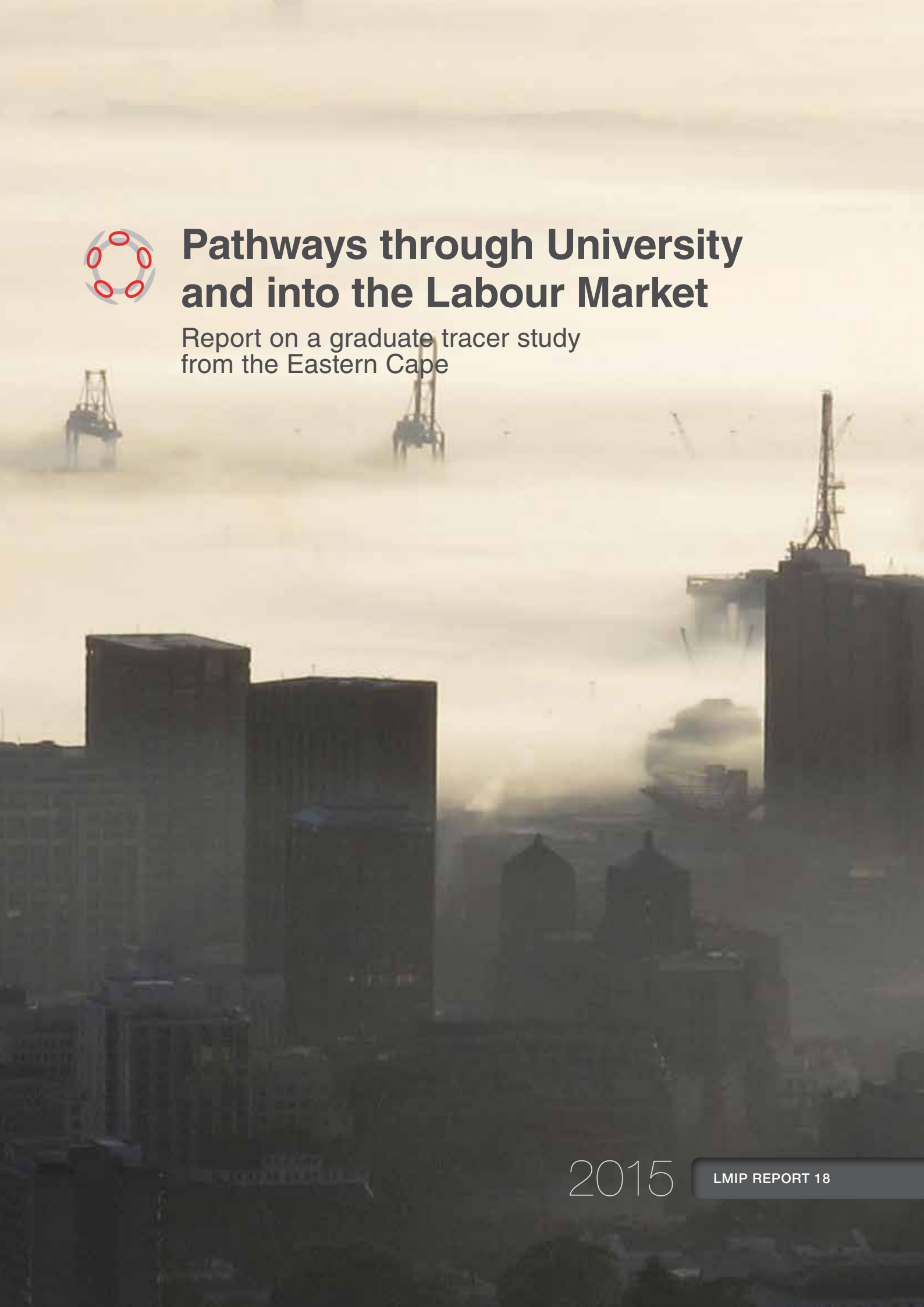

Pathways through University and into the Labour Market

Report on a graduate tracer study from the Eastern Cape

2015

LMIP REPORT 18

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Report on a graduate tracer study from the Eastern Cape

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LABOUR MARKET
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ABBREVIATIONS AND ACRONYMS

CATI	computer-assisted telephone interviewing
CDF	cumulative distribution function
CESM	Classification of Educational Subject Matter (South Africa)
CHEC	Cape Higher Education Consortium
CREST	Centre for Research on Science and Technology
DHET	Department of Higher Education and Training
FET	Further Education and Training
HBU	historically black university
HEMIS	Higher Education Management Information System
HESA	Higher Education South Africa
HRD	human resource development
HSRC	Human Sciences Research Council
HWU	historically white university
ICT	information and communications technology
ISER	Institute of Social and Economic Research
LFS	Labour Force Survey
LMIP	Labour Market Intelligence Partnership
LMIS	Labour Market Intelligence System
NALSU	Neil Aggett Labour Studies Unit
NEET	not in employment, education or training
NIH	National Institute of Health
NRF	National Research Foundation
NSC	National Senior Certificate
NSFAS	National Student Financial Aid Scheme
Pentech	Peninsula Technikon
PSET	Post-school Education and Training
PtaTech	Pretoria Technikon
QLFS	Quarterly Labour Force Survey
RU	Rhodes University
SAGRA	South African Graduate Recruiters Association
SCE	Standard Certificate Examination
SET	Science, Engineering and Technology
SETA	Sector Education and Training Authority
SU	Stellenbosch University
UFH	University of Fort Hare
UNorth	University of the North
UWC	University of the Western Cape
Wits	University of the Witwatersrand

EXECUTIVE SUMMARY

In order to support the objectives set out in the Department of Higher Education and Training's (DHET) 2013 White Paper for Post-school Education and Training (PSET), it is critical to engage with a strong evidence base of research. To this end, the Human Sciences Research Council (HSRC) has been commissioned by the DHET to lead and coordinate research towards developing a framework for skills planning. This framework aims to promote the national priority of a skilled and capable workforce so as to achieve an inclusive growth path in South Africa. A consortium comprising the HSRC, universities and research institutes has been established to drive the research agenda known as the Labour Market Intelligence Partnership (LMIP).

Theme 5 of the LMIP seeks to understand pathways through education and training and to the labour market. The key question addressed by this work is: What are the dynamics of access, progression, graduation and labour market destinations underpinning learner, student and worker mobility along various education, training and labour market trajectories, and how can this knowledge inform skills planning in South Africa? The graduate tracer study described in this report falls under Theme 5 of the LMIP and is motivated by the need for more information on the transitions from university to the labour market.

Interest in employment and unemployment among university graduates in South Africa has increased considerably over the past decade. The reasons for this interest are wide-ranging and often form part of the broader discourses on the post-apartheid labour market, high levels of youth unemployment, and the restructuring of the higher education landscape, as well as debates on the outcomes of affirmative-action policies. However, beyond addressing the imperatives of transforming the labour market and redressing past inequalities, much of the recent work on graduate labour market outcomes in South Africa also resonates with international discussions on the role of higher education in preparing graduates for the workforce, and on how the content of higher education curricula is aligned with the needs of employers, inclusive economic growth, human resource development, and the need for scarce skills.

Graduate tracer or destination studies provide critical information on labour market outcomes and the factors associated with these characteristics. Labour Force Surveys (LFSs) paint a broad picture of employment and unemployment at the national level, but they are not always able to provide more nuanced information on smaller population groups such as university graduates. The graduate tracer study described in this report interviewed graduates from the 2010 and 2011 cohorts of the two traditional universities in the Eastern Cape (the University of Fort Hare and Rhodes University). The study contributes data to the Labour Market Intelligence System (LMIS) and supports other themes of the LMIP through its particular focus on graduate employment in a province that has historically had one of the highest rates of unemployment in South Africa. The results presented in this report are largely comparative, as they identify pathways into and through university and then transitions to the labour market by graduates from two universities that have had two

different historical positions in the South African higher education system.

Underscoring the large differences between graduates from Rhodes University and the University of Fort Hare, the survey data highlights that, in addition to the expected differences in demographic and socio-economic characteristics, the experience of preparing for university was remarkably different for Rhodes and Fort Hare graduates. Rhodes graduates were far more likely to come from well-resourced or elite secondary schools, had passed Mathematics, Physical Science and English at the higher grade for the Senior Certificate Examination, and had achieved higher scores in their final-year examinations. Rhodes and Fort Hare graduates therefore entered higher education with very different observable levels of preparation for such education and the subsequent transition to the labour market.

It would appear that some of these differences in the background characteristics of the graduates from the two universities have also translated into different outcomes in the transition to university. While many of the study intentions of Rhodes and Fort Hare graduates were similar, the likelihood of converting these intentions into outcomes differ significantly. Across all fields of study, Rhodes graduates were more likely to have successfully obtained the degree they intended to pursue. In turn, the difference in the 'preference or ambition gaps' between the two cohorts of graduates appears to be related to schooling and socio-economic backgrounds. Fort Hare graduates reported that the main reasons for not obtaining their first-choice degree were related largely to insufficient academic performance (i.e. low Matric marks) and a lack of scholarship funding.

However, it is in the transition from university to the labour market where the largest differences between Rhodes and Fort Hare graduates are found. Most notably, the survey found that Fort Hare graduates are three times more likely to be unemployed than their Rhodes counterparts. However, there is fairly limited evidence that the higher risk of unemployment among Fort Hare graduates is linked with the study of more general subjects within the humanities. Among the Fort Hare cohort, humanities graduates were no more likely to be unemployed than graduates in SET or commerce subjects. The possibility remains that Fort Hare graduates have weaker social networks (particularly among private-sector firms) and that employer perceptions of the quality of Fort Hare graduates are partly responsible for the relatively high rate of unemployment among the Fort Hare sample.

Even among the employed graduates from the two universities, there are a number of important differences. Rhodes graduates earn significantly more than their Fort Hare counterparts and report higher levels of job satisfaction with almost all aspects of their employment. Perhaps the two largest differences in the experiences of the employed, however, are the means of finding their current job and the sector in which they are employed. It is telling that almost half of all Rhodes graduates found their current job through some type of social network (e.g. friends, relatives, social media, etc.), while Fort Hare graduates were far more likely to use conventional and more formal search strategies (e.g. newspaper advertisements). Moreover, the fact that there is such a stark divide between public- and private-sector employment among the two graduate cohorts suggests that historically shaped social networks continue to play a key role in employment outcomes.

The report concludes with an overview of the ways in which the historical legacy of the higher education system in South Africa continues to shape differentiation in the pathways into universities, study trajectories, and the subsequent transitions into the labour market. The implications of these findings for graduate employment, skills planning and equity are also discussed.

1. INTRODUCTION

In order to support the objectives set out in the Department of Higher Education and Training's (DHET) 2013 White Paper for Post-school Education and Training (PSET), it is critical to engage with a strong evidence base of research. To this end, the Human Sciences Research Council (HSRC) has been commissioned by the DHET to lead and coordinate research towards developing a framework for skills planning. This framework aims to promote the national priority of a skilled and capable workforce so as to achieve an inclusive growth path in South Africa. A consortium comprising the HSRC, universities and research institutes has been established to drive the research agenda known as the Labour Market Intelligence Partnership (LMIP).

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Interest in graduate employment and unemployment in South Africa has increased considerably over the past decade. The reasons for this interest are wide-ranging and often form part of the broader discourses on the post-apartheid labour market, high levels of youth unemployment (see Mlatsheni & Rospabé 2002; Rogan, Diga & Valodia 2013; Yu 2013), and the restructuring of the higher education landscape, as well as debates on the outcomes of affirmative-action policies (see Kerr – forthcoming). However, beyond addressing the imperatives of transforming the labour market and redressing past inequalities, much of the recent work on graduate labour market outcomes in South Africa also resonates with international discussions on the role of higher education in preparing graduates for the workforce and on how the content of higher education curricula is aligned with the needs of employers (see Kruss 2004; Teichler 2007; Van der Berg & Van Broekhuizen 2012).

The post-apartheid period has seen a comprehensive reorganising of the higher education system while, at the same time, there have been important structural changes in the labour market. Neither of these changes has occurred within a vacuum, as international trends in the reconfiguration of higher education institutions often have a local impact and the South African workforce (and economy more broadly) now forms part of an increasingly globalised labour market. Many of the changes associated with a globalising workforce have introduced fundamental shifts in labour market experiences for all workers, but, arguably, for the youth (often defined as 16- to 24-year-olds), in particular, as well as recent university graduates.[1]

One result is that there is now a greater number of uncertainties associated with the transition from

1 Following Van den Berg & Van Broekhuizen (2012), we define 'graduates' as those who have attained either a three- or four-year bachelor's degree from a university.

higher education to the labour market. The labour market outcomes of South African graduates, for example, tend to mirror the international experience of an increase in informal, contract, part-time and outsourced employment. This casualisation of work has been described by a number of scholars – perhaps most notably by Standing (2011) – as resulting in increases in outsourcing for both high- and low-skill labour, self-employment and the migration of skilled workers across national borders summarised in CHEC (2013). A key feature of this new 'regime' of work is that, in many countries, there has been sustained demand for high-skilled labour accompanied, at the same time, by seemingly contradictory evidence of rising levels of graduate unemployment (Teichler 2002, 2007).

Against the backdrop of a globalising workforce, high levels of youth unemployment, and the expansion of high-skill sectors (often at the expense of low-skill sectors), graduate tracer studies have come to be an important tool for understanding how new entrants to the labour market are adapting to these changes (CHEC 2013; Mugabushaka, Teichler & Schomburg 2003; Schomburg 2003; Schomburg & Teichler 2006; Teichler 2002). Internationally, such studies have been used to explore the transition from university to work as well as to investigate the role of institutions of higher education in meeting the demands of the labour market. In South Africa, there has been renewed interest in graduate employment and, more broadly, the role of higher education in addressing both high levels of youth unemployment and a perceived skills gap. To date, most work (DPRU 2006; Pauw, Oosthuizen & Van der Westhuizen 2006; Van der Berg & Van Broekhuizen 2012) on graduate labour market outcomes or the returns to tertiary education, more generally, have used nationally representative Labour Force Surveys (LFSs), but there have now also been a handful of studies that have traced graduates from institutions of higher education to the labour market (CHEC 2013; Cosser 2003; Letseka, Breier & Visser 2010; Moleke 2005a).

This report outlines the current educational and labour market context for graduates of South African universities and presents the results of a study that collected detailed information on the perspectives, choices, experiences and key labour market outcomes for graduates from two Eastern Cape universities. The report begins with a review of the literature on the transition from higher education to the labour market, discusses the key findings and lessons learnt from existing graduate tracer studies in South Africa, and then outlines the methodology for the Eastern Cape graduate tracer study.

The remainder of the report is structured as follows: The next section provides a brief overview of recent trends in graduate employment and unemployment in post-apartheid South Africa and outlines the key features of the post-secondary educational landscape. The section also presents a review of the existing graduate tracer or destination studies[2] that have been conducted in South Africa and comments on some of the main lessons that can be learnt from these studies. In Section 3, we provide the rationale underpinning the Eastern Cape study and present the key objectives as well as the specific research questions. Section 4 then discusses the study methodology, research design, sampling approach, questionnaire design, data collection, and analysis. The key results from the study are presented in three sections. Section 5 describes the transition from secondary school to university and Section 6 identifies the difference pathways through university experienced by Eastern Cape graduates. Section 7 then presents some of the main findings related to the transition from university to the labour market for further study. Finally, Section 8 concludes with a discussion of the findings and policy lessons, as well as the implications for skills planning in South Africa.

2 The terms 'graduate tracer study' and 'graduate destination study' are used interchangeably in the literature. Both terms simply refer to studies that follow graduates for a specified period of time after the completion of a degree.

2. LITERATURE REVIEW

Post-apartheid trends in graduate employment

In South Africa, much of the recent work on graduate employment in South Africa has been developed by two branches of literature. The first is concerned with 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 & Van der Westhuizen 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 and technikons (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 the humanities and arts, as well as education, are less likely to find employment, compared with those from fields like engineering and the medical sciences (Du Toit & Roodt 2008).

More broadly, there has been some research indicating that the South African labour force is saturated with an oversupply of graduates with general degrees, rather than those that are demanded by the economy. Bhorat and Oosthuizen (2005) identify this as the skills mismatch phenomenon and suggest that it forms a critical barrier to the country's economic growth. In support of this argument, there is also literature that considers the perspectives of employers on the skills of university graduates. Higher Education South Africa (HESA), for example, undertook a baseline study to take stock of the views and expectations of employers and their evaluation of the quality of graduates produced by higher education institutions in South Africa (Griesel & Parker 2009). The study found that employers generally expect graduates to have a set of basic communication skills and an understanding of the workplace (often described as 'soft skills'). The findings suggested, however, that there are a number of gaps between the expectations of employers and the skills recent graduates possess (Griesel & Parker 2009). The biggest gap appears to relate to the 'ability to find and access information' – and this attribute is also rated as the most important, grouped with 'written communication skills' and the 'ability to use information' (Griesel & Parker 2009: 20). Employers also identified competence in English, information and communications technology (ICT) skills, and a general understanding of the world of work as the most important aspects of the basic skills that are currently missing among South African graduates (Daniels 2007).

