates who intended to study a discipline within the SET subject category successfully completed a degree in SET (but not necessarily in the same discipline or subject as was originally intended). Among Fort Hare graduates, however, less than half (48%) of those who intended to obtain an SET degree did so. Across the four CESMs, Rhodes graduates were significantly more likely than Fort Hare graduates to complete a degree within the broad field in which they originally

Table 3. Intended field of study while still in matric (1st choice)

	Rhodes University	University of Fort Hare	Total
SET	30.02 (2.21)	29.67 (1.77)	29.81 (1.38)
Commerce	24.84 (2.18)	29.18 (1.73)	27.49 (1.35)
Education	0.76 (0.39)	3.78 (0.79)	2.60 (0.51)
Humanities	44.38 (2.39)	37.37 (1.87)	40.10 (1.47)
% who went on to complete the intended <i>degree</i> at university	47.41 (2.37)	40.99 (1.84)	43.46 (1.46)

Notes: The data are weighted. Standard errors are in brackets.

Table 4. Graduation in intended field of study, by first-choice field of study in matric

	Rhodes University	University of Fort Hare	Total
SET	59.75 (4.34)	47.90 (3.56)	52.55 (2.78)
Business/commerce	81.28 (3.71)	66.96 (3.45)	72.00 (2.67)
Education	–	65.90 (9.70)	59.94 (9.45)
Humanities	92.27 (1.77)	84.80 (2.25)	88.02 (1.50)

Notes: The data are weighted. Standard errors are in brackets.

intended to enrol. Among the Fort Hare graduates who changed their study category (between matric and university graduation), the largest percentage switched to humanities. For example, among those who intended to study SET at Fort Hare, 27% graduated in a humanities discipline instead (not shown in table).

The main reasons for changing from the initial intended course of study also differ between the two groups (Table 5). The main reason that UFH graduates changed their intended course of study (32%) was that their marks were not good enough to gain entry or to continue to completion. Financial pressures also seem to be a consideration for the Fort Hare group, with 7% indicating that there was a perceived lack of jobs in their initial choice of study or that a lack of a scholarship prevented completion (14%). Among the Rhodes graduate group, the main reason was a loss of interest (48%).

Looking at the reasons for not completing the intended course by CESM category (not shown in table), the data suggest several interesting findings. For example, among those who intended to study SET at Fort Hare but did not complete the course, nearly a quarter indicated that their marks were too low to continue and 23% reported that they could not find a place in the relevant programme. Somewhat surprisingly, an even higher percentage (38%) of Rhodes graduates who did not complete an intended SET degree reported that their marks were too low. However, 32% also indicated that they simply lost interest in the subject (compared with 22% from UFH).

Transition to the labour market

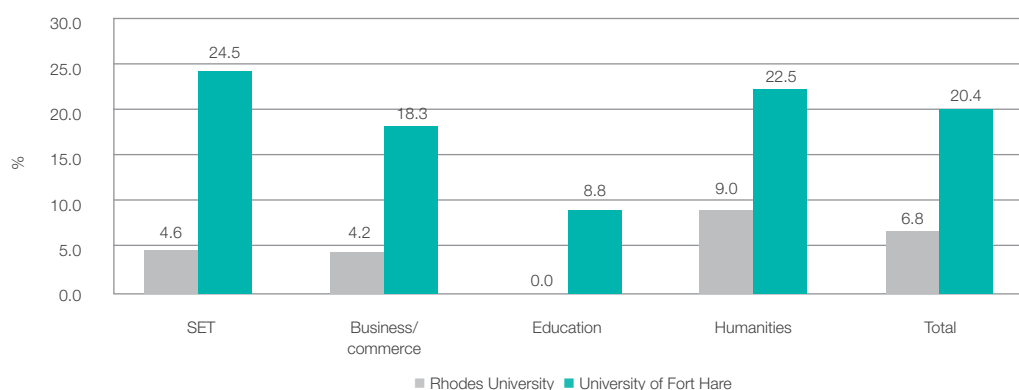
Turning now to the transition from university to the labour market, Figure 1 identifies the broad unemployment rates of graduates on 1 March 2014

