

Planning for graduate tracer studies in the South African post-schooling sector



**FINDINGS FROM A STUDY OF THE USABILITY OF
GRADUATE DESTINATION SURVEYS FOR THE
ANALYSIS OF LABOUR MARKET OUTCOMES**

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Graduate destination Studies (GDS)



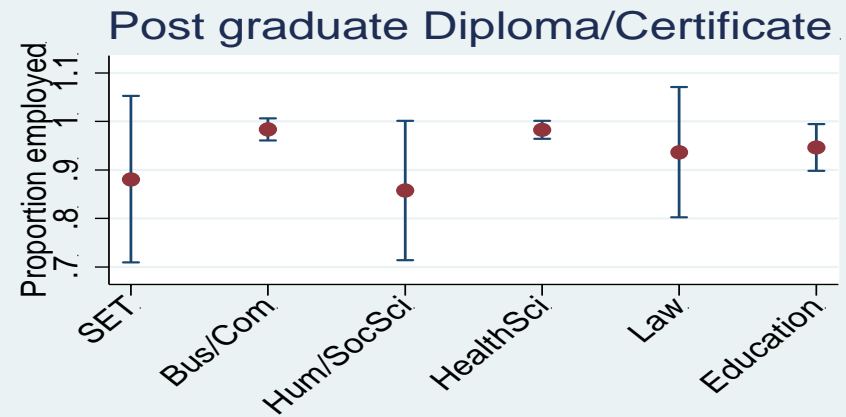
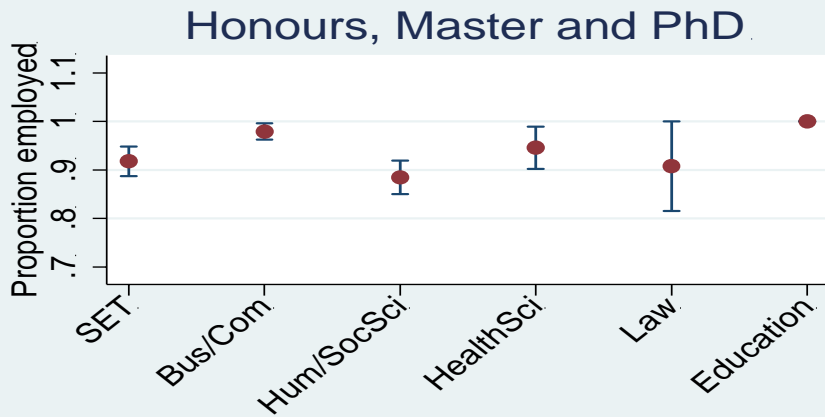
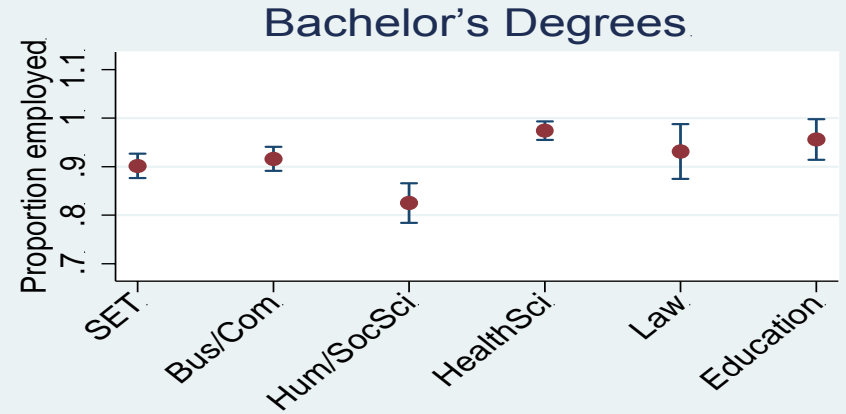
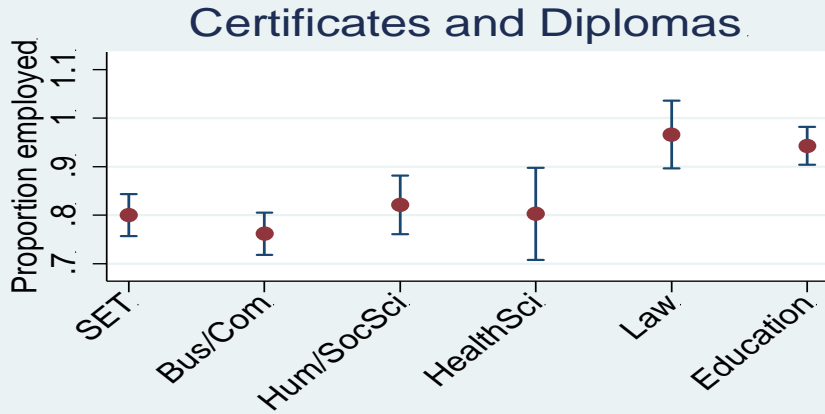
- Graduate destination or tracer studies interview cohort(s) of graduates after they complete their studies.
 - Typically use administrative records for the sample frame, relying on contact details provided by the student while studying.
 - Follow-up interviews usually via email or phone.
- There have been 3 main tracer studies in South African: HSRC study, the Eastern Cape study and the Western Cape Graduate Destination Study (the largest).
- Currently plans for a National Graduate Tracer Study.