On the other hand, more recent research (Van Broekhuizen 2013; Van der Berg & Van Broekhuizen 2012) has suggested that the problem of graduate unemployment in South Africa has been greatly exaggerated. New research commissioned by the Centre for Development and Enterprise reveals that the unemployment rate for people with university degrees has consistently been below 5% (Altbeker & Storme 2013). Graduate unemployment (defined broadly), like unemployment generally in South Africa, was highest in about 2001, at which point about 8% of university graduates were unemployed

as were just over 18% of diplomates.[3] 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).

Although graduates are much more likely to find employment, not all graduates 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, Mayet & Visser 2010; Branson, Leibbrandt & Zuze 2009c; Letseka et al. 2010; Moleke 2005a; Pauw, Oosthuizen & Van der Westhuizen 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 the 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 is 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 et al. 2006)

This work has also demonstrated that there is a large difference in employment outcomes between graduates from universities and those who have obtained tertiary qualifications from institutions with a vocational focus (Further Education and Training (FET) colleges). Much of the 'problem' of graduate unemployment, it is argued, is associated with students who have attended FETs while unemployment rates for university graduates remain very low (Van Broekhuizen 2013; Van der Berg & Van Broekhuizen 2012).

3 This term generally refers to individuals with post-matriculation certificates or diplomas (see Van der Berg & Van Broekhuizen 2012).

A changing labour market and the returns to education

A second branch of the literature identifies important structural changes that have occurred in the post-apartheid labour market. Much of this work suggests that, in line with trends elsewhere in the world, the returns to matric and post-secondary education have risen, while the returns to levels of education below matric have fallen sharply. This change has occurred at the same time as a broader compositional shift towards a skills-based labour market such that workers with only primary education or incomplete secondary education are concentrated largely in sectors that are shrinking, while those with a matric or some level of tertiary education are found in the faster-growing sectors of the economy (Branson & Leibbrandt 2013b).[4] This skills twist is particularly damaging in the South African case, since the decrease in returns to secondary education and below have dampened the gains that have been made in improving participation in basic schooling. Moreover, the growth of sectors that require skilled labour has impacted South Africa precisely at the time during which there has been a large increase in the labour force participation of unskilled workers (Banerjee et al. 2008; Branson et al. 2012: 11).

Leading on from the above, inequality in labour market outcomes form what Branson et al. (2012: 5) identify as the 'the missing link in the change in the relationship between education and earnings inequality'. In the post-apartheid context, earnings inequality has been driven, to some extent, by the increasing returns – particularly for black graduates (see Branson & Leibbrandt 2013b) – to tertiary education and the static (or diminishing) returns to a secondary or primary level of education (Branson et al. 2012). Not surprisingly, then, the earnings premium to education in South Africa is most noticeable on the successful completion of secondary school (matric) and increases with each year of post-secondary education (Anderson, Case

4 In South Africa, this has been associated with the shrinking of employment in the mining and agricultural sectors, while employment has increased in finance, wholesale and retail sales, and in community, social and personal services (Banerjee et al. 2008).

& Lam 2001; Branson et al. 2012; Van der Berg & Van Broekhuizen 2012). The earnings and employment returns to post-secondary education therefore remain high in South Africa (Bhorat & Leibbrandt 2001; Branson & Leibbrandt 2013a, 2013b; Branson, Leibbrandt & Zuze 2009b; Keswell & Poswell 2004; Oosthuizen 2005; Van der Berg & Van Broekhuizen 2012) and have probably even increased over time (Branson, Leibbrandt & Zuze 2009a; Cloete 2009).

In practice, this has meant that those with qualifications and marketable skills have seen an improvement in the returns to their education and training, while low-skill workers have seen their labour market prospects worsen. For example, real wages have increased for skilled workers over the past decade, while unemployment has increased for those with only a secondary education or less (Banerjee et al. 2008). Given the vast body of work (Branson & Leibbrandt 2013b; Burger & Woolard 2005; DPRU 2006; McCord & Bhorat 2003; Pauw, Bhorat et al. 2006; Pauw, Oosthuizen & Van der Westhuizen 2006) that has identified a high-skills bias to the growth in employment in the post-apartheid period, the role of higher education in addressing skills development and unemployment takes on an increasing importance.

The post-secondary landscape in South Africa

Alongside these changes in the labour market, tertiary education in the post-apartheid period has seen a number of far-reaching legal, administrative and policy changes, as well as a significant reorganisation of the institutions of higher education.[5] The aim of this restructuring has been to establish a system that is more capable of meeting current job market demands, redressing inequalities in access to higher education, and sustaining student growth (HESA 2009). In the Eastern Cape, this exercise saw the emergence of the Walter Sisulu University and the consolidation of the University of Fort Hare and Rhodes University (including the transfer of a city campus in East London from the latter to the former), as well as the transformation of the University of Port Elizabeth into the Nelson Mandela Metropolitan University. Policy and related institutional developments have seen the emergence of the Council on Higher Education and the linkage of university qualifications into a national qualifications framework. Transformation of the FET sector has seen its consolidation around the following institutions in the Eastern Cape: Buffalo City FET College, East Cape Midlands FET College, King Hintsa FET College, King Sabata Dalindyebo FET College, Lovedale FET College, and Port Elizabeth FET College.

At the national level, evidence to date suggests that this restructuring has not necessarily been accompanied by meaningful transformation in access to higher education (Branson, Leibbrandt & Zuze 2009a). The absolute number of students enrolled in tertiary institutions has only kept pace with population growth, while the age, gender and racial profile of the higher education sector has not been altered appreciably (Branson et al. 2012; Branson & Leibbrandt 2013b; Branson, Leibbrandt & Zuze 2009c; Cloete 2009). As a result, there has been very little change in the percentage of young people who have a tertiary education (i.e. participation and completion rates for tertiary education seem to have changed very little since 2000 (Branson, Leibbrandt & Zuze 2009c). Perhaps the only significant change in tertiary enrolment has been the increase in university attendance relative to technikons (Cloete 2009). However, young white South Africans are increasingly more likely to enrol in a university than a technical college as compared with black students (Cloete 2009).

Related to the problem of slow transformation, access to tertiary institutions (i.e. low participation rates) has been one of the main concerns associated with higher education in South Africa.

5 Between the late 1990s and the mid-2000s, the higher education sector was transformed through a series of mergers and incorporations aimed at collapsing 36 universities and technikons (polytechnics) into 23 institutions (HESA 2009; Stumpf et al. 2009). As a result, there are now three types of public higher education institutions in South Africa: traditional universities, universities of technology and comprehensive universities. The so-called comprehensive universities, of which there are now six, offer a combination of academic and vocational diplomas and degrees, while the six universities of technology focus on vocationally oriented education. The 11 traditional universities offer theoretically oriented university degrees.

The number of young people (of the ages 16–24) who are not in employment, education or training (NEETs) has attracted much policy attention in recent years. Just over a third of all 16- to 24-year-olds and an alarming 50.7% of 23- and 24-year-olds are classified as NEETs in South Africa (Cloete 2009; Statistics South Africa 2013). Moreover, the fact that a large number of these young unemployed people could be involved in some form of post-secondary study but are not, suggests that there are still a number of barriers to tertiary education in South Africa (Sheppard & Cloete 2009; Stumpf et al. 2009). One fairly widely held conclusion from the literature on higher education in South Africa, therefore, is that access to, and success in, tertiary education is still very closely associated with financial resources (Branson, Leibbrandt & Zuze 2009a).

At least one part of the problem of low rates of enrolment in tertiary education in South Africa is that many young people are unable to afford a university education, while the further education sector (FETs) remains weak and fragmented (Stumpf et al. 2009). Despite the large unmet need for further education and training, particularly among 18- to 24-year-olds, only about 30% of those in tertiary education are enrolled in an FET college (Stumpf et al. 2009). Participation rates, therefore, are relatively low for this sector and compare somewhat unfavourably with those of other countries. Indeed, from a global perspective, South Africa lags behind in overall participation rates for tertiary education. The global rate is estimated to be 25% and South Africa is ahead only of South and West Asia, as well as sub-Saharan Africa, with 22% (Steyn 2009). An additional problem identified in South Africa is a relatively low graduation rate. Just under a third of students who enrolled in a tertiary institution in 2000 dropped out during the first year. Of the rest, another 20% dropped out during the next two years of study. Overall, only a fifth of this remaining group managed to complete their bachelor's degrees within the specified time (Letseka & Maile 2008).

Graduate destination studies in South Africa

From a narrow labour market perspective, the general view therefore appears to be that the post-apartheid education and training system has had limited success in building skills for participation in the economy, even as the economy has failed to create jobs that fit the skills profile of South African workers. As identified earlier, much of this information on university graduates and their subsequent labour market outcomes has come from Labour Force Surveys (LFSs) and, to some extent, ad hoc institutional surveys and exit interviews. A number of higher education institutions have been doing regular 'exit surveys' at graduation ceremonies or have been attempting to track graduates' progress through their alumni offices. A broad picture emerging from these types of surveys is that graduates from HWUs such as the University of Cape Town and Stellenbosch University report very low rates of unemployment, while students from HBUs (such as the University of the Western Cape and the Cape Peninsula University of Technology) have a higher risk of unemployment and take longer to find their first job. This institutional difference in labour market outcomes is one of the key recurring findings in a number of South African graduate tracer studies (CHEC 2013).

In addition to these institutional exit surveys, there have been several studies that have attempted to link university graduates with outcomes from firms' recruitment drives or to identify the employment prospects of graduates from specific fields of study. The South African Graduate Recruiters Association (SAGRA), for example, conducts an online survey investigating 'graduate experiences of employer recruitment' (CHEC 2013: 8). The 2012 SAGRA Candidate Survey questioned graduate employees from the top 80 graduate-employing companies in the country and found that three-quarters of all survey participants came from the top seven of South Africa's 23 universities. Several smaller discipline-focused studies have also contributed to the literature by investigating the employment outcomes of graduates in education (Sing 2010) and library and information sciences (Shongwe & Ocholla 2011), as well participants in a National Research Foundation-funded (NRF) postdoctoral fellowship in innovation (Mouton et al. 2010).

Since the early 2000s, there has also been a handful of larger graduate tracer studies conducted

in South Africa (see Appendix A). In 2003, the Human Sciences Research Council (HSRC) released a report based on the findings of a study on the responsiveness of technical colleges to the South African labour market. The report presented the results of a national tracer study of 3 503 learners who graduated from the country's 151 technical colleges (prior to the national reconfiguration) in 1999 with an N2, N3 or National Senior Certificate (NSC) (Cosser 2003; McGrath 2003). The respondents' biographical and demographic information, along with educational achievement and employment status and experiences, was analysed and compared in order to provide a clearer picture as to the responsiveness of technical colleges to labour market needs.

The study (Cosser 2003) found that financial considerations (affordability of tuition) emerged as an important reason for choosing a particular institution (18.7%), followed by the reputation of a college (17.2%). Job search strategies tended to be informal with personal contacts reported as the most utilised means of finding work (29.5%), followed by relatives (18.9%) and newspaper advertisements (17.4%). More generally, the study found that graduate employment was low (only 35% of graduates were employed) and that the N2, N3 and NSC qualifications were seen largely as 'a stepping stone to higher education' (Cosser 2003: 53), rather than as a gateway to immediate employment. The probability of employment among graduates, however, varied significantly by race and gender, with white males being far more likely to find employment than other groups (Cosser 2003).

A second national graduate study (Moleke 2005a, 2005b), and the first to focus on university graduates specifically in South Africa, traced 2 672 graduates who obtained their qualifications between 1990 and 1998. 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. However, as with the work on technical-college graduates (Cosser 2003), Moleke (2005a) found that employment prospects differed by race, gender, field of study and type of institution (i.e. HWU as opposed to HBU).

Even after controlling for field of study, the findings suggest that black and coloured graduates, and those from HBUs in particular, are absorbed into the labour market more slowly (Moleke 2005a). Employment sectors also seem to differ by race and the findings suggest that the public sector is often the first employer for black and coloured graduates, while white and Indian graduates obtain their first job in the private sector (Moleke 2005a). While unemployment was found to be generally low among all graduates, a number of characteristics were associated with having experienced periods of unemployment. In particular, the study showed that, once again, race, gender, field of study and type of institution are associated with periods of unemployment. Black graduates, females, those with degrees in the humanities and graduates from HBUs were significantly more likely to report having experienced a period of unemployment (Moleke 2005a).

There have also been three more recent graduate studies in South Africa that add to the literature on transitions from higher education to the labour market. The first (see Cosser & Letseka 2010) extended the earlier work by investigating the factors that influence choice of field of study along with the dynamics that determine dropout and graduation among students. The study was unique in that it traced university students who dropped out in 2002 as well as those who achieved their qualification in that year. Among successful graduates[6], the study explored labour market outcomes and the factors associated with employment. Overall, 34 548 questionnaires were sent to all students who either graduated or dropped out from the seven universities participating in the study. These institutions included: the University of Fort Hare (UFH), the University of the Western Cape (UWC), the

6 The graduates who were sent questionnaires included those who received the following qualifications: a three-year undergraduate degree, a four-year professional degree, a one-year postgraduate certificate, a one-year honours degree, a three-year National Diploma or a four-year Baccalaureus Technologiae.

Peninsula Technikon (Pentech), Stellenbosch University (SU), the University of the Witwatersrand (Wits), the University of the North (UNorth) and the Pretoria Technikon (PtaTech) (Cosser & Letseka 2010).

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 successfully completing university and of finding employment, even after controlling for type of institution and field of study (Bhorat et al. 2010). However, while the legacy of historical inequalities may still affect prospects for employment, a more positive finding is that, once a graduate has found employment, there does not seem to be an earnings differential by race after controlling for other factors (Bhorat et al. 2010).

Building on the theme of unemployment among humanities graduates, one of the most comprehensive surveys of university graduates in South Africa was conducted by the Centre for Research on Science and Technology (CREST) at Stellenbosch University in 2010 (Mouton et al. 2010). While the study was wide-ranging in scope (no parameters on the year of graduation were applied), there are a number of serious problems with representivity (about 80% of respondents were white and a quarter were over the age of 55). Nonetheless, the study captured information on the largest number of respondents (12 064) of any graduate study in South Africa to date. The key finding from the study is that graduates from the humanities do not face a higher risk of unemployment compared with those from other disciplines (Mouton et al. 2010). Humanities graduates do, however, earn considerably less (between 30 and 35% less) than graduates with more technical degrees (e.g. engineers). On the whole, the authors conclude that they have found 'overwhelming evidence that university education is worthwhile' (Mouton et al. 2010: 13) and that the skills and competencies acquired in South African universities are closely aligned with the requirements of employers and the labour market more generally.

Finally, the most recent graduate study was conducted by the Cape Higher Education Consortium (CHEC) (CHEC 2013). The CHEC study aimed to trace all 2010 graduates from four Western Cape universities (the University of Cape Town, Stellenbosch University, Cape Peninsula University of Technology and the University of the Western Cape). 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 was employed at the time of the interview. Similar to other studies, they found the burden of unemployment to be among African graduates and that the institutional differences are significant. The results also suggest that younger graduates who are entering the labour market for the first time are considerably more likely to be unemployed (CHEC 2013).

3. STUDY BACKGROUND

Broad outline

The graduate tracer study described in this report extends the work on graduate employment in South Africa by investigating the links between higher education and the labour market in the two traditional[7] universities of the Eastern Cape (the University of Fort Hare[8] (UFH) and Rhodes University[9] (RU)). The study contributes data to the Labour Market Intelligence System (LMIS), and supports other themes of the Labour Market Intelligence Partnership (LMIP) through its particular focus on graduate employment within the province that has historically had one of the highest rates of unemployment in South Africa. The study design allows for the investigation of a number of themes, including: the factors associated with different labour market outcomes and earnings; the value of general university education and specific courses; how students choose their field of study; and the strategies utilised to find employment.

The study also builds on the methodological lessons learnt from the existing graduate tracer studies in South Africa and contributes to a better understanding of how to trace and measure graduate outcomes. In particular, the study adapts both the research design and instrument developed by the recent Cape Higher Education Consortium (CHEC) study in order to identify how a tested methodology can be used in different regional, demographic and institutional contexts. One of the goals of the study is, therefore, to suggest how graduate studies can form part of an ongoing and relevant source of data for both national-level planning and for institutions of higher education.

In addition, the study extends the existing work on graduate employment in post-apartheid South Africa by exploring the interactions between race, gender, field of study, socio-economic status, schooling background, academic achievement and success in the labour market. The study allows for the assessment of links between course content and labour market outcomes, and between skills portfolios, social networks and employment. Finally, the study provides an interesting comparison between two universities that followed different historical trajectories, experienced different types of institutional reconfiguration in the early 2000s, and adapted in their own ways to the arrival of democracy and the challenges of the 21st century. Each also has different historical linkages to the liberation movement and to the post-1994 government, as well as to industry and the public sector. The institutions offer different course mixtures, with some course offerings, such as pharmacy or agriculture, being unique to one or the other university.

7 Within the new higher education dispensation, Rhodes University and the University of Fort Hare are both classified as 'traditional universities', although their historical and institutional characteristics are vastly different, with the former identified as an HWU and the latter as an HBU. The Nelson Mandela Metropolitan University and Walter Sisulu University, on the other hand, are classified as comprehensive universities.

8 UFH offers a range of degrees and diplomas in the faculties of science and agriculture, social sciences and humanities, and management and commerce, as well as at the Nelson R Mandela School of Law.