Table 5. Reasons for not completing intended course of study

	Rhodes University	University of Fort Hare	Total
Lack of jobs in South Africa	2.79 (1.13)	7.36 (1.43)	5.74 (1.01)
No scholarship	5.79 (1.74)	14.24 (2.07)	11.25 (1.49)
Marks not good enough	23.29 (3.13)	31.64 (2.55)	28.68 (2.00)
No places available	9.81 (2.25)	24.32 (2.41)	19.19 (1.78)
Started but couldn't continue	13.37 (2.42)	5.42 (1.32)	8.23 (1.21)
Lost interest	48.11 (3.62)	20.47 (2.14)	30.25 (1.97)

Notes: The data are weighted. Standard errors are in brackets. Cells are not mutually exclusive; therefore, columns do not total to 100%.

Figure 1. Broad unemployment rates (as of 1 March), by field of study



Note: The data are weighted.

(the month in which fieldwork began). The most striking finding is the difference in unemployment rates between Rhodes and UFH graduates. The unemployment rate of 7% among Rhodes graduates is closely in line with the national average for university graduates (see Pauw et al., 2008; Van der Berg & Van Broekhuizen 2012), while the unemployment rate (20%) among UFH graduates is almost three times higher.

Contrary to some of the expectations described in the literature, the descriptive statistics do not provide any evidence that the risk of unemployment for humanities graduates is significantly higher than for other fields of study. While humanities graduates from Rhodes are more than twice as likely to be unemployed than SET and business graduates, the difference is not statistically significant (i.e. confidence intervals overlap at the 95% level of

significance). At Fort Hare, SET graduates actually have a higher rate of unemployment, but, again, the difference is not significant. The significantly lower risk of unemployment among education graduates (about 9% among the UFH sample) is likely the result of the practical application of a teaching degree and relatively easy absorption into the teaching profession relative to the other fields of study. One key area where there are significant differences between graduates is in the sector of employment (not shown in the figure). The vast majority (73%) of Rhodes graduates are employed in the private sector, while 67% of UFH graduates are employed in government (see also Moleke 2005a).

Finally, among the graduates who are employed (but excluding the small number who are self-employed), there are some important differences in job search strategies which may explain some of the differences

Table 6. Means of finding employment (among employees, i.e. not the self-employed)

	Black African	Coloured	Indian or Asian	White	Total
Rhodes University					
Employment agency	13.16 (4.06)	12.73 (3.58)	0.00 (0.00)	7.25 (1.87)	9.84 (1.61)
Relatives	6.04 (2.66)	5.15 (2.12)	0.00 (0.00)	7.75 (1.92)	6.59 (1.27)
Linked to bursary	1.55 (1.54)	4.43 (2.27)	0.00 (0.00)	2.10 (1.04)	2.63 (0.89)
Social media	4.96 (2.46)	15.08 (3.97)	21.05 (18.05)	11.82 (2.32)	11.56 (1.74)
Personal contacts	21.02 (4.56)	27.07 (4.56)	27.63 (18.35)	34.12 (3.41)	29.56 (2.38)
Newspaper	8.76 (3.91)	9.78 (3.44)	60.53 (18.99)	11.08 (2.24)	10.86 (1.71)
Campus recruitment	3.77 (2.17)	8.69 (2.90)	6.58 (6.66)	5.23 (1.61)	5.95 (1.24)
University of Fort Hare					
Employment agency	0.00 (0.00)	4.50 (1.57)	0.00 (0.00)	1.62 (0.80)	1.92 (0.56)
Department of Labour	10.03 (3.18)	6.16 (1.89)	11.90 (5.62)	8.82 (1.80)	8.68 (1.28)
Relatives	1.21 (1.20)	3.08 (1.36)	1.82 (1.81)	3.42 (1.22)	2.79 (0.73)
Linked to bursary	12.11 (3.44)	4.92 (1.70)	21.56 (6.59)	15.48 (2.32)	12.91 (1.52)
Social media	5.84 (2.54)	7.84 (2.09)	0.00 (0.00)	4.36 (1.29)	4.99 (0.91)
Personal contacts	8.39 (2.86)	13.84 (2.66)	7.84 (3.82)	11.78 (2.15)	11.32 (1.37)
Newspaper	36.62 (5.04)	40.69 (3.87)	20.55 (6.08)	37.50 (3.13)	36.23 (2.10)
Campus recruitment	8.82 (2.99)	4.16 (1.55)	3.30 (3.23)	4.75 (1.34)	5.08 (0.96)