Advantages of GDS data



- Focus on graduate population circumvents sample size issues experienced by national survey datasets.
- Allows for more disaggregated analyses
 - For example, disaggregating by institution and field of study allows investigation into the match between labour force participation and labour shortage areas.

Employment rates of graduates by qualification type and area of study



weighted

Qualification type by Campus

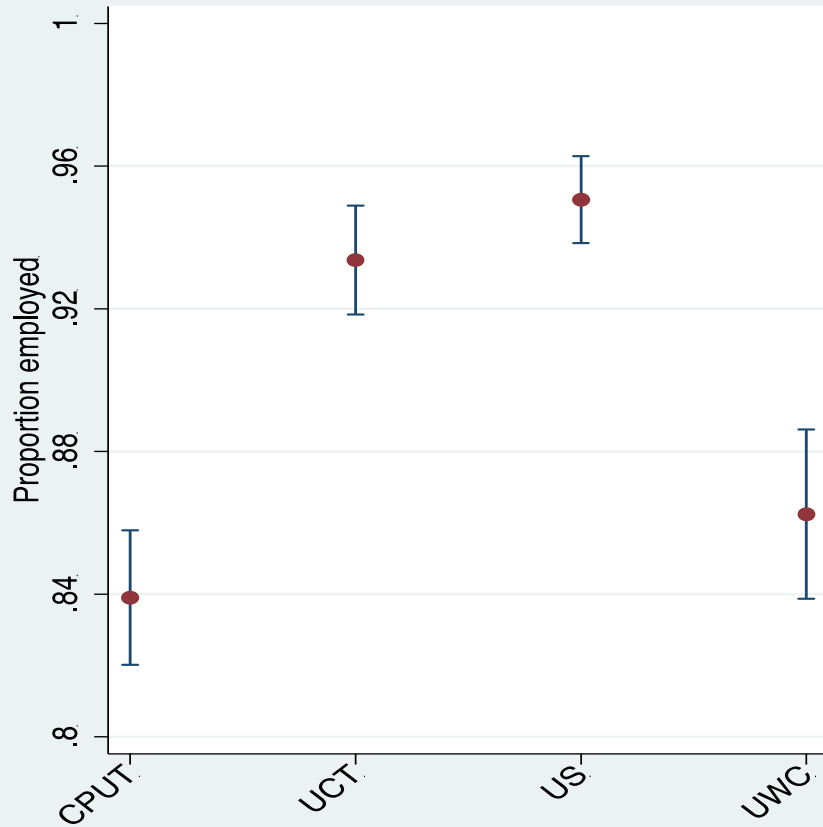


Qualification type	Institution				Total
	CPUT	UCT	US	UWC	
Certificate/diploma	61.36	4.67	1.48	11.12	21.76
Postgraduate certificate	0	14.08	19.65	8.59	10.68
Bachelor's	35.79	48.26	44.09	53.14	43.99
Honours	1.42	14.03	17.25	16.86	11.62
Master's	1.28	16.37	15.18	8.73	10.32
Doctorate	0.15	2.6	2.36	1.56	1.63
Total	100	100	100	100	100