9 RU offers both undergraduate and postgraduate degrees in the faculties of humanities, science, commerce, pharmacy, law, and education. It has the highest ratio of academic staff to students of any university in South Africa and is perhaps best known for its journalism and media studies departments.

Objectives

The core objectives of the study are to explore key education and labour market pathways and to understand the demographic, socio-economic, spatial or institutional characteristics that are associated with graduates' decisions throughout their university education and their transition to the labour market. In achieving these objectives, the study aims to examine how the regional (and national) labour market is linked with graduates from these two Eastern Cape universities. Questions that arise include where graduates who are employed work, how long it took to find work, what the nature of this employment is, whether this employment is largely within the Eastern Cape, whether employment is related to the field of study pursued, in which sectors employment has been found, and the extent to which such employment has been in established institutions or enterprises as opposed to new initiatives or informal activities.

4. METHODS

Eastern Cape context

In 2011, more than a third (36%) of the Eastern Cape population had a primary education or less, the highest proportion of all provinces in South Africa (own calculations using Census 2011 data). Within the province, the Alfred Nzo, Joe Gqabi, OR Tambo, Amathole and Chris Hani districts all had populations of which more than 40% had a primary education or less. Of the Eastern Cape population, 12% had a matric as their highest qualification, and 16% had a matric or a further qualification (rising to more than 25% for the two metropolitan municipalities), with 1.5% having a bachelor's degree or more. In 2011, 8.5% of the Eastern Cape population aged 20 years or older had some higher education. This was the third-lowest figure of all the provinces, after the Northern Cape and North West provinces, and 3.3 percentage points lower than for South Africa as a whole.

Research design

The research design is a graduate tracer study which interviewed graduates from the two Eastern Cape universities. The study is based on a quantitative survey design that incorporated some of the key methodological lessons learnt from the growing collection of international graduate tracer studies (for a comprehensive handbook on these studies, see Schomburg (2003)). In doing so, the main lessons on sampling, questionnaire design, data collection, refusals and non-response from both international graduate studies (Schomburg 2003) and the handful of graduate destination studies that have been conducted in South Africa (cf. CHEC 2013; Moleke 2005a) were reviewed.

Graduate tracer studies

Graduate tracer or destination studies provide critical information on labour market outcomes and the factors that are associated with these characteristics. Labour Force Surveys (LFSs) paint a broad picture of employment and unemployment at the national level, but they are not always able to provide more nuanced information (such as institution type and field of study) on smaller population groups such as university graduates (but see recent work by Van Broekhuizen (2013)). While graduate tracer studies are not necessarily able to identify causal relationships between labour market outcomes and individual, educational and institutional factors, they are able to identify more detailed outcomes such as time spent looking for employment, unemployment history, educational achievements, degree type, schooling background, past education choices and type of current employment (e.g. full-time as opposed to part-time or formal as opposed to informal) than are typically available in large national surveys (such as the LFSs and the Quarterly Labour Force Surveys (QLFSs)).

In addition, graduate studies often collect less-conventional information such as the kind of work-related tasks that graduates carry out, the relationships between study and work, as well as reported job satisfaction (Schomburg 2003). Similarly, graduate tracer studies are able to link these diverse labour market characteristics with more nuanced explanatory variables such as schooling history, academic achievement, parental education, field of study, home language and type of institution (Schomburg 2003). Graduate tracer studies have been used for a range of different

objectives (see Schomburg 2003; Schomburg & Teichler 2006), but one of their key strengths is that they can provide valuable information at the institutional level. So, while they are often not regionally or nationally representative, they are well placed to identify how particular institutions serve their graduates and how they align with the demands of the labour market (Teichler 2007).

Sampling

Perhaps the key methodological challenge with graduate tracer studies in the South African context has been the difficulty associated with compiling a reliable sample frame. Information on graduates is held by university alumni offices, data management units at both the national and university levels[10] and, for students who have received funding, by the National Student Financial Aid Scheme (NSFAS) of South Africa (CHEC 2013). The main problem, however, is that these sources of information contain incomplete and often outdated records on graduates (CHEC 2013).[11] An additional difficulty is that the reliability of these records varies substantially across both institutions and graduate cohorts (CHEC 2013).[12] Information on graduates from alumni offices is also very incomplete and alumni office records are also non-representative and largely out of date.[13] A related challenge is that access to unit records for graduates is a sensitive matter and permission to access the information that allowed alumni to be traced was difficult to obtain.

10 Both university data management units and the national Department of Higher Education and Training (DHET) capture information on university graduates using the Higher Education Management Information System (HEMIS).

11 While the recent CHEC study had a 22.5% response rate, the main reason for non-response was that reliable contact information could not be found for many graduates (personal communication with the CHEC study team).

12 Personal communication with the principal investigators of the most recent graduate tracer study in South Africa (CHEC 2013) suggests that it might not be possible to get contact details for all but the most recent graduate cohorts (i.e. graduates from 2011 to 2012).

13 Personal communications with the CHEC study team and the alumni offices of RU and the UFH have confirmed this. For example, the RU alumni office only has contact details for roughly 1 000 of the estimated 9 300 graduates who completed their degrees between 2007 and 2011. Many of these details, moreover, are out of date and unreliable.

Sample size

One of the key issues related to sample size was whether to attempt to sample graduates from more than one year. International experience suggests that tracer studies which are being conducted for the first time should collect information on five recent cohorts (Schomburg 2003). Collecting information from only one year, or from the most recent year, means that some important types of information may be missing. Information from a recent year of graduates, for example, would likely be missing information on further education and medium-term experiences of the transition to the labour market. More broadly, though, it has become common practice, when possible, to include a number of different cohorts within graduate tracer studies to take account of the possible differences experienced by cohorts as they respond to both external conditions (e.g. the 2008 financial crisis) and accumulated experiences in the labour market (Schomburg 2003). As argued by Schomburg (2003), a cross-sectional graduate study that includes several different years provides a far more nuanced picture of the transition from higher education to the labour market than does a survey of graduates from a single year. The problem, however, is that response rates tend to be much lower for older cohorts, as they are more difficult to contact owing to the fact that university alumni offices have less-recent information (Schomburg 2003).

Table 1 presents a stylised account of the experiences of graduate tracer studies from around the world (see Schomburg 2003). The table suggests that the ideal time to interview alumni is from one to five years after their graduation. Contacting graduates less than a year after graduation will mean that many respondents will not yet have found work or will not have decided whether to study further. On the other hand, international experience suggests that waiting for more than five years from graduation induces recall bias (particularly about the transition to the labour market) and makes contacting alumni very difficult.

Given the desirability of a representative sample of graduates and the way in which field of study and year of graduation are likely to be associated with labour market outcomes, it was decided to draw a

Table 1: Stylised summary of international graduate tracer studies' experiences regarding survey timing

Time after graduation	Study focus	Lessons
6 months	Transition to the labour market	No work experience for many graduates
1–2 years	Transition and first job	Good information on the transition to employment
3–5 years	Early career	Information on transition and career development
More than 5 years	Career path	Risk of recall bias and great difficulty in contacting alumni

Source: Adapted from Schomburg (2003)

probability sample of graduates from two recent years. The sample was drawn from a stratified[14] random sample of graduates who completed a bachelor's degree in either 2010 or 2011 (see Appendix B for more details). Aggregate information on the broad characteristics of graduates was available through the HEMIS database and more precise information on each graduating group was available from the respective university records offices. Table 2 shows the total population of graduates from the 2010 and 2011 cohorts, as well as the estimated desired minimum sample size. Once the fieldwork was complete, statistical weights were estimated in order to correct for undersampling of field of study (CESM), gender and race.

Table 2: Total number of graduates from Rhodes University and the University of Fort Hare by field of study, 2010–2011

CESM	Population size	Minimum sample size
	University of Fort Hare	
SET	**510**	**60**
Business/Commerce	737	86
Education	291	34
Humanities	1 371	160
Fort Hare Subtotal	**2 909**	**340**
	Rhodes University	
SET	415	66
Business/Commerce	525	85
Education	21	3
Humanities	1 057	169
Rhodes Subtotal	**2 018**	**323**
TOTAL	**4 927**	**663**

Source: Own calculations from university administrative records

14 The sample was stratified by field of study. Field of study was 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 the Humanities.

Data collection

Data were collected online, via postal questionnaires and telephonically. For the online segment of the study, the questionnaire was distributed through the popular Internet survey platform Survey Monkey. As per the agreement with the two participating universities, telephonic interviews were only conducted with graduates who did not complete the online questionnaire, who did not respond to the postal survey, or for whom there were no e-mail or postal contact details. A research team of six fieldworkers and a fieldwork coordinator, working under the supervision of an academic staff member of the Neil Aggett Labour Studies Unit (NALSU), was assembled and trained. The fieldworkers were all postgraduate (either masters or PhD level) students from RU.[15] This team worked on a number of tasks, such as tracing graduates included in the sample, using university contact information as a starting point.

Response rates

One of the most significant challenges associated with almost all graduate tracer studies is a generally low response rate (Schomburg 2003). The response rate for international graduate tracer studies is often below 50% or, depending on the method of data collection, below 25% (Schomburg 2003). The main factors that seem to affect response rates include: the time elapsed between graduation and the timing of the survey, the mode of data collection (postal surveys are often the least reliable), the level of access that graduates have to the Internet, and the accuracy of contact details held by alumni offices. In general, response rates are very difficult to anticipate in tracer studies and the accepted

15 It was important to recruit fieldworkers from different backgrounds so that respondents could be interviewed in their home language.

Table 3: Methods and response rates for national South African graduate tracer studies

Study	Method of data collection	Response rate
Cosser et al. 2003	Postal survey	35%*
Moleke 2005	Postal survey	---
Letseka et al. 2010	Postal survey	15%
CREST 2010	Online	---
CHEC 2013	Online and telephonic	22.5%

**For this study, however, only half of all graduate contacts obtained from the participating institutions yielded useable information.*

Table 4: Sample sizes and response rates (RU)

	Total graduates	Minimum sample target	Random draw size	Random draw/ total	Success	Response rate
SET	415	66	200	0.48	101	0.50
Commerce	525	85	240	0.46	112	0.47
Education	21	3	21	1.00	9	0.43
Humanities	1 057	169	540	0.51	247	0.46
All	**2 018**	**323**	**1 001**	**0.50**	**469**	**0.47**

Notes: 'Success' denotes the total number of completed interviews. The 'response rate' is the proportion of the draw that was successfully interviewed (success/random draw size).

wisdom is that research teams should consider the context in which they are conducting the study as they design the research (Schomburg 2003).

Owing to time and budget constraints, there have been relatively few studies (internationally) that have made use of face-to-face interviews with graduates. In developed countries, self-administered postal surveys are the most common method of data collection. This is not likely to result in a high response rate in South Africa and experiences in the local context suggest that response rates have, on the whole, been fairly disappointing (see Table 3). One of the main problems, as outlined by McGrath (2003: 19), is that 'the sample frame is [only] as representative as the willingness and capacity of colleges to respond to requests for information'. Based on the response rates from these existing studies, the research team made use of an incentive scheme similar to that of the study by the CHEC.[16]

Tables 4 and 5 present response rates at RU and the UFH, respectively. A total of 469 graduates from RU and 742 graduates from the UFH (n = 1.211) were successfully interviewed. The tables suggest, first and foremost, that the response rates are appreciably higher than for past tracer studies conducted in South Africa. In part, this is probably because the random-sample design allowed the research team to focus more resources[17] on tracing and contacting each graduate (since a smaller sample size was required). At RU, the overall response rate was 47% and therefore compares favourably with other recent studies that report response rates (see Table 3). Response rates were somewhat lower at the UFH (39%) and this was due to the lower number of graduate contact details on record.

Table 6 outlines the mode of data collection by university and field of study. Owing to the paucity of recent e-mail addresses in the UFH student records, the vast majority (89%) of surveys at this institution were conducted telephonically. At RU, on the other hand, regular updates on graduate contact details meant that useable e-mail addresses were available for most graduates. In addition, a requirement of the ethical-clearance process was that graduates first be contacted via e-mail (through the university's data management unit) before access to personal

16 The CHEC research report noted the success of incentives such as offering prizes in the form of iPads and gift vouchers in improving graduate response rates. We entered each respondent into a draw for two iPads (one given to a respondent from each university).

17 Fieldworkers also used social-media platforms to trace and contact graduates for whom there were no useable contact details on record.

Table 5: Sample sizes and response rates (UFH)

	Total graduates	Minimum sample target	Random draw size	Random draw/ total	Success	Response rate
SET	510	60	356	0.70	136	0.38
Commerce	737	86	516	0.70	218	0.42
Education	291	34	204	0.70	50	0.25
Humanities	1 371	160	960	0.70	338	0.35
All	**2 909**	**340**	**2 036**	**0.70**	**742**	**0.39**

Notes: 'Success' denotes the total number of completed interviews. The 'response rate' is the proportion of the draw that was successfully interviewed (success/random draw size).

Table 6: Mode of data collection, by field of study and institution (%)

	SET	Commerce	Education	Humanities	All
Rhodes University					
Telephonic	42.57 (43)	39.29 (44)	88.89 (8)	41.30 (102)	42.00 (197)
Online	57.43 (58)	57.14 (64)	11.11 (1)	57.09 (141)	56.29 (264)
Postal	0.00 (0)	3.57 (4)	0.00 (0)	1.62 (4)	1.71 (8)
Total	**101**	**112**	**9**	**247**	**469**
University of Fort Hare					
Telephonic	95.59 (130)	83.03 (181)	84.00 (42)	90.53 (306)	88.81 (659)
Online	4.41 (6)	16.97 (37)	16.00 (8)	9.47 (32)	11.19 (83)
Postal	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)
Total	**136**	**218**	**50**	**338**	**742**

Notes: Raw numbers are in parentheses.

contact details (i.e. postal addresses and telephone numbers) could be released to the study team. As a result, the majority (56%) of Rhodes respondents accepted the e-mail invitation to complete the online version of the questionnaire. The postal-survey component of the fieldwork failed almost completely. Out of roughly 500 questionnaires distributed by post, only eight (all from RU) were completed and returned. However, it is possible that some of the online respondents found the link to the survey from the postal version of the questionnaire. Since many graduates were contacted via a postal questionnaire and an e-mail (with a link to the online survey), it is not possible to identify which respondents responded specifically to the postal invitation to participate.

The questionnaire

The questionnaire was developed following consultations and collaboration with key stakeholders[18] and research organisations with experience in conducting graduate studies. Preliminary consultations with the CHEC study group yielded an understanding that the NALSU research team would work with CHEC researchers to adapt the questionnaire that was used in the Western Cape for the Eastern Cape context. The advantage of adapting an existing research instrument is that the questions have already been extensively piloted and key labour market outcomes can be compared across contexts. As far as

18 Key stakeholders include: the alumni and planning offices of both universities; potential partners in creating a network of graduate destination research in South Africa (e.g. the CHEC); and the relevant provincial and national government departments.

possible, the questionnaire aimed to be comparable with the research instruments from earlier graduate tracer studies in South Africa (e.g. those by the HSRC and CHEC) but also developed the methodology further in order to meet the study objectives. In line with these objectives, the core modules of the questionnaire included information on:

- **Demographics:** including age, race, gender, province of origin, and place of current residence.
- **Education:** including school and post-school education history (including institutions attended, results, and transition between school and university), courses taken at university, reasons for course choices and changes, degrees and diplomas obtained, academic achievement, sources of finance of studies, views on value of knowledge and qualifications gained, exposure to employment possibilities while studying, additional training received (whether on the job, formal or informal), current university studies (whether full-time or part-time), and plans after completion of current studies.
- **Employment:** including state of employment (if unemployed, sources of livelihood were explored, as well as duration of unemployment, job searching, prospects and preferences; if not in the labour market, e.g. due to full-time studies, only questions regarding history, plans, prospects and preferences were asked), previous employment and reasons for transitions between jobs, means by which jobs (particularly current job) were found, time in current job, prospects in current job, current hours and preferred hours, preferred job, current job searching (if any), type of work, links between content of studies and current employment, employment sector, employer, geographical place of employment, and earnings.
- **Household characteristics:** including household structure and living arrangements, relationship with parents and/or extended family (including whether living with them), financial and other support commitments between respondents and parents and/or extended family.

A draft questionnaire was piloted with graduates from RU, who were then removed from the sample list. Pilot interviews were conducted telephonically and online so that the pilot phase resembled the actual process of data collection in as much detail as possible. However, in order to improve the clarity and consistency of the survey tool, face-to-face cognitive interviews were also held with a small number of recent graduates from RU.

Data capturing, coding and cleaning

With respect to telephonic interviews, the study combined the processes of data collection and data capturing by making use of a computer-assisted telephone interviewing (CATI) technique (again based on Survey Monkey). Through this process, the interviewer followed a script provided by the software and, simultaneously, allowed the fieldworker to enter the respondent's answers in real time. The questionnaire was imported into the software and, during the interview, it prompted the fieldworker to capture responses and automatically followed programmed branches and skip patterns.[19] Data from the interviews and postal and online questionnaires were converted into a statistical software package (STATA 12.1) for cleaning and validation.

Once the data were ready for analysis, statistical weights were constructed so that descriptive statistics from the sample are representative of graduates from the two universities. Post-stratification weights were computed by comparing the sample that was effectively covered with the population of students who had graduated. Post-stratification compared an n-way table for the population with the equivalent n-way table for the sample. The weights were then constructed based on CESM, gender and race (See Appendix D).