Notes: The data are weighted. Standard errors are in brackets. Cells are not mutually exclusive; therefore, columns do not total to 100%.

in labour market outcomes (Table 6). The single most common means of finding their current job among the Rhodes graduates was through personal contacts or networks (30%). Moreover, if the categories of ‘relatives’, ‘social media’ and ‘personal contacts’ are combined, then just under half of Rhodes graduates found their current employment through a social network. Fort Hare graduates, on the other hand, relied to a greater extent (36%) on newspaper advertisements than on any other specific search strategy.

Estimations

In order to explore the descriptive findings on first-choice degree completion and graduate unemployment in greater detail, two sets of logit regressions were estimated. Each set of estimations is presented first as a pooled sample and, given the vast differences between the two universities, both institutionally and in terms of graduate characteristics, with the results then being presented separately by institution. In addition to the variables listed in the first column of the following two tables, both sets of regressions control also for Senior Certificate Examination (SCE) levels and symbols, academic achievement at university, parental levels of education, or parental employment status.⁶

In the first set (Table 7), the correlates of graduating with a first-choice degree are presented. The results from the pooled sample (I) indicate that those graduates who intended to pursue an SET or commerce degree were significantly less likely, relative to those who planned to complete a humanities degree, to have completed their first choice degree. Black graduates and those from low-income schools are also less likely to have completed a first-choice degree, even after controlling for schooling achievements and other background factors. The interaction effects (II) suggest further that black graduates from Fort Hare and black female graduates (on the whole) are significantly less likely to have completed their first-choice degree.

Among the Rhodes sample (III), those from low-quintile schools are also less likely to have completed an intended degree, as are graduates who initially intended to study SET, commerce or education. Interestingly, there are no racial differences in degree completion among the Rhodes sample and none of the interaction terms are significantly associated with graduating with a first-choice degree. The results from the Fort Hare sample (V) identify black graduates and those from low-quintile schools as being significantly less likely to have successfully completed an intended degree. While UFH graduates who reported initial intentions to study an SET or commerce subject are also less likely to have completed these intended degrees, none of the interaction effects are significant.

The correlates of unemployment among graduates are presented in Table 8. In the pooled sample (I), the estimates are generally in line with the existing literature and suggest that there is a significantly higher risk of unemployment for Fort Hare graduates, black graduates, women and those who completed a degree in the humanities. However, the expected interaction (II) between humanities and race is not significant, which suggests that black graduates who completed a degree in the humanities are not at a specific risk of unemployment. Black graduates from Fort Hare are also not at a higher risk of unemployment, over and above the risks identified in the main effects regression (I). Black women and particularly those from low-quintile schools, on the other hand, face a significantly higher risk of unemployment.

Among Rhodes graduates (where unemployment levels are very low), there are very few significant correlates of unemployment (III). Importantly, however, the risk of unemployment is significantly higher for black graduates and, in particular, black women (IV) even after controlling for field of study, schooling quality, socio-economic factors, and the employment status of their parents. The disappointing conclusion from these estimations is, therefore, that race and gender (and not achievements) appear to be consistent predictors of success in the labour market.