19 Since three forms of data collection were used (online questionnaire, postal surveys and telephonic interviews), the research team still needs to investigate whether there are systematic differences in the responses in respect of these different methods of data collection. The CHEC study reported that there were no significant variations between online and telephonic responses (CHEC 2013).

Limitations

There are several important limitations to the study's design. Firstly, the study team did not have full access to HEMIS data or to student university records. As a result, the information captured in the survey is the result of retrospective self-reporting and cannot be verified by administrative records. It is unclear for which types of information this bias will be most severe, but the information on past achievements (e.g. matric symbols and subjects, examination levels, etc.) is likely to be particularly problematic. 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. The accuracy of these proxy observations of household characteristics is therefore possibly limited by a lack of direct information, particularly where respondents are not living with their parents and/or siblings.

An additional limitation, self-selection into the study, could introduce bias, since the online component of the fieldwork relied entirely on the choice of each respondent to complete the survey. While this is also true of the telephonic component, there were very few refusals once fieldworkers made the initial contact with graduates for whom their respective university had a correct telephone number. The e-mail lists, for RU in particular, were targeted but non-completers (for the online component) could only be contacted if the university also had accurate telephone contact information. To the extent that a portion of the sample was only contactable via e-mail, self-selection into the study remains a possible source of bias. In addition, a much larger percentage of the UFH sample was not contactable via e-mail, and administrative records from this institution were generally less reliable. Bias could therefore be a cause for concern if the availability of reliable contact information is also correlated with some of the outcomes of interest (e.g. employment status).

Ethical considerations and data storage

The proposal and research protocol were submitted for ethical clearance to the higher degrees committees at RU and the UFH. Fieldwork began only after the study received ethical clearance and all project members had been trained in obtaining informed consent from participants. In addition, fieldworkers were asked to complete an online ethical-research course offered by the National Institute of Health (NIH) in the United States (www.phrp.nihtraining.com).[20]

Contact information, informed-consent forms, and any material containing the identities of study participants are stored in a secure room at the Institute of Social and Economic Research (ISER) at RU and will be kept for a period of five years. A cleaned (anonymous) version of the data was used during the analysis stage of the data and the master data file is stored on a password-secured computer at the ISER.

20 The NIH's Protecting Human Subject Research Participants online course is widely recognised as one of the top training materials for researchers working with human subjects.

5. GRADUATE CHARACTERISTICS AND TRANSITION TO UNIVERSITY

This section begins with an overview of some of the key demographic and socio-economic characteristics of the sample and identifies some of the main differences between graduates of the University of Fort Hare (UFH) and Rhodes University (RU). Following this, some of the important aspects of the transition from school to university are presented.

Demographic and socio-economic characteristics

Since the tracer study has a regional focus, perhaps one of the key differences of interest (e.g. particularly for provincial human resource development (HRD) councils) between graduates of the two universities is that graduates from Rhodes have come, for the most part, from outside of the Eastern Cape (e.g. KwaZulu-Natal, Gauteng, the Western Cape and outside of South Africa) (see Table 7). On the other hand, and in line with what Cosser, Du Toit and Visser (2004) describe as the 'regional pull' of historically disadvantaged institutions, Fort Hare graduates largely come from within the province (about 73%). Given the historical importance of the institution on the continent,[21] it is also not surprising that a large percentage do also come from outside of South Africa (13%) and that the vast majority of these graduates are from Zimbabwe (as well as from several other neighbouring countries).

Within the context of the historical organisation of higher education institutions in South Africa, RU is identified as a historically white university (HWU) and the UFH as a historically black university (HBU).[22] It is therefore not surprising that the racial composition[23] of graduates from the two universities is very different (Figure 1). Most graduates from RU (57%) are still 'white', while only 35% are 'black African'. The vast majority (93%) of graduates from UFH, however, are classified as black South Africans and fewer than 5% are white. While there has been some transformation, particularly at RU over the past 20 years, it is clear from the figures in the table that the racial compositions of the two universities still, to some extent, reflect their historical positions in South Africa's higher education system.

Further evidence of the differences in the characteristics of graduates of the two universities can be seen in parental levels of education (Table 8). Among the Fort Hare sample, about 17% report that their parents have no formal schooling. This is far higher than the 2% of Rhodes graduates who indicated that their parents have no schooling. At the same time, the vast majority of Fort Hare

21 Notable alumni include: Nelson Mandela, Julius Nyerere, Kenneth Kaunda, Govan Mbeki, Oliver Tambo, Desmond Tutu, Seretse Khama, Robert Sobukwe and Robert Mugabe.

22 These terms do not denote any official way of classifying universities, but, given the legacy of the historical differentiation of higher education institutions in South Africa, as recognised in the White Paper for Post-school Education and Training (PSET), many studies continue to emphasise the 'historical' status of institutions in order to keep the research grounded in the realities of the higher education context.

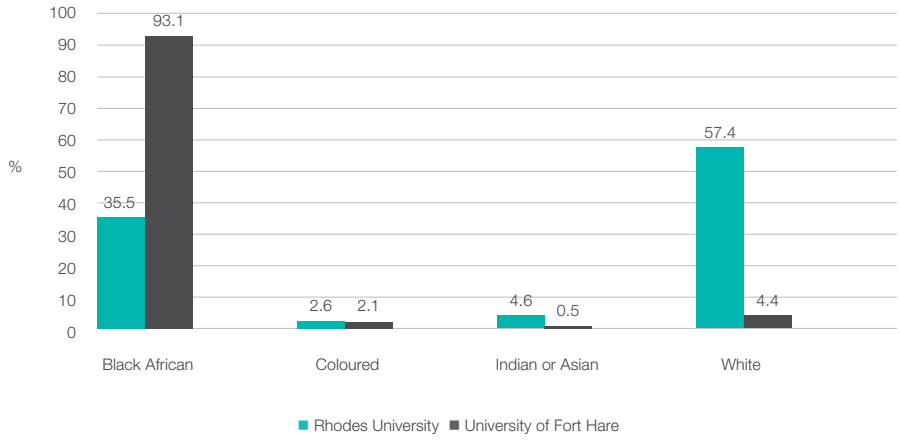
23 The population group classifications used throughout the report are the same as those employed by Statistics South Africa in its household surveys and censuses and are generally well accepted in South Africa. For example, 'black African' is the term used to describe black South Africans, 'coloured' refers to individuals of mixed-race origin, 'Indian/Asian' refers to people of Indian and Asian descent, and 'white' refers to those of European origin.

Table 7: Province of schooling, by university

	Rhodes University	University of Fort Hare	Total
Eastern Cape	26.68 (2.14)	73.39 (1.69)	55.57 (1.47)
Free State	1.10 (0.47)	0.56 (0.28)	0.77 (0.25)
Gauteng	22.04 (1.96)	1.05 (0.37)	9.17 (0.85)
KwaZulu-Natal	19.37 (1.84)	2.76 (0.58)	9.18 (0.83)
Limpopo	1.98 (0.73)	1.11 (0.44)	1.45 (0.39)
Mpumalanga	1.89 (0.63)	6.88 (1.11)	4.95 (0.73)
Northern Cape	0.61 (0.35)	0.50 (0.26)	0.54 (0.21)
North West	2.46 (0.74)	0.16 (0.16)	1.05 (0.30)
Western Cape	9.27 (1.32)	0.67 (0.30)	3.99 (0.56)
Outside of South Africa	14.61 (1.72)	12.53 (1.21)	13.34 (1.00)
N	**2 018**	**2 909**	**4 927**
Total	**100.00**	**100.00**	**100.00**

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

Figure 1: Population group characteristics of the sample, by university



Notes: The data are weighted.

graduates are likely to be the first person in their family to attend/complete university. Evidence in support of this comes from the finding that only 8% and 9%, respectively, reported that their father or mother completed a university degree. Rhodes graduates are far more likely (46% and 35%, respectively) to report that their father or mother has a university degree. Rhodes graduates are also considerably more likely to report that their parents completed matric and obtained a technikon degree.

Two other important differences between graduates from Rhodes and Fort Hare are in the employment status and earnings of their parents (Tables 9 and 10). Rhodes graduates, on the whole, are considerably and significantly more likely to be employees (in the formal sector), self-employed or employers. In particular, more than a fifth of Rhodes graduates report that their father owns/owned his own company and employs/employed others. Unemployment levels were relatively low among

Table 8: Parent's/guardian's highest level of education

	Rhodes University	University of Fort Hare	Rhodes University	University of Fort Hare
	Father/male guardian		Mother/female guardian	
No formal schooling	2.25 (0.77)	17.44 (1.76)	2.06 (0.69)	17.02 (1.58)
Some primary	2.07 (0.75)	9.47 (1.33)	3.02 (0.90)	12.78 (1.38)
Completed primary	0.63 (0.36)	5.20 (1.00)	1.38 (0.62)	4.52 (0.82)
Some secondary	6.59 (1.28)	15.59 (1.64)	9.06 (1.45)	17.92 (1.55)
Matric/Grade 12	18.07 (1.91)	13.06 (1.48)	22.27 (2.02)	16.24 (1.52)
Technical college	5.57 (1.10)	4.78 (0.96)	4.45 (0.95)	4.58 (0.85)
Technikon certificate or diploma	6.60 (1.19)	7.00 (1.15)	9.82 (1.45)	4.86 (0.85)
University certificate or diploma	6.67 (1.27)	7.53 (1.16)	8.86 (1.40)	8.70 (1.12)
Technikon degree	2.18 (0.75)	1.27 (0.48)	2.61 (0.79)	0.76 (0.34)
University degree	45.54 (2.48)	8.12 (1.18)	34.98 (2.35)	8.95 (1.15)
Don't know	3.82 (1.03)	10.53 (1.39)	1.50 (0.61)	3.67 (0.80)
Total	**100.00**	**100.00**	**100.00**	**100.00**

Notes: The data are weighted. Standard errors are in brackets. Missing values for about 10% of the RU sample and 30% of the UFH sample for father's education. Missing values for about 7% of the RU sample and 15% of the UFH sample for mother's education.

Table 9: Parent's/guardian's employment status

	Rhodes University	University of Fort Hare	Rhodes University	University of Fort Hare
	Father/male guardian		Mother/female guardian	
Employee – formal sector	40.25 (2.53)	30.31 (2.40)	44.26 (2.48)	28.20 (2.02)
Self-employed/own account	14.27 (1.76)	4.48 (1.08)	11.55 (1.57)	5.16 (0.98)
Self-employed/employer	21.14 (2.06)	7.93 (1.32)	7.87 (1.32)	4.34 (0.93)
Assisting small business	0.00 (0.00)	0.00 (0.00)	3.18 (0.89)	0.30 (0.21)
Unemployed – searching	2.19 (0.85)	3.07 (0.88)	2.06 (0.69)	4.79 (0.94)
Unemployed – not searching	0.71 (0.52)	6.90 (1.36)	15.60 (1.87)	14.07 (1.57)
Domestic worker/gardener	0.00 (0.00)	0.26 (0.26)	0.44 (0.31)	3.13 (0.87)
Informal sector	0.22 (0.22)	1.04 (0.53)	0.78 (0.45)	0.82 (0.50)
Subsistence farming	0.32 (0.32)	1.07 (0.53)	0.00 (0.00)	1.51 (0.53)
Retired	15.59 (1.89)	35.85 (2.49)	12.76 (1.70)	33.43 (2.14)
Don't know	5.32 (1.22)	9.08 (1.52)	1.50 (0.61)	4.26 (0.94)
Total	**100.00**	**100.00**	**100.00**	**100.00**

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

Table 10: Parent's/guardian's monthly income

	Rhodes University	University of Fort Hare	Rhodes University	University of Fort Hare
	Father/male guardian		Mother/female guardian	
No income	5.77 (1.39)	13.64 (2.06)	17.61 (2.12)	17.95 (1.89)
R801–R1 600	1.02 (0.56)	13.08 (1.97)	2.72 (0.95)	15.96 (1.82)
R1 601–R3 200	0.92 (0.66)	5.34 (1.27)	1.98 (0.83)	7.01 (1.33)
R3 201–R6 400	0.90 (0.52)	7.26 (1.53)	4.16 (1.08)	8.21 (1.44)
R6 401–R12 800	3.18 (0.93)	7.87 (1.59)	6.81 (1.37)	5.69 (1.13)
R12 801–R25 600	7.75 (1.45)	3.43 (1.09)	14.25 (1.86)	5.14 (1.09)
R25 601–R51 200	15.91 (2.06)	4.89 (1.23)	9.27 (1.61)	1.75 (0.62)
R51 201–R102 400	6.89 (1.42)	0.00 (0.00)	3.19 (0.91)	0.24 (0.24)
R102 401–R204 800	5.07 (1.18)	0.21 (0.21)	1.30 (0.65)	0.40 (0.29)
R204 801 or more	3.79 (1.05)	0.68 (0.41)	0.68 (0.40)	0.00 (0.00)
Don't know	48.55 (2.83)	42.06 (2.88)	37.22 (2.69)	35.28 (2.38)

Notes: The data are weighted. Standard errors are in brackets. Columns do not total 100%.

parents of graduates from both universities, but one slightly surprising finding is that just over a third of the parents (i.e. both mothers and fathers) of the Fort Hare graduates are reported as being retired.

Secondary sources of information on income and earnings are often problematic (as outlined in the limitations of the study), but the data presented in Table 10 do offer a rough measure of the socio-economic differences between graduates from the two universities.[24] The fathers/male guardians of Fort Hare graduates are more than twice as likely to be earning no income (14% as opposed to 6%). At the higher levels of income, both the fathers and mothers of Rhodes graduates are far more likely to be in these earnings brackets than their counterparts from Fort Hare. For example, about 16% of Rhodes respondents reported that their father/male guardian earned between R25 601 and R51 200 per month. The comparable figure among the Fort Hare sample is only 5%.

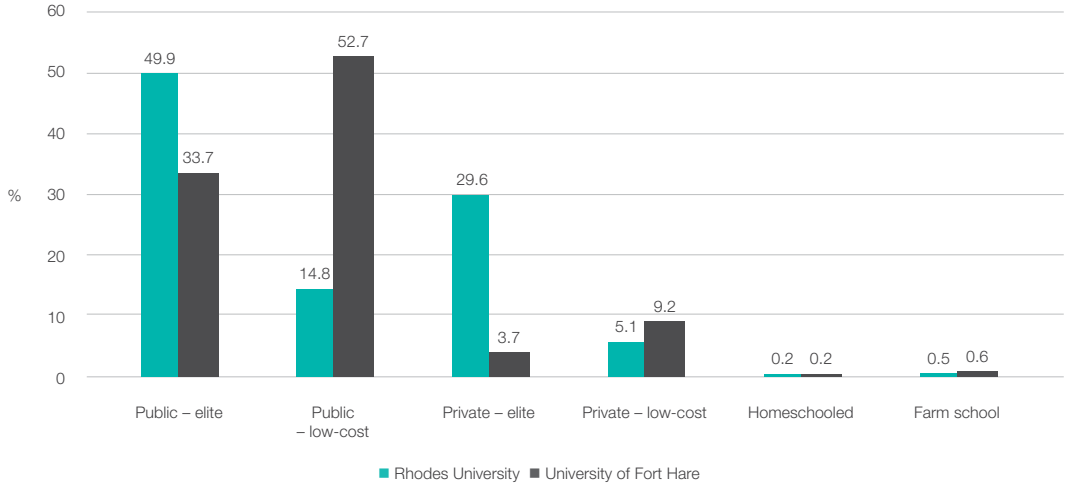
The data presented in this section therefore suggest that the demographic and socio-economic characteristics of graduates from RU and the UFH largely conform to a priori expectations based on the historical trajectories of the two institutions. Fort Hare graduates mostly come from Eastern Cape schools, are predominantly black South Africans, and come from households in which their parents have comparatively lower levels of education, are less likely to be employed and are relatively low-income earners. Rhodes graduates, on the other hand, come from schools throughout the country, are predominantly white, and come from households with a far higher socio-economic status.

Schooling and the transition to university

Having established the demographic and socio-economic differences between graduates from RU and the UFH, it is not surprising that the schooling histories of the two sets of graduates are also distinct (Figure 2). About half of the Rhodes cohort attended elite public schools (compared with about a third of Fort Hare graduates). These are often

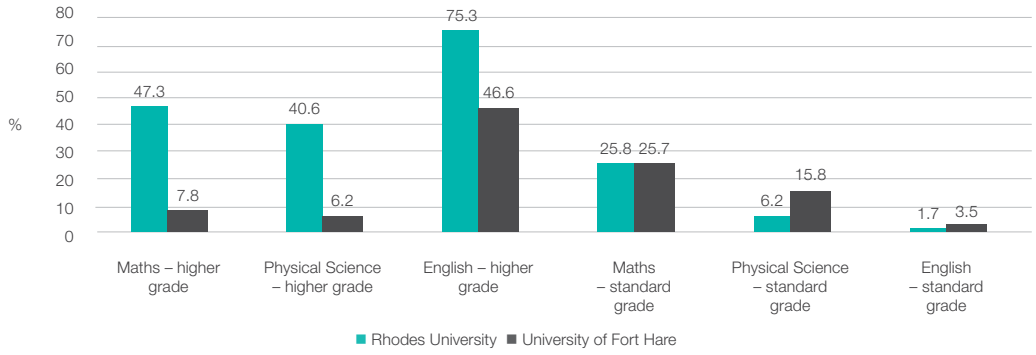
24 Information on parental levels of income was captured in brackets (i.e. not as point estimates), given the uncertainty of respondents about family income and the general reluctance of respondents to provide this information (i.e. in the pilot interviews).

Figure 2: Type of school attended



Notes: The data are weighted.

Figure 3: Matric subjects – SCE



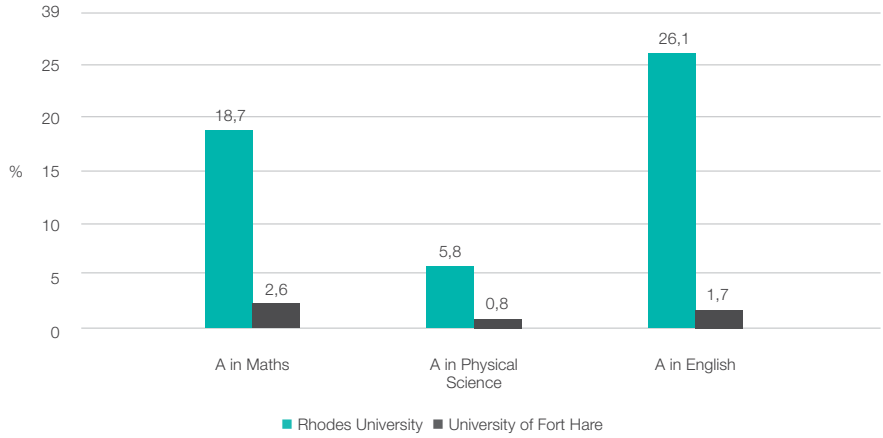
Notes: The data are weighted.

described as former Model C[25] 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 that limit or restrict attendance to learners from the upper-income and wealthiest households in the country. 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.

In terms of self-reported preparations for university during the final year of school, there are also a number of important differences between the Rhodes and Fort Hare cohorts (Figure 3). Rhodes graduates are much more likely to have written Mathematics (47%), Physical Science (41%) and English (75%) at a higher grade than their Forth Hare counterparts. By comparison, only about 8% of Fort Hare graduates

25 Towards the end of the apartheid era (i.e. the late 1980s and early 1990s), the parents of learners who attended white government schools were given the option to convert the governance and funding structures of these schools into a 'semi-private' model (Model C). The term 'former Model C' is now often used to describe these schools (i.e. former public or semi-private government schools that were formerly reserved for white learners). In contemporary South Africa, these schools are no longer 'semi-private', but they are often still associated with good academic results and higher school fees than in other types of public/government schools (since all schools are able to set tuition levels).

Figure 4: Matric achievements in SCE subjects



Notes: The data are weighted. An 'A' refers to a first-class pass on either higher or standard grade.

wrote the Mathematics paper at a higher grade for the Standard Certificate Examination (SCE) (and 6% wrote a Physical Science subject at a higher grade). This finding suggests that not only did the Fort Hare cohort attend less-resourced schools, but also that their preparation for university was likely to be less comprehensive compared with their counterparts from RU.

This difference in schooling outcomes/experiences is again reflected in the percentage of Fort Hare graduates who received an 'A' for their final subject marks in matric (Figure 4). In the two 'gateway' subjects of Mathematics and Physical Science, Rhodes graduates are far more likely to have received a first-class pass (19% and 6%, respectively). Moreover, the substantial difference (26% as against 2%) in the level of distinction in English is particularly surprising given that nearly half of the Fort Hare sample wrote English at a higher grade. One possible explanation for the wider gap in distinctions in language compared with Mathematics and Physical Science may be that English is a second language for the majority of UFH graduates and the first language for most of the Rhodes cohort.

The data presented in this section have highlighted a number of important 'pre-higher education' differences between the Fort Hare and Rhodes cohorts. When comparing outcomes such as degree choices, field of study and employment outcomes, these initial differences between the two groups must be considered. In other words, the data suggest that the experience of preparing for university was remarkably different for Rhodes and Fort Hare graduates. Rhodes graduates were far more likely to come from well-resourced or elite secondary schools, had written Mathematics, Physical Science and English at a higher grade for the SCE, and achieved higher scores in their final-year examinations. Rhodes and Fort Hare graduates therefore entered university with very different observable levels of preparation for university education and the subsequent transition to the labour market.

6. HIGHER EDUCATION

Against the backdrop of different outcomes and experiences in secondary school, this section explores the pathways through higher education for the Rhodes and Fort Hare cohorts. The decisions made in terms of study fields, degree choices and specialisations are particularly relevant to the Department of Higher Education and Training's (DHET) objective of improving the scarce skills base in the country (as outlined in the White Paper for Post-school Education and Training (PSET)) as well as the broader goal of increasing the number of graduates in the Science, Engineering and Technology (SET) disciplines. Graduate tracer studies are particularly well suited to providing this type of information, as they can identify the gap in study preferences or intentions, on the one hand, and actual enrolments and completions, on the other. A key question, therefore, is whether a lower than desirable number of SET graduates, for example, is linked with a lower *intention* to study these subjects or whether there are other factors that impact on the ability of potential SET students to enrol in and complete an SET degree (e.g. low marks, lack of career guidance, poor foundational knowledge).

In terms of degree intentions, the data suggest that, despite lower levels of preparation for university among the Fort Hare graduates (particularly in Mathematics), 30% of graduates from both universities reported that they planned to study a discipline within the broad field of SET (Table 11). At the same time, the Fort Hare cohort was slightly more interested in Commerce and slightly less interested in the Humanities when they were in matric. Interestingly, 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 matric. In other words, Rhodes graduates were only slightly (and not significantly – i.e. confidence intervals overlap at the 95% level of significance) more successful in completing the degree they intended to study while still in school.

Table 11: Intended field of study while still in matric (first 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 degree at university	47.41 (2.37)	40.99 (1.84)	43.46 (1.46)

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

However, these figures mask large differences between fields of study (Table 12). 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 CESMs (except Education), Rhodes graduates were more likely than Fort Hare graduates to complete the degree in which they originally intended to enrol (while in their final year of school). Among the Fort Hare graduates who changed their study category (between matric and university graduation), the

largest percentage switched to the Humanities. For example, among those who intended to study SET at Fort Hare, 27% graduated in a Humanities discipline instead (not shown in table).

Table 12: 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	13.61 13.61	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.

The reasons for changing from the initial intended course of study are also interesting and differ between the two groups (Table 13). The main reason that UFH graduates changed their 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 is 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%).

Table 13: 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 could not 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 100%.

In exploring some of the reasons for not completing an 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 the UFH).

Taken as a whole, these findings would suggest that, to some extent, the 'preference gap' is explained by different factors at the two universities. At Rhodes, the modal reason for not completing an intended degree was related to 'a loss of interest'. At Fort Hare, however, it would seem that poor marks or a lack of places (often related to poor marks) explain more than half of the preference gap in degree completion. The implication is that different strategies would be required to ensure that students complete their intended degrees. Perhaps not surprisingly, given the weaker academic foundation among Fort Hare graduates, an intervention aimed at 'bridging' the content gap in relevant subjects (e.g. Mathematics for those who intend to pursue an SET degree) would seem most logical.

However, a change in degree choice was also associated with a lack of scholarship funding among Fort Hare graduates. The importance of financial support to this group of graduates is not surprising, given the lower socio-economic status identified in the previous section. This is evident again in that the sources of funding for a university education were also different in the two graduate groups (Table 14). Nearly half (46%) of the UFH graduates received funding from the National Student Financial Aid Scheme (NSFAS)[26] compared with only 15% of Rhodes graduates. The modal source of funding for the Rhodes group was their parents or guardian (74%). The UFH cohort was almost twice as likely as the Rhodes graduate group to report that they self-funded their tertiary education (14% as against 8%, respectively). An interesting and somewhat unexpected finding is that

26 These numbers are derived from self-reported information in the study questionnaire.

Table 14: Sources of funding for university studies

	Rhodes University	University of Fort Hare	Total
NSFAS	14.66 (1.78)	45.81 (1.86)	33.80 (1.39)
Parents/guardians	74.41 (2.13)	26.26 (1.63)	44.82 (1.46)
Employer	1.53 (0.58)	0.42 (0.24)	0.85 (0.27)
Bank loan	8.57 (1.31)	2.43 (0.57)	4.79 (0.62)
University bursary/award	13.81 (1.61)	1.73 (0.45)	6.39 (0.70)
Private bursary/award	4.18 (0.97)	1.93 (0.50)	2.80 (0.48)
NRF (National Research Foundation)	2.24 (0.70)	1.09 (0.37)	1.54 (0.35)
Self-funded	7.93 (1.25)	14.25 (1.30)	11.81 (0.94)
Bursary/scholarship from a firm	4.55 (0.95)	5.09 (0.84)	4.88 (0.63)
Bursary/scholarship from a government department	4.81 (1.03)	40.42 (1.86)	26.69 (1.33)

Notes: The data are weighted. Standard errors are in brackets. Columns do not total 100%.

Table 15: Field of study, by university and population group

	Rhodes University				
	Black African	**Coloured**	**Indian or Asian**	**White**	**Total**
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.

40% of Fort Hare graduates indicated that they received a bursary or scholarship from a specific government department.

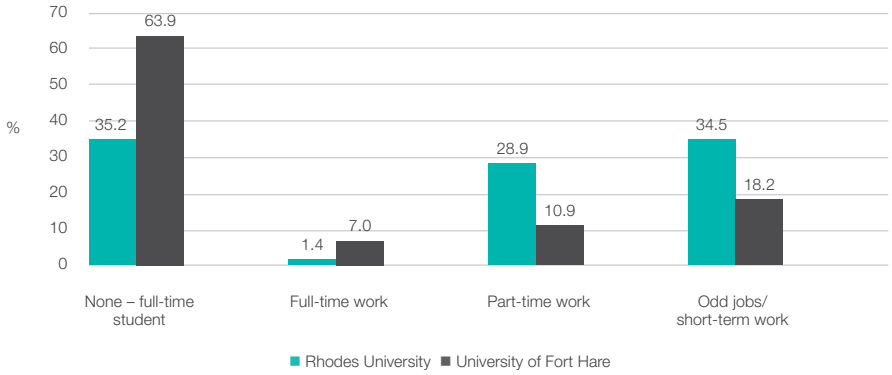
Despite the different demographic and socio-economic compositions of graduates from the two universities, there is very little evidence to support the claim that race is strongly associated with field of study (Table 15). In particular, the suggestion (e.g. Moleke 2005b) that black South Africans, and particularly those who study at historically black universities (HBUs), are more likely to enrol in programmes (such as the Humanities) that have a lower likelihood of employment or less relevance to

Table 16: Type of study while obtaining a degree

	Rhodes University	University of Fort Hare	Total
Full-time	98.61 (0.52)	94.45 (0.87)	96.05 (0.58)
Contact	99.06 (0.44)	96.33 (0.70)	97.40 (0.46)

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

Figure 5: Type of employment while studying



Notes: The data are weighted.

employers does not appear to be the case for Rhodes and Fort Hare graduates.[27] Moreover, black graduates from Fort Hare are not significantly (i.e. confidence intervals do not overlap at the 95% level of confidence) more likely to have completed a degree in the Humanities than black graduates from Rhodes.

Despite the large differences in funding routes between Rhodes and Fort Hare graduates, there are only small differences in the type of study in which graduates from the two universities engaged (Table 16). It might have been expected that Fort Hare graduates were more likely to have balanced work and study or opted for some type of distance learning due to financial pressures. However, both UFH and Rhodes graduates reported that they predominantly studied full-time and as contact students. In other words, despite the fact that UFH students were more likely to be self-funded and/or receive a departmental (government) bursary, they appear to be only slightly less likely to be studying full-time.

When the question about work and study was asked directly, a similar finding was identified (Figure 5). About 7% of the UFH sample reported working full-time while studying, but Fort Hare graduates were somewhat less likely (compared with Rhodes graduates) to report having had part-time work or doing odd jobs while studying. This may be explained, in part, by the far higher rate of NSFAS funding received by UFH graduates. However, the fact that more than 60% of Rhodes graduates (compared with only 29% of UFH graduates) either had part-time or short-term work during their studies could have important implications for work experience, the development of social networks, and a greater preparedness for the world of work more generally.

In terms of observable achievements (i.e. academic performance) at university, Table 17 presents some of the differences reported between the two groups of graduates by field of study. On the whole, the information presented in the table would suggest that Rhodes graduates earned higher average

27 The claim that Humanities graduates are more likely to be unemployed is explored later in the report.

Table 17: Average mark achieved for university qualification, by field of study

	Rhodes University			
	SET	**Business/Commerce**	**Education**	**Humanities**
50–55%	4.20 (2.43)	2.98 (1.71)	0.00 (0.00)	3.75 (1.23)
56–60%	15.93 (3.87)	26.74 (4.55)	36.11 (19.66)	14.47 (2.26)
61–65%	29.07 (4.91)	24.44 (4.75)	6.94 (7.06)	27.41 (2.88)
66–70%	20.81 (4.06)	22.85 (4.20)	22.22 (18.94)	26.57 (2.85)
71–75%	16.05 (3.55)	17.35 (3.74)	0.00 (0.00)	17.41 (2.44)
Above 75%	13.94 (3.54)	5.64 (1.98)	34.72 (19.52)	10.40 (1.97)
N	**415**	**525**	**21**	**1 057**
Total	**100.00**	**100.00**	**100.00**	**100.00**
	University of Fort Hare			
50–55%	5.29 (1.96)	8.85 (2.00)	10.10 (4.49)	4.82 (1.22)
56–60%	10.73 (2.72)	16.10 (2.58)	6.90 (3.96)	11.63 (1.83)
61–65%	33.97 (4.11)	24.51 (3.08)	26.91 (7.04)	22.82 (2.41)
66–70%	29.97 (4.02)	28.28 (3.14)	42.39 (7.64)	40.84 (2.82)
71–75%	13.51 (2.99)	11.45 (2.21)	8.21 (4.14)	15.77 (2.13)
Above 75%	6.52 (2.11)	10.81 (2.19)	5.50 (3.12)	4.11 (1.18)
N	**510**	**737**	**291**	**1 371**
Total	**100.00**	**100.00**	**100.00**	**100.00**

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

marks than their UFH counterparts.[28] Among SET graduates, for example, 14% of Rhodes graduates reported average marks at the level of distinction (above 75%) and a further 16% graduated with an average equivalent to an upper second-class pass (71–75%). Among SET graduates from Fort Hare, only 7% graduated with distinction and 14% with an upper-second pass.

A greater percentage of Commerce graduates from Fort Hare graduated with distinction (11%) compared with Rhodes (only 6%), but a considerably higher percentage from Fort Hare (9%) graduated with only a 50 to 55% pass rate (compared with only 3% from Rhodes). Among Humanities graduates,[29] the Rhodes sample was more than twice as likely to graduate with distinction than the Fort Hare group (10% as against 4%, respectively).

Leading on from the above, Rhodes graduates are much more likely than the Fort Hare graduates to have studied further (Table 18). About 72% of Rhodes graduates from 2010 and 2011 reported having gone on to obtain another qualification (after their bachelors degree) and 27% are currently registered for an additional qualification. Graduates in SET and the Humanities are particularly likely to have obtained another qualification. The UFH cohorts from 2010 and 2011 are far less likely to have obtained an additional qualification (only 44%).

28 Summary statistics are not available, since this information was captured in bracket form – due largely to the time constraints and interviewer/interviewee dynamics associated with online and telephonic interviewing, respectively.

29 No comparisons are made between Education graduates from the two universities, given the very small number of Education graduates from Rhodes.

Table 18: Completion of a further qualification since first degree, by field of study

	Rhodes University				
	SET	**Business/Commerce**	**Education**	**Humanities**	**Total**
Completed	75.60 (4.69)	68.86 (4.78)	26.32 (13.79)	73.76 (2.82)	72.41 (2.18)
Currently registered	40.26 (5.09)	27.24 (4.52)	27.63 (18.35)	23.20 (2.72)	27.29 (2.15)
	University of Fort Hare				
Completed	51.33 (4.31)	52.22 (3.44)	39.12 (7.31)	38.85 (2.67)	44.41 (1.87)
Currently registered	28.60 (3.90)	27.18 (3.06)	23.92 (6.44)	20.10 (2.22)	23.74 (1.61)

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

Among the Fort Hare graduates, those who initially graduated in an SET or Commerce subject were more likely to have completed another qualification since their graduation (roughly half of these two groups).

Some of the reasons for studying further (among respondents who are currently registered for a qualification) offer several insights into the differences between graduates from the two universities (Table 19). The main reason across both universities and fields of study was 'better career opportunities'. However, the desire for a 'higher salary' was a far more common reason provided by UFH graduates, irrespective of field of study (again, not including Education). Rhodes graduates, on the other hand, were considerably more likely to perceive that their desired career requires a further qualification, and this is particularly the case for SET graduates at Rhodes. Perhaps the biggest difference between the two groups of graduates is in the reported inability to find a job. More than a quarter of SET graduates from UFH reported studying further because they couldn't find a job. At the same time, only 2% of Rhodes SET graduates listed this as a reason for further study. Somewhat alarmingly, a considerable percentage of both Commerce and Education graduates (28% and 19%, respectively) who are currently studying also identified difficulty in finding a job as a reason for seeking an additional qualification.