⁶ In order to test for a possible bias associated with the method of data collection, both sets of estimations include a dummy control for whether the survey was completed online.

Table 7. The correlates (logit estimations) of completing a first-choice university degree

	Pooled		Rhodes		Fort Hare	
	(I)	(II)	(III)	(IV)	(V)	(VI)
UFH	0.007 (0.213)	0.928** (0.389)	–	–	–	–
Female	-0.162 (0.133)	0.191 (0.241)	0.0176 (0.227)	0.104 (0.274)	-0.263 (0.171)	0.805 (0.726)
Black	-0.340* (0.196)	0.230 (0.287)	-0.141 (0.243)	-0.035 (0.392)	-1.074*** (0.366)	-0.379 (0.515)
Matric						
Maths or science higher grade	-0.191 (0.184)	-0.205 (0.183)	-0.418 (0.258)	-0.445* (0.259)	-0.100 (0.281)	-0.142 (0.287)
English higher grade	-0.072 (0.150)	-0.056 (0.151)	0.282 (0.325)	0.287 (0.330)	-0.217 (0.174)	-0.222 (0.174)
Maths upper-class pass	-0.003 (0.197)	-0.044 (0.198)	-0.475* (0.247)	-0.481* (0.247)	0.786** (0.330)	0.758** (0.334)
Science upper-class pass	0.101 (0.254)	0.130 (0.254)	0.407 (0.308)	0.445 (0.313)	-0.302 (0.473)	-0.255 (0.487)
Low-quintile school	-0.492*** (0.143)	-0.220 (0.301)	-0.462* (0.279)	0.021 (0.421)	-0.452*** (0.172)	-0.248 (0.255)
Ambitions						
SET matric	-1.296*** (0.165)	-1.092*** (0.205)	-1.196*** (0.262)	-1.057*** (0.279)	-1.375*** (0.224)	-1.154*** (0.320)
Comm matric	-0.560*** (0.159)	-0.315 (0.221)	-0.753*** (0.289)	-0.510 (0.319)	-0.528*** (0.197)	-0.198 (0.330)
Edu matric	0.343 (0.443)	-0.750 (0.678)	-2.438** (1.035)	-3.178*** (1.183)	0.497 (0.485)	-0.132 (0.762)
Interactions						
Black*UFH		-1.142*** (0.423)				
Low-quintile *SET matric		-0.481 (0.333)		-0.772 (0.710)		-0.384 (0.438)
Low-quintile *comm matric		-0.547* (0.313)		-1.074 (0.669)		-0.521 (0.407)
Low-quintile *edu matric		1.329 (0.892)		---		0.728 (0.957)
Black*female		-0.492* (0.287)		-0.164 (0.478)		-1.109 (0.748)
Cons	5.546*** (1.394)	5.006*** (1.408)	6.277 (4.371)	1.787 (5.808)	5.886*** (1.671)	5.145*** (1.736)
(Unweighted) N	1 156	1 156	445	444	711	711

Notes: The data are weighted. Standard errors are in parentheses. * p<0.10, ** p<0.05, *** p<0.01 The regressions also include controls for: age, parental level of education, and mode of data collection.

The more interesting question is what explains the relatively higher risk of unemployment among the Fort Hare sample where race is unlikely to explain differences *within* this group.⁷ The results show that, in the main effects regression (V), the two significant correlates of unemployment are gender and low-income schooling. Moreover, in the final regression (VI), one of the crucial factors associated with unemployment among Fort Hare graduates is the

interaction (0.822) between these two variables. In other words, being female *and* coming from a low-income school carries an extra risk of unemployment over and above the risks identified in the previous column. The interactions also show an association between field of study (particularly SET and education) and a lower risk of unemployment (relative to commerce graduates) among Fort Hare graduates with a poor schooling background.

⁷ The number of Indian and white graduates from Fort Hare who are unemployed is so low that they were excluded from the final two estimations in the table.