The main conclusion from Tables 18 and 19, however, is that Rhodes graduates are far more likely to have continued their studies after obtaining a bachelor's degree. There could be a number of reasons not measured in the survey directly (e.g. Rhodes graduates may have been better able to afford extending their education) that could account for the far higher rate of further study among the Rhodes cohort. However, the key difference identified in Table 19 is that Rhodes graduates seemed to have embarked on careers that require a further qualification, while many of the UFH graduates continued their studies because they did not have initial success in the labour market upon completing a bachelor's degree. This theme will be explored further in the following section.

Table 19: Reasons for studying further (among the currently enrolled), by field of study

	Rhodes University			
	SET	Business/Commerce	Education	Humanities
Better career opportunities	86.66 (5.14)	87.58 (6.44)	100.00 (0.00)	71.26 (6.06)
Higher salary	39.36 (7.81)	41.27 (9.26)	76.19 (25.67)	33.85 (6.32)
Not ready to work	12.84 (4.98)	0.00 (0.00)	0.00 (0.00)	9.14 (3.90)
Career requires higher degree	52.49 (8.05)	47.02 (9.83)	76.19 (25.67)	34.02 (6.34)
Could not find a job	2.25 (2.23)	0.00 (0.00)	0.00 (0.00)	8.85 (3.78)
	University of Fort Hare			
Better career opportunities	78.16 (6.58)	78.77 (5.43)	92.64 (7.18)	83.94 (4.46)
Higher salary	61.61 (7.76)	54.29 (6.58)	41.57 (15.12)	59.33 (6.04)
Not ready to work	11.35 (4.92)	1.72 (1.71)	0.00 (0.00)	4.41 (2.49)
Career requires higher degree	27.60 (7.20)	31.30 (6.13)	31.59 (14.99)	26.11 (5.35)
Could not find a job	26.74 (7.23)	28.21 (5.97)	19.48 (12.63)	10.27 (3.69)

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

7. TRANSITION TO THE LABOUR MARKET

One of the most important features of a graduate tracer study is the ability to explore the transition from higher education to the labour market. Figure 6 begins by identifying the broad unemployment rates[30] of graduates on 1 March 2014 (the month in which fieldwork began) by university and field of study. The most striking finding from the figure is the difference in unemployment rates between Rhodes University (RU) and University of Fort Hare (UFH) graduates. The unemployment rate of 7% among Rhodes graduates is closely in line with the national average for university graduates (see Pauw, Oosthuizen & Van der Westhuizen 2008; Van der Berg & Van Broekhuizen 2012), while the unemployment rate among UFH graduates is almost three times higher (20%).

By comparison, the broad unemployment rate for all working-age South Africans with a bachelors degree (as the highest level of education) in the second quarter of 2014 (own calculation from the Quarterly Labour Force Survey (QLFS) 2014) was 8.1%.[31] However, if the age range is restricted to a younger cohort[32] for greater comparability with the study respondents, the QLFS suggests that about 20% of South African graduates (between the ages of 24 and 30, inclusive) were broadly unemployed (own calculation from the QLFS 2014, Quarter 2). Notwithstanding the differences in the way that the QLFS and the present study measure unemployment (in terms of fieldwork, data collection and survey instrument), a rough comparison with national statistics on graduate unemployment would suggest that Rhodes graduates fare quite well in the labour market while Fort Hare graduates are fairly typical in terms of their risk of unemployment.

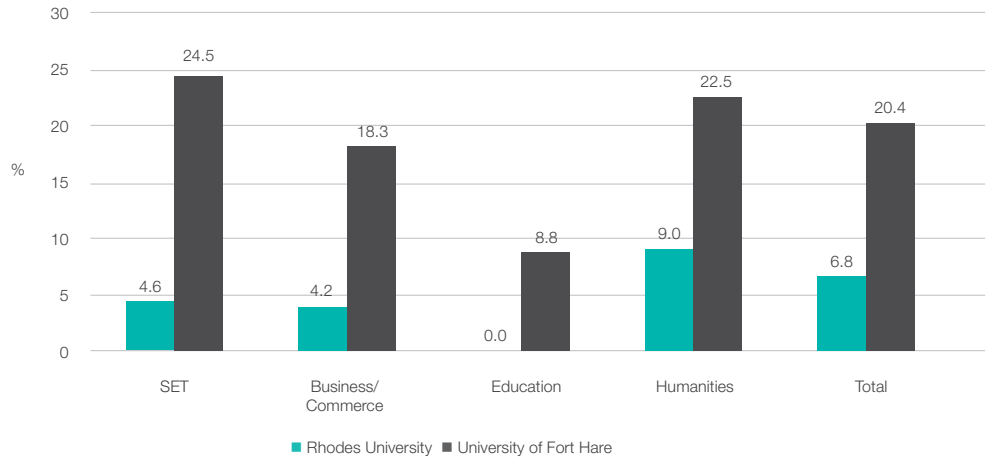
Contrary to some of the expectations described in the literature, the data do not provide any evidence that the risk of unemployment for Humanities graduates is significantly higher than for other fields of study. While Humanities graduates from Rhodes are more than twice as likely to be unemployed as Science, Engineering and Technology (SET) and Business graduates, the difference is not statistically significant (i.e. confidence intervals overlap at the 95% level of confidence). At Fort Hare, SET graduates actually have a higher rate of unemployment, but, again, the difference is not significant. A closer look at the risk of unemployment by field of study suggests that unemployment is higher for SET, Commerce and Humanities graduates from Fort Hare, but is considerably lower among Education graduates. This is likely the result of the practical application of a teaching degree and relatively easy absorption into the teaching profession relative to the other

30 The broad measure of unemployment includes all of the officially unemployed (i.e. those who were actively looking for work) as well as those who wanted work but *did not look for it* during the reference period. Graduates who did not want work and/or who are currently studying are identified as economically inactive.

31 Data from the QLFS also suggest differences in the risk of unemployment among graduates by race. Among university graduates (only those with a bachelors degree), about 10% of black graduates are unemployed compared with only about 4% of white graduates. An important caveat, however, is that comparisons between subgroups of graduates should be made with caution, given the small number of observations (and consequent high standard errors) upon which the descriptive statistics are based. For example, the estimate of a 4% unemployment rate for white graduates in South Africa is based on just 252 observations in the QLFS.

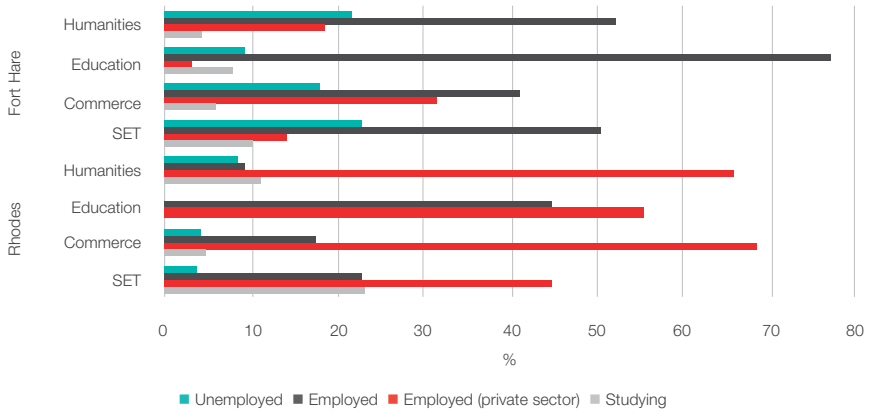
32 The small number of observations and a large standard error are an even greater concern when restricting the sample to graduates between the ages of 24 and 30.

Figure 6: Broad unemployment rates (as of 1 March), by field of study



Notes: The data are weighted.

Figure 7: Current labour market status (as of 1 March), by field of study



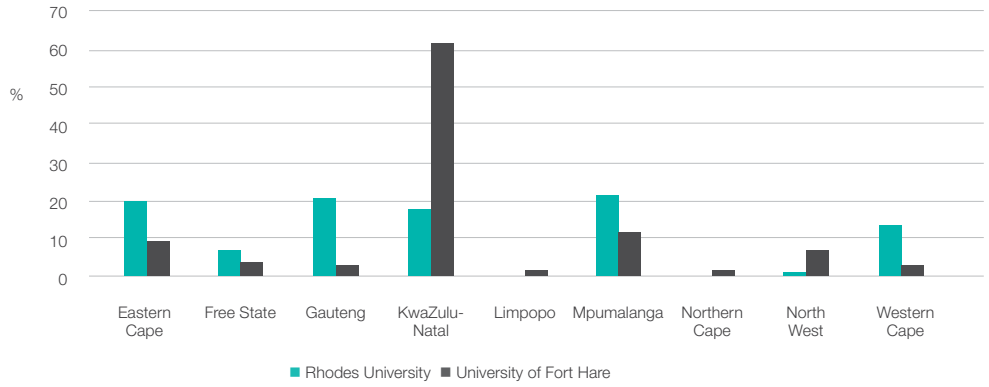
Notes: The data are weighted.

fields of study.[33] However, one limitation of graduate surveys is that they are not able to investigate demand-side factors influencing employment and unemployment, and it seems likely that employer perceptions (or 'signalling') of the quality of graduates from institutions such as Fort Hare may play a role in the higher risk of unemployment among these graduates. In other words, the perceived quality difference in degrees, actual differences in quality, or even discrimination by firms could explain some of the differences in unemployment in Figure 6. While the survey data cannot address these possibilities directly, the alarming difference in employment rates between these two institutions requires further investigation.

To this end, one notable difference in the employment outcomes between Rhodes and Fort Hare graduates is in the sector of employment (Figure 7). The vast majority (62%) of Rhodes graduates work as employees in the private sector compared with only 19% of Fort Hare graduates. The single-largest employer of the Fort Hare cohort is the public sector, which absorbs 52% of all graduates. Not surprisingly, Education graduates are the most likely to report working in the public sector (77%), but roughly half of SET and Humanities graduates also work in this sector.

33 Another possible explanation is that Education graduates might be more likely to be employed because they may be receiving state bursaries under the Funza Lushaka scheme, which incentivises students to complete a teaching qualification and is linked to a work-back requirement (http://www.funzalushaka.doe.gov.za/).

Figure 8: Place of current work/residence



Notes: The data are weighted.

Commerce graduates are the least likely (41%) to work in the public sector among the Fort Hare group, but even these graduates are far more likely to work for the public sector than Rhodes graduates, irrespective of field of study. This finding again points to the possibility that private-sector employers may have negative perceptions of the quality of graduates produced by Fort Hare.

Given the relatively young age of the graduate sample (average age at the time of the survey is 27 years for Rhodes graduates and 30 years for Fort Hare graduates), it is not surprising that self-employment does not feature as a source of income for the vast majority of graduates. Once again, however, there are some differences between the two universities. While only about 3% of Rhodes graduates are self-employed (in the formal sector), this is still a far (and significantly) higher percentage compared with Fort Hare, where about half of a percentage point of graduates are self-employed (not shown in the figure). Given the high rate of unemployment among the UFH sample, it might be expected that informal employment[34] might be a source of income. However, only 1% report either working on an informal basis or being informally self-employed. At the same time, about 2% of Rhodes graduates reported working as an informal employee (not shown in the figure).

Given the regional focus of the study and, more broadly, the interest (e.g. from provincial human resource development (HRD) councils) in the way in which institutions of higher education interact with regional and provincial labour markets, one of the aims was to identify where graduates find employment. In Figure 8, the provinces in which graduates currently work or study are described. Surprisingly, a greater percentage of Rhodes graduates (20%) have remained in the Eastern Cape after completing their first degree (compared with only 9% of Fort Hare graduates). This is somewhat surprising given the findings from Table 7, which showed that the vast majority of Rhodes graduates attended school in another province (while roughly three-quarters of Fort Hare graduates attended Eastern Cape schools).

One possibility, of course, is that the 27% of Rhodes graduates who are currently studying are enrolled at Rhodes University (RU) or another Eastern Cape institution. Perhaps even more surprising, then, is the very small percentage of Fort Hare graduates who have remained in the province and the very large percentage who now live in KwaZulu-Natal. Only about 5% of Fort Hare graduates now study or work in either Gauteng or the Western Cape. Among Rhodes graduates, roughly a third live in one of these two provinces,

34 Given the time constraints during the telephonic interviews, only a very brief definition of 'informal' was given to respondents. 'Informal employment' was defined as working without a written contract and 'informal self-employment' was described as the operation of an unregistered enterprise.

Table 20: Means of finding employment (among employees – i.e. not the self-employed), by field of study

	Rhodes University				
	SET	Business/ Commerce	Education	Humanities	Total
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 100%.

while the remainder are largely concentrated in KwaZulu-Natal and Mpumalanga.[35]

Among the graduates who are employed (excluding the self-employed), there are some important differences in job search strategies between the two groups of graduates (Table 20). The single-most common means of finding their current employment among the Rhodes graduates was through personal contacts or networks (30%). Fort Hare graduates, on the other hand, relied to a greater extent (36%) on newspaper advertisements than on any other specific search strategy. This finding speaks volumes about the nature of links to the labour market and about the perpetuation of past sources of inequality in access to education and employment. Somewhat encouragingly, employment linked to bursaries (13%) and the Department of Labour (9%) were also successful search strategies for Fort Hare graduates.

In terms of the type or quality of employment, Table 21 suggests that, in addition to being less likely to be unemployed, Rhodes graduates are also more likely to have permanent employment (72%) compared with their Fort Hare counterparts (66%), even though Fort Hare graduates are more likely to work in the public sector (where employment tenure is often more secure). Rhodes graduates actually appear to be more likely to be in casual employment relative to Fort Hare graduates (5% as against 3%, respectively). It is also interesting to note that the

35 The finding that 21% of Rhodes graduates now live in Mpumalanga is surprising, given that there are no major urban areas in this province and because only 2% reported attending school in Mpumalanga.

Table 21: Type of employment contract (among employees – i.e. not the self-employed), by field of study

	Rhodes University				
	SET	**Business/Commerce**	**Education**	**Humanities**	**Total**
Permanent employment	68.47 (5.65)	77.38 (4.45)	100.00 (0.00)	69.55 (3.33)	71.92 (2.40)
Fixed-term contract	25.23 (5.17)	19.94 (4.18)	0.00 (0.00)	24.19 (3.11)	22.89 (2.22)
Casual work	6.30 (3.23)	2.68 (1.95)	0.00 (0.00)	6.26 (1.75)	5.18 (1.22)
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
	University of Fort Hare				
Permanent employment	71.06 (4.82)	48.68 (3.95)	86.09 (5.86)	68.17 (3.04)	65.65 (2.09)
Fixed-term contract	27.91 (4.77)	48.14 (3.95)	13.91 (5.86)	27.66 (2.92)	31.44 (2.04)
Casual work	1.03 (1.02)	3.17 (1.40)	0.00 (0.00)	4.18 (1.29)	2.91 (0.72)
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

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

employment characteristics of Humanities graduates are very similar. For example, 70% of Rhodes Humanities graduates are in permanent employment as are 68% of UFH graduates.

The information presented in the previous tables, while useful, pertains only to the current employment situation (as of 1 March 2014) of respondents and therefore does not consider the employment history of graduates. The employment situation described in Figure 7, for example, only provides a snapshot of each respondent's labour market or further education pathway and is therefore capturing a state that could be short-term in nature. The data presented in Table 22 attempt to fill this gap by presenting information on what graduates reported doing mostly between graduating[36] and their main activity as of 1 March 2014.

As the table suggests, experiences in the labour market and in education in the time between graduation and the survey (three or four years depending on whether respondents were from the 2010 or 2011 cohort) were markedly different for Rhodes and Fort Hare graduates. As with current labour market status (Figure 7), Fort Hare graduates were far more likely to be unemployed (18% compared with 10% of Rhodes graduates). Moreover, the average reported time spent looking for current employment (for those who were employed on 1 March 2014) was almost three months longer for Fort Hare graduates (3.6 months as opposed to 6.5 months – not shown in the table). Among the employed over this period, the same pattern in terms of the distribution of the employed in the private and public sectors is evident. In other words, over half of Rhodes graduates have been employed mostly in the private sector since graduation and the single-largest group of Fort Hare graduates (40%) has been working in the public sector.

In addition to identifying the risk of unemployment and the probability of finding a job, tracer studies can also be used to compare conditions of employment, job quality, perceived relevance and job satisfaction. The results presented in the remainder of this section suggest that not only are Rhodes graduates more likely to find employment (relative to UFH graduates), but that they also enjoy a number of other advantages in the labour market. Perhaps first and foremost, Rhodes graduates, on the whole, earn more than Fort Hare graduates (Figure 9). The cumulative distribution functions

36 So, for example, the time period being described here is between April 2010 and March 2014 for all graduates who received their bachelors degree in 2010 (irrespective of whether they attended their graduation ceremony). For the 2011 graduating group, the reference period is between April 2011 and March 2014.

Table 22: Employment status between graduation and current employment (as of 1 March), by field of study

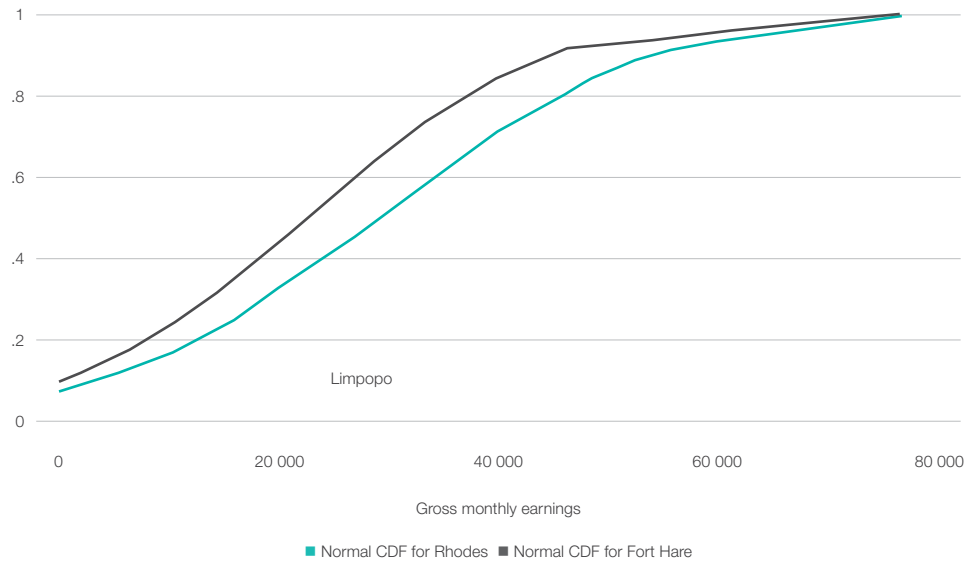
	Rhodes University				
	SET	Business/ Commerce	Education	Humanities	Total
Studying and not working	13.52 (4.27)	10.76 (3.37)	7.46 (7.62)	11.75 (2.30)	11.74 (1.73)
Studying and working	6.15 (2.69)	7.17 (2.60)	0.00 (0.00)	9.73 (2.12)	8.26 (1.43)
Employed – private sector	44.78 (6.12)	53.11 (5.28)	79.10 (13.01)	55.30 (3.55)	53.03 (2.65)
Self-employed – private sector	2.44 (1.71)	0.91 (0.91)	0.00 (0.00)	2.56 (1.13)	2.04 (0.72)
Employed – public sector	26.25 (5.59)	12.02 (3.56)	7.46 (7.62)	7.54 (1.90)	12.24 (1.79)
Informal sector	0.00 (0.00)	1.66 (1.17)	0.00 (0.00)	0.53 (0.53)	0.75 (0.43)
Unemployed	6.86 (3.00)	11.73 (3.74)	5.97 (6.18)	10.98 (2.22)	10.40 (1.67)
Inactive	0.00 (0.00)	2.64 (1.57)	0.00 (0.00)	1.52 (0.87)	1.55 (0.64)
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
	University of Fort Hare				
Studying and not working	15.28 (3.77)	14.88 (2.78)	7.46 (4.27)	16.39 (2.46)	14.80 (1.57)
Studying and working	4.37 (2.15)	8.14 (2.16)	5.41 (3.82)	6.07 (1.52)	6.25 (1.06)
Employed – private sector	15.50 (3.82)	21.87 (3.20)	19.52 (6.46)	15.79 (2.40)	17.73 (1.69)
Self-employed – private sector	1.20 (1.19)	2.10 (1.05)	0.00 (0.00)	1.49 (0.88)	1.43 (0.53)
Employed – public sector	48.03 (5.21)	26.92 (3.59)	53.32 (8.10)	40.16 (3.15)	39.55 (2.17)
Informal sector	0.98 (0.98)	0.61 (0.61)	2.05 (2.03)	1.21 (0.70)	1.12 (0.46)
Unemployed	12.67 (3.44)	24.24 (3.39)	12.25 (5.38)	18.13 (2.46)	18.14 (1.67)
Inactive	1.97 (1.38)	1.23 (0.86)	0.00 (0.00)	0.75 (0.53)	0.99 (0.40)
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

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

plotted in Figure 9 show that earnings are unambiguously higher across the distribution of income (the plotted lines for Rhodes and Fort Hare do not cross at any point).

In terms of hours worked, Table 23 shows that, across the four broad fields of study, the mean weekly hours in employment of Rhodes graduates are slightly higher, which might suggest that Rhodes graduates are more likely to be employed on a full-time basis. The more interesting comparison from the table is in the size of the earnings differential between the two sets of graduates. Mean monthly (gross) earnings among Rhodes graduates is R29 348 and this is significantly (i.e. confidence intervals do not overlap at the 95% level of confidence) higher than the mean of R22 764 for the UFH sample. Moreover, average reported monthly earnings for Rhodes graduates are significantly higher across all four fields of study. The ratio earnings between Fort Hare graduates and Rhodes graduates are fairly similar across the four CESMs. For example, Fort Hare graduates earn roughly three-quarters as much as Rhodes graduates in SET and Commerce. Among Education and Humanities graduates, Fort Hare graduates earn just over 80% of Rhodes graduates' salaries. If earnings are calculated at the median

Figure 9: Cumulative distribution function (CDF) of monthly earnings, by field of study



Notes: The data are weighted.

instead, the earnings differential narrows somewhat, although Rhodes graduates still earn more in three out of the four fields of study. The only exception is the Humanities, where monthly median earnings are the same for Rhodes and Fort Hare graduates.

Another measure of employment outcomes is the perceived relevance of work compared with the qualification received. If graduates who earned a degree within the field of SET are not working in this field, this might be an indication of a mismatch between training and the labour market. Even worse, it may be an indication of inefficiency in the transfer of scarce skills to the labour market. The data presented in Table 24 provide some indication that graduates from both universities perceive themselves to be appropriately placed in the labour market. About 79% of employed Rhodes graduates and 73% of employed UFH graduates identify their current work as appropriate for their level of education. UFH graduates seem to have a perception of the underutilisation of their skills, particularly in Business/Commerce, but three-quarters of employed SET graduates believe that their employment is matched to their level of education. On the whole, there is no significant difference between the perceptions of UFH and Rhodes graduates with regard to whether their current work is appropriate for their qualification.

Even more encouragingly, employed UFH graduates are slightly (but not significantly) more likely (82%) to report that their current work is relevant to their qualification. Education and SET graduates in particular perceive themselves to be working in an environment that is relevant to what they studied. Not surprisingly, Education graduates from both universities are the most likely to be working in the 'correct field'. Among employed UFH graduates, Business/Commerce graduates are the least likely to report working in the relevant field, but, even among this group, three-quarters responded positively to the relevance of their work.

A final consideration of the quality or relevance of employment among graduates can be seen in reported satisfaction with various aspects of their work (Table 25). On the whole, Rhodes graduates report a higher level of satisfaction with all aspects of their current work (with the exception of 'opportunity to use knowledge') compared with Fort Hare graduates. In particular, Fort Hare graduates are considerably less satisfied in the areas of working conditions, job security and income. One interesting difference between graduates from the two universities is that levels of satisfaction are generally higher among Business/Commerce graduates at Rhodes, but, at Fort Hare, Education graduates tend to have the highest satisfaction levels.

Table 23: Average weekly hours and gross monthly income (in rands), by field of study[37]

	Rhodes University				
	SET	**Business/ Commerce**	**Education**	**Humanities**	**Total**
Mean hours worked per week	40.17 (1.40)	43.29 (1.10)	44.37 (1.82)	42.58 (0.85)	42.34 (0.60)
Gross mean monthly income	31 248.28 (2 576.29)	32 666.71 (2 206.02)	26 549.21 (3 837.83)	26 813.21 (1 353.23)	29 348.48 (1 067.79)
Gross median monthly income	19 000.00	20 500.00	17 197.50	15 000.00	16 480.00
	University of Fort Hare				
Mean hours worked per week	39.24 (0.58)	39.44 (0.57)	37.22 (1.35)	39.97 (0.37)	39.39 (0.29)
Gross mean monthly income	23 607.52 (1 658.79)	24 502.03 (1 698.48)	21 430.57 (1 921.99)	21 883.87 (1 181.40)	22 764.57 (784.60)
Gross median monthly income	16 000.00	12 190.00	16 800.00	15 000.00	15 000.00
Ratio of gross mean monthly income (UFH: Rhodes)	**0.76**	**0.75**	**0.81**	**0.82**	**0.78**

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

Table 24: Perceived relevance of current work, by field of study

	Rhodes University				
	SET	**Business/ Commerce**	**Education**	**Humanities**	**Total**
Appropriate to level of education	81.23 (4.42)	81.13 (4.14)	60.53 (18.99)	77.11 (3.00)	78.83 (2.13)
Relevant to qualification	79.78 (4.77)	80.78 (4.14)	94.74 (5.40)	75.63 (3.06)	78.09 (2.17)
	University of Fort Hare				
Appropriate to level of education	75.46 (4.47)	64.93 (3.76)	92.54 (4.27)	72.12 (2.85)	73.09 (1.91)
Relevant to qualification	84.87 (3.74)	74.88 (3.35)	91.40 (4.82)	83.66 (2.34)	82.46 (1.63)

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

Finally, among the graduates who are not currently working, there are also some notable differences between the two universities (Table 26). Relative to the Fort Hare cohort, Rhodes graduates are more than twice as likely to be studying (50% as against 19%), more than six times as likely to report not needing to work (12% as against 2%), and about half as likely to be searching for work (37% as against 77%). Interestingly, neither set of graduates reports being discouraged work-seekers; in other words, very few of the graduates have given up looking for a job. Taken as a whole, the results in the table paint a picture of two very different experiences of unemployment or labour market inactivity between the two groups of graduates.

37 Monthly income was provided as a point estimate by respondents. For those who were not comfortable providing a rand estimate for their monthly earnings, a series of income categories was provided as an alternative. Where respondents chose this option instead, the midpoints of these income bands were used to proxy for earnings. Of all respondents who reported some form of employment, 90% provided information on their earnings either in point estimate form or by indicating a relevant income band.

Table 25: Satisfaction with current work, by field of study

	Rhodes University				
	SET	Business/Commerce	Education	Humanities	Total
Nature of work	89.11 (3.67)	90.44 (3.18)	78.95 (18.05)	86.07 (2.49)	87.81 (1.73)
Working conditions	86.16 (4.22)	96.85 (1.57)	39.47 (18.99)	82.93 (2.71)	87.04 (1.73)
Job security	74.93 (5.33)	89.65 (3.44)	57.89 (20.41)	75.85 (3.08)	79.39 (2.16)
Opportunity to use knowledge	81.36 (4.39)	82.55 (3.97)	100.00 (0.00)	75.50 (3.10)	78.92 (2.14)
Income	59.14 (5.93)	66.47 (4.91)	11.84 (8.72)	53.90 (3.58)	57.95 (2.61)
Opportunity to learn	87.68 (3.81)	88.81 (3.51)	73.68 (18.20)	84.05 (2.63)	85.97 (1.85)
	University of Fort Hare				
Nature of work	78.81 (4.24)	74.83 (3.41)	84.09 (6.08)	76.33 (2.71)	77.24 (1.83)
Working conditions	70.34 (4.75)	75.91 (3.36)	76.10 (7.10)	70.28 (2.92)	72.42 (1.97)
Job security	72.87 (4.68)	64.56 (3.75)	88.00 (5.28)	74.01 (2.81)	73.00 (1.92)
Opportunity to use knowledge	79.61 (4.21)	80.12 (3.14)	87.29 (5.07)	79.47 (2.60)	80.58 (1.72)
Income	45.98 (5.29)	41.05 (3.84)	43.40 (8.05)	37.81 (3.14)	40.57 (2.17)
Opportunity to learn	74.63 (4.62)	75.43 (3.42)	88.47 (5.00)	75.01 (2.79)	76.03 (1.85)

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

Table 26: Current labour market status among those who are not working, by field of study

	Rhodes University				
	SET	Business/Commerce	Education	Humanities	Total
Searching for work	23.26 (9.22)	34.44 (19.96)	0.00 (0.00)	43.93 (7.96)	36.55 (6.03)
Discouraged searcher	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	2.60 (2.56)	1.49 (1.48)
Not needing to work	3.93 (3.87)	20.27 (17.80)	0.00 (0.00)	15.02 (5.67)	12.42 (4.25)
Studying	72.81 (9.64)	45.29 (20.70)	0.00 (0.00)	38.45 (7.80)	49.54 (6.25)
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
	University of Fort Hare				
Searching for work	65.43 (7.58)	85.77 (5.38)	66.14 (19.41)	79.71 (4.39)	77.24 (3.22)
Discouraged searcher	4.64 (3.21)	2.46 (2.43)	0.00 (0.00)	1.18 (1.18)	2.18 (1.08)
Not needing to work	2.32 (2.30)	2.33 (2.30)	0.00 (0.00)	1.20 (1.20)	1.65 (0.95)
Studying	27.61 (7.17)	9.44 (4.49)	33.86 (19.41)	17.90 (4.19)	18.93 (3.03)
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

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

8. CONCLUSIONS

An analysis of the data collected from two recent cohorts of graduates from the two traditional universities based in the Eastern Cape has revealed a number of important findings related to post-school pathways between education and the labour market in South Africa. First and foremost, the findings have underscored the vast differences that still exist due to the historical legacies of the higher education system in South Africa. Over and above the differences in racial composition between the two universities, graduates from Fort Hare are far more likely to have come from poorer schools within the province, to have achieved lower academic marks in school, and to have come from poorer households. They are also more likely to be the first members of their family to attend university.

Despite these differences, many of the study intentions of Rhodes and Fort Hare graduates were similar. In particular, the percentage of graduates who reported a desire to pursue a degree in Science, Engineering and Technology (SET) at university were almost identical across the two institutions. However, the likelihood of converting these intentions into outcomes differs significantly. Across all fields of study, Rhodes graduates were more likely to have successfully obtained the degree that they intended to pursue. In turn, the difference in the 'preference or ambition gap' (see Cosser (2003)) between the two cohorts of graduates appears to be related to schooling and socio-economic backgrounds. Fort Hare graduates reported that the main reasons for not obtaining their first-choice degree were related largely to insufficient academic performance (i.e. low matric marks) and a lack of scholarship funding.

It is in the transition from university to the labour market where the largest differences between Rhodes and Fort Hare graduates are found. Most notably, the fact that Fort Hare graduates are three times more likely to be unemployed is an alarming finding. However, there is fairly limited evidence that the higher risk of unemployment among Fort Hare graduates is linked with the study of more general subjects within the Humanities. Among the Fort Hare cohort, Humanities graduates were no more likely to be unemployed than graduates in SET or Commerce subjects. As identified earlier in the report, the possibility remains that Fort Hare graduates have weaker social networks (particularly among private-sector firms) and that employer perceptions of the quality of Fort Hare graduates are partly responsible for the relatively high rate of unemployment among the Fort Hare sample.

Even among the employed graduates from the two universities, there are a number of important differences. Rhodes graduates earn significantly more than their Fort Hare counterparts and report higher levels of job satisfaction with almost all aspects of their employment. Perhaps the two largest differences in the experiences of the employed, however, are the means of finding their current job and the sector in which they are employed. It is telling that almost half of all Rhodes graduates found their current job through some type of social network (e.g. friends, relatives, social media, etc.), while Fort Hare graduates were far more likely to use conventional and more formal search strategies (e.g. newspaper advertisements). This speaks volumes about the nature of links to the labour market and about the perpetuation of past sources of inequality in access to education and

employment. Moreover, the fact that there is such a stark divide between public- and private-sector employment among the two graduate cohorts suggests that historically shaped social networks continue to play a key role in employment outcomes.

Policy implications

The policy implications emanating from the graduate survey are relevant for a number of different sectors. Firstly, the university sector, and the participating universities in particular, can draw a number of lessons from the study. Secondly, the findings can inform directly the Department of Higher Education and Training's (DHET) aim of building an expanded, effective and integrated post-school system (as articulated in the White Paper for Post-school Education and Training (PSET)). Thirdly, institutions linked with skills planning (including the DHET, the Sector Education and Training Authorities (SETAs), and the human resource development (HRD) councils) can draw on graduate tracer studies, such as the one described in this report, in order to monitor skills development and identify relevant indicators for the creation of skills needed by the economy. The implications for each of these sectors are discussed in turn in this final section.

The university sector

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 research has been on the relevance of university curricula (and Humanities subjects in particular) to skills needed in the job market. The results presented in this report, while only descriptive, do not support the claim that black students (particularly those who are enrolled in historically disadvantaged institutions) are more likely to enrol in subjects with poorer prospects for immediate employment (Moleke 2005b; Pauw et al. 2008). Rather, one of the implications of the findings is that poor schooling quality and low socio-economic status (and subsequent poor social and professional networks) may be linked with both constrained study choices and poorer labour market outcomes.