Table 8. The correlates (logit) of unemployment among Rhodes and Fort Hare graduates

	Pooled		Rhodes		Fort Hare	
	(I)	(II)	(III)	(IV)	(V)	(VI)
UFH	0.735** (0.342)	0.497 (0.809)				
Female	0.319* (0.188)	-1.239* (0.713)	0.102 (0.462)	-1.429 (1.377)	0.350* (0.206)	-0.148 (0.399)
Black	1.226*** (0.358)	0.862 (0.559)	1.576*** (0.383)	0.164 (1.381)	–	–
Matric						
Maths or science higher grade	0.116 (0.268)	0.152 (0.282)	0.494 (0.452)	0.485 (0.535)	-0.048 (0.348)	-0.021 (0.350)
English higher grade	-0.100 (0.192)	-0.098 (0.196)	-0.857* (0.506)	-0.873 (0.560)	-0.008 (0.207)	-0.014 (0.209)
Low-quintile school	0.276 (0.193)	0.735 (0.846)	-0.346 (0.677)	0.665 (1.409)	0.424* (0.217)	0.976* (0.471)
Field of study						
SET	0.256 (0.265)	0.952** (0.452)	0.0368 (0.944)	-0.042 (1.063)	0.408 (0.282)	1.435*** (0.507)
Humanities	0.425* (0.225)	1.180* (0.670)	0.995 (0.732)	1.270 (0.870)	0.345 (0.239)	1.166** (0.596)
Education	-0.513 (0.519)	0.940 (0.732)	–	–	-0.627 (0.528)	1.094 (0.754)
Interactions						
Black*UFH		-0.088 (0.809)				
Low-quintile *black		-0.854 (0.880)		-0.445 (1.492)		
Low-quintile *UFH		1.059 (0.723)				
Black*female		1.305* (0.692)		2.489** (1.076)		
Low-quintile *humanities		-1.186** (0.517)		-1.507 (1.619)		-1.116** (0.564)
Low-quintile *SET		-1.130** (0.577)		0.209 (1.804)		-1.585*** (0.628)
Low-quintile *education		-2.442** (1.040)		–	–	-2.762*** (1.078)
Black*humanities		0.033 (0.694)		0.140 (1.487)		
Female* humanities		-0.007 (0.383)		0.127 (1.335)		-0.024 (0.419)
Female* low-quintile school		0.667* (0.403)		0.360 (1.387)		0.822* (0.446)
Cons	-1.299 (1.574)	-1.175 (1.646)	-9.262** (4.386)	-9.538** (4.885)	1.122 (1.672)	0.719 (1.731)
(Unweighted) N	1 104	1 104	429	429	667	667

Notes: The data are weighted. Standard errors are in parentheses. * p<0.10, ** p<0.05, *** p<0.01. The regressions also include controls for: age, parental employment, SCE marks (self-reported), average university mark (self-reported) and mode of data collection.

DISCUSSION

The results of the study described in this paper have contributed to the post-schooling literature in South Africa in two main ways. Firstly, the findings extend the existing work on degree or programme choice by suggesting that the completion of a first-choice degree is further conditioned by 'pre-higher education' factors such as school quality, race, gender and intended field of study. To the extent that the self-reported information on school achievements and past study intentions are accurate, this means that at least part of the preference gap identified by Cosser (2009) is explained by poor schooling backgrounds and, by extension, a lack of adequate preparation for university study.

The implication is that schooling quality and low socio-economic status do not only have the expected impacts on access to higher education or performance at university, but they are also clearly linked with study choices and career development. This conclusion is particularly critical given that learners in South Africa are required to start making decisions about their future education and training in Grade 9 (i.e. at age 16) when little support or guidance is offered, especially at underresourced schools (Stumpf et al. 2012). This is also an important issue of equity if learners from poorer schools who have demonstrated an academic ability (i.e. they qualified for and graduated from a university) are not able to follow their intended course of study.

Of course, this is also an issue of the efficiency of the higher education system in South Africa and the question is how universities and the education system, more broadly, can convert potential human resources into the types of high-level and scarce skills which are in demand by the economy. Given the reality of poor schooling quality in South Africa,

one suggestion (see Stumpf et al. 2012) has been to adopt a number of Australian initiatives which are focused specifically on supporting learners in making decisions about further training and study. This suggestion has been made with particular reference to the FET sector, but it seems as though, based on the findings presented here, this type of intervention could apply equally to universities and HBUs, in particular.

Secondly, the findings suggest that, while graduate unemployment is far higher among Fort Hare graduates, at least some of this disadvantage is actually carried over from the type of schooling (and the related levels of socio-economic status associated with attending a low-quintile school) obtained by graduates. The implication is, therefore, that interventions aimed at improving the employment prospects of graduates from HBUs should be targeted at university students from low-quintile schools or, as suggested above, final-year school students from these schools who have qualified to attend university. As identified in much of the literature on NEETs in South Africa, this is the group which is currently falling through the cracks of the post-schooling system in South Africa.

In line with many of the debates in the international literature (Nunez & Livanos 2010; Schomburg & Teichler 2006; Teichler 2002, 2007), much of the focus in the South African literature has been on the relevance of university curricula (and the humanities in particular) to skills needed in the job market. Critically, the findings from this study do not provide much support for a switch away from the humanities particularly if, as Cloete (2004: 74) suggests, the future of higher education depends on the creation of 'self-programmable labour'. The results of both the descriptive statistics and the multivariate analysis, for example, do not support the claim that black

students (including those who are enrolled in HBUs) are more likely to enrol in subjects with poorer prospects for immediate employment (Moleke 2005b; Pauw et al. 2008). Moreover, the evidence from the Eastern Cape universities does not suggest that humanities graduates are significantly more likely to be unemployed after controlling for other factors.

Given the above, the remaining crucial question is whether the higher rate of unemployment among Fort Hare graduates is really the result of the oversupply of certain skills (Pauw et al. 2008; Woolard et al. 2003) or whether factors such as poor matching (Altman & Marock 2011) or signalling – including the effects of perceptions and preferences of prospective employers about graduates from HBUs, or a lack of appropriate social networks in the labour market (Kraak 2010) – apply. While not definitive, the evidence presented in this paper tends to support the latter three factors.

Poor access to social networks in higher education, particularly for first-generation students, may explain not only the high rates of university dropout (see Letseka & Maile 2008), but also degree choices and the unsuccessful transition to the labour market (Altman & Marock 2011; Kraak 2010). For example, the descriptive findings on successful job search strategies suggest that different search strategies are successful in the private and public sectors, and that Rhodes graduates appear to be more successful in leveraging social networks to obtain private-sector employment. Further investigation of the forms and functioning of social networks in private-sector employment as opposed to more transparent forms of signalling the availability of employment opportunities, such as advertising, might be useful. One policy implication is, therefore, that matching interventions (see Altman 2007; Altman & Marock 2011) may be required to link university graduates with appropriate labour market opportunities.

CONCLUSION

University graduates, and especially those from poorly resourced schools and low-income communities, are an important human resource precisely because they have demonstrated a tangible ability to succeed. The fact that a number of these graduates were not able to complete their first-choice degrees or are unemployed is justification for a policy intervention. Perhaps the main contribution of the graduate tracer study presented in this paper is the conclusion that policy should focus most closely on university students from poorly resourced schools and as early as possible in their university studies, in addition to interventions in those schools themselves, as poor academic performance appears to be a

major factor in students' abandoning their first-choice fields of study. Also, the problem of graduate unemployment in South Africa, while relatively small, is highly concentrated in historically disadvantaged universities and particularly among graduates from poor secondary schools. Rather than addressing study choices per se in order to address graduate unemployment, policy should focus on improving the match between these graduates and the labour market, not only by addressing the supply-side issues explored in this study, but also by addressing evidence in the literature about the shaping of labour demand by employer preferences and employment practices.

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