While these particular findings need to be tested further (i.e. through careful multivariate analyses), the Eastern Cape study does reinforce the findings from earlier tracer studies regarding the variation in employment outcomes across the university sector. The preliminary descriptive findings presented in this report, for example, would suggest that institution of study is a stronger predictor of the risk of unemployment than field of study. In other words, Humanities graduates were not significantly more likely to be unemployed at either university (relative to Commerce and SET graduates). This simple finding indicates that a focus on curriculum change (while possibly relevant to addressing skills gaps) is not necessarily the required solution to the uneven risk of graduate unemployment per se. This means that the more likely causes of graduate unemployment at institutions such as Fort Hare are the perceived or real differences in the quality of degrees from this institution, the relative lack of academic preparation by Fort Hare graduates, a lack of meaningful social networks in private-sector firms, or even discrimination in hiring practices. Each of these possibilities has different policy implications, but the main message from the Eastern Cape graduate study, in this particular regard, is that Humanities degrees are not necessarily linked with a greater risk of unemployment.

Department of Higher Education and Training

Given the constraints on study trajectories and labour market transitions outlined in this report, it is critical to reflect on the efficiency of the higher education system in South Africa. The key question is how universities (or the higher education system more broadly) can convert potential human resources into the types of high-level and scarce skills that are in demand by the economy. In terms of degree choices and study trajectories, the findings presented in this report also offer insights into the types of interventions that may be required. While the main finding was that Fort Hare graduates were less likely to have completed their first-choice degrees, the reported reasons for this would suggest that poor academic preparation was the single largest obstacle to not pursuing a first-choice degree (at Fort Hare). 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 that are focused specifically on supporting learners in making decisions about further training and study. This suggestion has been made with particular reference to the Further Education and Training (FET) sector, but it seems as though, based on the findings presented in this report, this type of intervention could be relevant to universities and the historically disadvantaged institutions in particular.

To the extent that the lack of preparation for university study (i.e. both in academic terms and in terms of awareness of career options) explains the failure of students to pursue their first-choice qualifications, the White Paper for PSET's recommendation (DHET 2013: 6) that 'all young people in the latter years of schooling (and those in their early years of post-school education) receive appropriate and adequate career guidance and advice' seems to be particularly relevant. Where the gap between academic performance at secondary schools and the requirements for a particular degree cannot be addressed through appropriate guidance programmes or initiatives, the possibility of bridging programmes should be considered. This is a particularly relevant policy implication, given the likely poor schooling backgrounds of many of the graduates from historically disadvantaged universities.

Given that graduate unemployment is far higher among Fort Hare graduates (and, therefore, consistent with the general consensus that unemployment is higher among graduates from historically black universities (HBUs)), a key policy lesson is, therefore, that interventions aimed at improving the employment prospects of graduates from HBUs should be targeted at university students from low-quintile schools. In particular, interventions that focus on job matching (see Altman 2007; Altman & Marock 2011) and career guidance may be required to link successful university graduates with the labour market. The goal of these interventions must be to provide relevant information for groups of young people who have demonstrated clear potential (e.g. in receiving a university degree) but who do not have the relevant information or social networks to be successful in the labour market. The good news is that these particular types of interventions can be targeted to particular institutions and, according to Altman (2007), they are relatively easy to implement.

Skills planning institutions

While the Eastern Cape graduate study did not find any evidence that university curricula are poorly matched to the needs of the labour market (i.e. field of study was not significantly associated with unemployment), there may still be a case to be made for promoting the study of certain subjects. In other words, even though Humanities graduates are not significantly more likely to be unemployed than SET graduates, it might still be desirable, from a policy perspective, to promote SET degrees. This might be the case, for instance, if there is a particular demand for some types of scarce skills that are required for economic growth. There is already an indication that government desires a shift in the balance of enrolments away from Humanities subjects and towards SET disciplines. To this end, graduate tracer studies can provide a number of indicators that can be used to monitor study preferences, successful study choices and labour market transitions.

Many of the skills that are currently in demand in South Africa (i.e. scarce skills) are likely to be acquired through university study. To date, nearly all of the available evidence on the study preferences of university graduates comes from a handful of graduate tracer studies. While administrative data can identify completion rates, only tracer or destination studies can link this information on both study preferences and degree completions with the labour market. The results of the Eastern Cape graduate study, therefore, also highlight a number of ways in which tracer studies can improve the evidence base for improved skills planning.

There have now been two regional tracer studies (i.e. in the Western Cape and the Eastern Cape) in South Africa and each of these studies has built on the Human Sciences Research Council's (HSRC) early work in tracing university graduates into the labour market. As a result, a number of methodological lessons have been learnt and the

need for a comprehensive national graduate tracer study is becoming increasingly clear. Given the large differences between South Africa's universities both in terms of function (i.e. traditional universities compared with comprehensive universities and universities of technology) and history (advantaged as opposed to disadvantaged), the evidence to date would suggest that a national tracer study could help to identify how some of the institutional differences in the higher education system at the national level are linked with the successful provision of skills. One of the conclusions from the Eastern Cape study, and a conclusion supported by the earlier tracer studies, is that the demographic and socio-economic profiles, levels of preparation for tertiary study and success in the labour market after graduation differ significantly by institution.

The recommendation from this conclusion is that there should be a greater focus on 'pre-higher education' factors such as schooling history, socio-economic status and study intentions. One way to improve the collection of this information, together with the implementation of a national graduate tracer study, is to ensure that the available administrative data is used optimally. For example, combining matric data with the Higher Education Management Information System (HEMIS) data would provide the crucial baseline information on how schooling history is related to study choice, university enrolment (and institution type) and, ultimately, graduation. By combining administrative data with a regular and carefully designed tracer study, a wide range of indicators could be monitored and many of these could contribute directly to both the equity and efficiency of higher education's role in creating an inclusive labour market and in equipping graduates with the scarce skills needed by South Africa's economy.

Concluding remarks

University graduates provide a vital source of human resources for the domestic economy. While graduate unemployment is a relatively small problem in relation to the high levels of youth unemployment in South Africa, the fact that some graduates are significantly more likely to be unemployed is a cause for concern. In particular, the risk of unemployment in HBUs such as the University of Fort Hare (where one in five graduates reported being unemployed) is a waste of valuable human resources. This finding suggests that policy interventions should be directed at these particular graduates in order to address issues of both equity and efficiency. More work is required, however, in order to identify the correlates of unemployment *within* historically disadvantaged institutions such as the University of Fort Hare.

To the extent that the skills gap in the broad SET and Commerce sectors is also a concern for policy-makers, the results from the tracer study would suggest that study choices are more constrained for Fort Hare graduates relative to their peers from Rhodes University. In particular, the finding that graduates from Fort Hare were less likely to have graduated in their chosen field implies that career and study trajectories are impeding the supply of potentially scarce skills to the labour market. In order to realise the potential of university graduates to address the skills gap efficiently, more detailed information is needed on the types of barriers that affect intended study trajectories. While the tracer study was able to identify a lack of academic preparation as a key barrier to obtaining a first-choice degree successfully, it would be important to corroborate this finding with administrative data on university applications to specific programmes.

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APPENDIX A

Table A: Key graduate tracer studies from post apartheid South Africa

Study	Sample	Main findings
Cosser, M (2003) Graduate tracer study. In: M Cosser, S McGrath, A Badroodien & B Maja (eds) Technical College Responsiveness: Learner Destinations and Labour Market Environments in South Africa. Cape Town: HSRC Press, pp. 27–56	3 503 graduates of 151 technical colleges who achieved an N2, N3 or National Senior Certificate (NSC) in 1999	• FET training appears to be a stepping stone to other types of training and education; • There is very little uptake in fields of study other than engineering and business studies; • Employment/unemployment outcomes vary considerably by race and gender.
Moleke P (2010) The graduate labour market. In: M Letseka, M Cosser, M Breier & M Visser (eds) Student Retention & Graduate Destination: Higher Education & Labour Market Access & Success. Cape Town: HSRC Press, pp. 87–96	2 672 respondents from South African universities who graduated between 1990 and 1998	• Variables that impacted most on the finding of employment were race, gender, field of study, and institution attended (HBU as opposed to HWU); • Unemployment was found to have both structural and frictional features.
Letseka M, Breier M & Visser M (2010) Poverty, race and student achievement in seven higher education institutions. In: M Letseka, M Cosser, M Breier & M Visser (eds) Student Retention & Graduate Destination: Higher Education & Labour Market Access & Success. Cape Town: HSRC Press, pp. 25–40	Two surveys: The first traced all students from 7 universities who 'dropped out' in 2002 (sent to 20 353; 3 328 responded). The second traced all students who obtained a 3- or 4-year qualification in 2002 (sent to 14 195; 2 163 replied)	• Race continues to be a significant determinant of outcomes such as graduation and employment; • However, there is no apparent earnings differential on the basis of race.
CHEC (2013) Pathways from university to work: A graduate destination survey of the 2010 cohort of graduates from the Western Cape Universities. A Cape Higher Education Consortium (CHEC) Study. Cape Town: Cape Higher Education Consortium	5 560 responses from 2010 graduates of Western Cape universities (online and telephonic)	• 84% of 2010 graduates were employed by 1 September 2012; • Burden of unemployment is largely among African graduates.
CREST (2010) ASSAF tracer study of university graduates in the social sciences, humanities and arts. Centre for Research on Science and Technology (CREST)	Online survey of 12 064 alumni from 18 South African universities	• University education is strongly rewarded in the labour market; • There are very few differences in employment outcomes between humanities graduates and those from other disciplines; • Alignment between tertiary education and the needs of the labour market is generally very good.

APPENDIX B

Table B: Total number of graduates (all degrees) by institution, 2010–2011

Source: http://chet.org.za/data/sahe-open-data

APPENDIX C

To determine the initial sample size, we applied Cochran's formula (Sudgen 2000) for determining the initial sample size, n_0, given by:

$$n_0 = \left(\frac{z_{(\alpha)}}{\frac{2}{E}}\right)\left(\frac{z_{(\alpha)}}{\frac{2}{E}}\right) * p * q$$

where $z_{\alpha/2}$ represents the number of standard deviations relative to the mean of the standard normal curve corresponding to the α level of confidence, E is the acceptable margin of error for the proportion being estimated, and p x q is the estimate of the variance such that q = 1 - p. Once the initial sample size has been determined, the next step is to calculate the final sample size, n_1, using the Cochran correction formula (Sudgen et al. 2000) given by:

$$n_1 \geq \frac{n_0}{1 + \frac{n_0}{N}}$$

where N is the population size to be used.

Otherwise, the initial sample size is appropriate. At a 95% confidence level, α = 0.05, and so $z_{\alpha/2}$ = 1.96. Using a standard deviation of 0.5 and a margin of error of 5%, the initial sample size for each of the two populations is found to be:

$$n_0 = \left(\frac{1.96}{0.05}\right)\left(\frac{1.96}{0.05}\right) * 0.5 * 0.5 = 385$$

We take *p* as the indicator of interest or to be measured. Since the current level of *p* is unknown, the safest course would be always to choose *p* = 0.5, as this will ensure an adequate sample size irrespective of what the actual value of *p* is. This will, however, also result in samples that are larger than needed in the event that the actual value of *p* is very different from 0.50. Thus, the recommended approach is to make the best guess based on available information and lean toward selecting the value of *p* closer to 0.50.

The final sample sizes are thus:

$$n_{(\text{Fort Hare})} = \frac{385}{1 + \frac{385}{2\,909}} = 340$$

$$n_{(\text{Rhodes})} = \frac{385}{1 + \frac{385}{2\,018}} = 323$$

This means at least 340 students and 323 learners from the University of Fort Hare and Rhodes University, respectively, would be appropriate for this study. Thus, in total, the minimum number of learners required for this study is 663. However, as indicated earlier, to improve data credibility, efficiency and reliability, at least 15% will be added.

APPENDIX D

The sample was stratified according to CESM, gender and race.

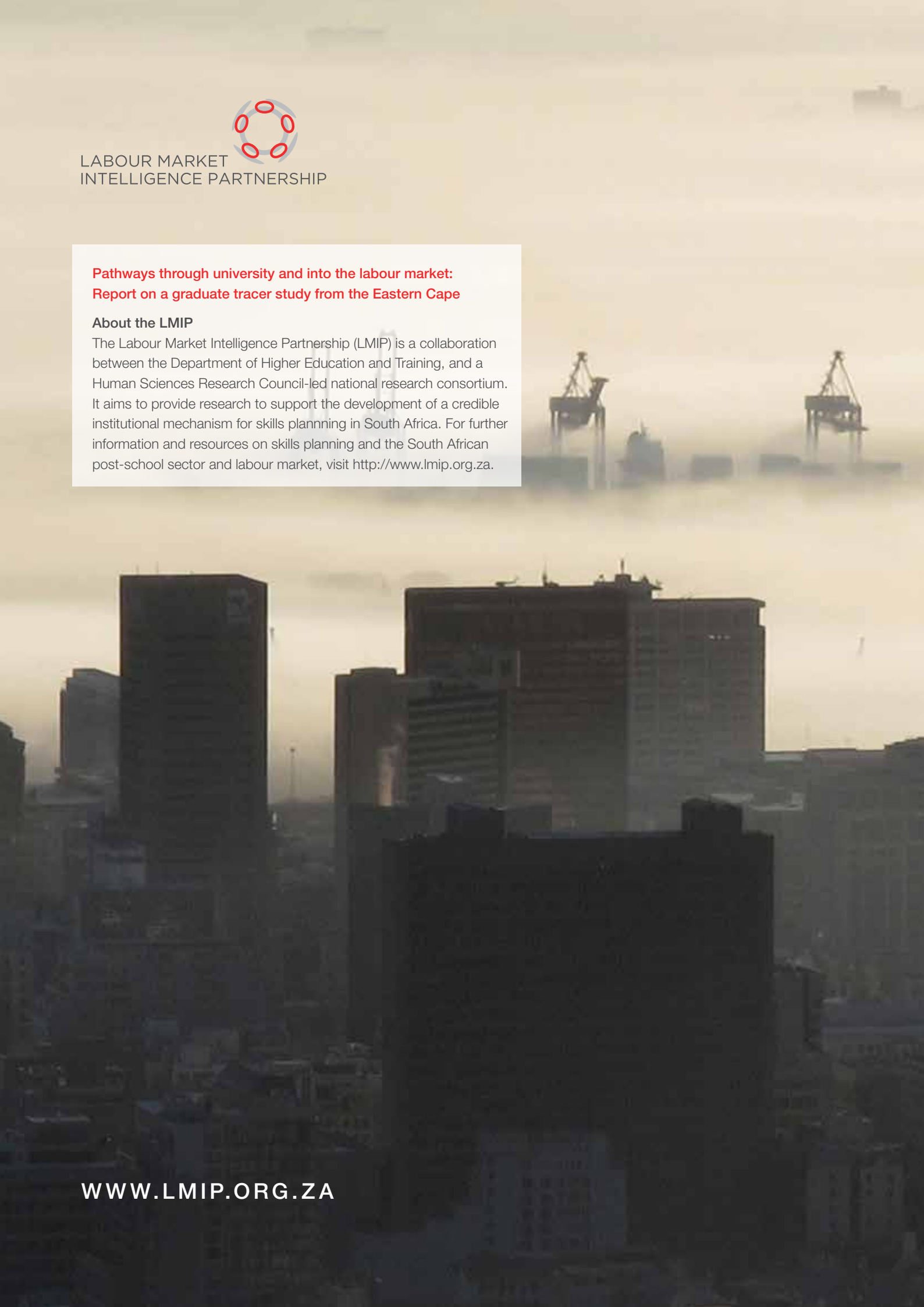
(i) Identifying a set of 'control totals' for the population (defined as the population of students by CESM, gender and race) that the survey ought to match; and
(ii) Calculating weights to adjust the sample totals to the control totals using the formulae below:

$$W(i) = \frac{N^{CESM,\ SEX,\ RACE(i)} / \text{Total population}}{n^{CESM,\ SEX,\ RACE(i)} / \text{Total sample}}$$

where W(i) is the weight for combination CESM, SEX and RACE *Category i*. The CESM, SEX and RACE categories are:

- COMMERCE+MALE+INDIAN
- EDUCATION+MALE+INDIAN
- HUMANITIES+MALE+INDIAN
- SET+MALE+INDIAN
- COMMERCE+FEMALE+INDIAN
- EDUCATION+FEMALE+INDIAN
- HUMANITIES+FEMALE+INDIAN
- SET+FEMALE+INDIAN
- COMMERCE+MALE+AFRICAN
- EDUCATION+MALE+AFRICAN
- HUMANITIES+MALE+AFRICAN
- SE +MALE+AFRICAN
- COMMERCE+FEMALE+AFRICAN
- EDUCATION+FEMALE+AFRICAN
- HUMANITIES+FEMALE+AFRICAN
- SET+FEMALE+AFRICAN
- COMMERCE+MALE+COLOURED
- EDUCATION+MALE+COLOURED
- HUMANITIES+MALE+COLOURED
- SET+MALE+COLOURED
- COMMERCE+FEMALE+COLOURED
- EDUCATION+FEMALE+COLOURED
- HUMANITIES+FEMALE+COLOURED
- SET+FEMALE+COLOURED
- COMMERCE+MALE+WHITE
- EDUCATION+MALE+WHITE
- HUMANITIES+MALE+WHITE
- SET+MALE+WHITE
- COMMERCE+FEMALE+WHITE
- EDUCATION+FEMALE+WHITE
- HUMANITIES+FEMALE+WHITE
- SET+FEMALE+WHITE

The computed weights are then applied to individuals in the sample according to their characteristics.



LABOUR MARKET
INTELLIGENCE PARTNERSHIP

Pathways through university and into the labour market: Report on a graduate tracer study from the Eastern Cape

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 plannning 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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