Employment rates of graduates by institution

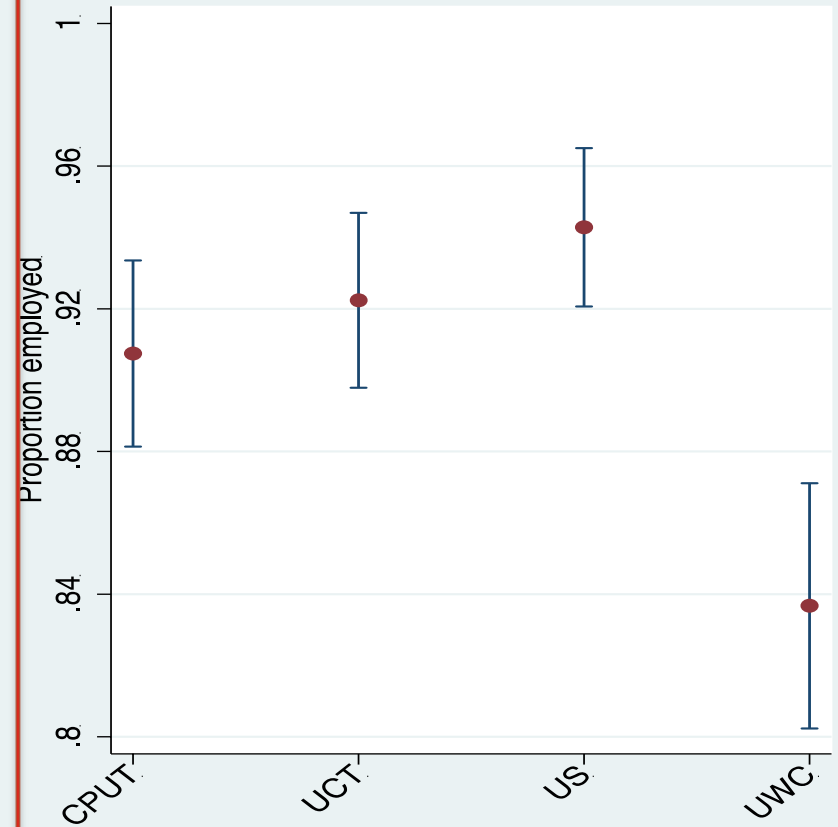


Employed – all qualifications



Weighted

Employed – Bachelor's only



Advantages of GDS data



- Answer questions specifically related to graduates:
 - labour market and further studying trajectories
 - perceived value of their qualification once working
 - relevance of qualification in the workplace
 - how much the qualification prepared the graduate for work
 - satisfaction with work obtained
- GDS studies aid us in unpacking many of the puzzles that have remained untouched due to data limitations.

GDS's Achilles heal: Non-random non response



- GDS are prone to low response rates, with response potentially linked to different employment trajectories.
- Non response is always a concern in that it reduces sample size and therefore the power of a survey to demonstrate relationships of significant interest.
- Main concern for a survey of this size is that those who respond are different in important ways to those who do not respond.
- Given the large sampling frames generally available to utilize in the design of a GDS – all graduates – this concern is doubly problematic as the **realised samples are usually large enough to get precisely measured estimates even if these estimates are in fact wrong.**

The Western Cape Graduate Destination Study

response rates



campus	mean	N
CPUT	0.218	7441
UCT	0.219	6165
SU	0.216	7380
UWC	0.267	3724
Total	0.225	24710

Why do we care about non-response in GDS?



- Response in graduate destination studies is likely to be linked to different employment trajectories.
 - E.g. A graduate leaves the country for employment
 - E.g. A graduate cannot find a job and therefore is disinterested in answering a survey from their prior institution
- As a result, not clear whether these data can provide unbiased estimates of the labour market trajectories of graduates.
- Yet, samples are large and therefore allow detailed, disaggregated analyses with precisely measured estimates.
- Important implications for the university sector: get precisely measured information that can be wrong.

The analysis in the paper



- **Examines non-response in the WCGDS in detail in order to:**
 - Document procedures used in the survey and their impact on outcomes to provide a resource for those using these data and for those planning Graduate Destination Studies
 - Describe baseline differences in characteristics between those who responded versus those who did not respond to the survey and explore these in a multivariate framework
 - Propose methods to assess and account for non-response bias using national administrative databases and information on the type of contact details available
 - Provide suggestions for design of similar studies going forward

Summary of analysis findings



- Destination studies have a particular type of bias which is inherent to their design.
- We show that the characteristics of responders and non-responders differ in non-random ways and this is clear when looking at observable or measureable variables.
- The direction of the bias (e.g. on employment outcomes) between responders and non-responders is difficult to identify in the WCGDS data.
- We assess the extent of selection bias for those in the labour market and find that an analysis of employment outcomes does not appear to be substantively affected.

Baseline preparation



- Plans for a National Graduate Destination Survey (NGDS) have/are currently being discussed.
- A study of this size bears large costs and will be vulnerable to high non-response.
- Quality information across all institutions is vital to accurately inform policy formulation.
- One key dimension is the preparation of the initial sampling frame and that good measures be put in place to follow graduates.

Planning a Tracer Study



1. Comprehensive and consistent baseline preparation
2. Using a sample

And once the data are collected:

1. (Re)weighting
2. Assessment of bias

Baseline information matters



	Non-Responder	Responder
Contact details available:		
Cell	0.66	0.88***
Landline	0.57	0.55
Email1	0.71	0.77***
NSFAS cell	0.13	0.17***
NSFAS email	0.12	0.17***
Email type:		
UCT	0.04	0.03***
CPUT	0.01	0.01
UWC	0.11	0.12**
SUN	0.17	0.14***
institutional	0.34	0.3***
Sample size	19150	5560

88% of students who responded to the survey had cell phone details, compared to 66% of students who did not respond

Baseline preparation



- **Prepare comprehensive baseline information that is consistent across universities**
 - Plan ahead and invest in the information collected while students are still studying
 - Reconceptualise the ‘graduate exit’ study to provide baseline information not available from institutional records. Use mixed modes to collect information from all student graduates.
 - Notify students that they will be contacted and collect multiple contact details
 - Keep in touch with students in intervening years
 - Compile information from different administrative records

Using a Sample



- A well designed sample can focus resources and improve response rates
 - E.g. The Eastern Cape Graduate Destination Study achieved response rates of 47% among Rhodes Students and 37% among students from the University of Fort Hare.
- Institutional data provides a complete sampling frame from which to sample

(Re)Weighting



- Reweighting can be used to adjust the sample of responding graduates for non-response.
- Based on adjusting for bias as evident in observed characteristics.
- Information that can be used for reweighting must be available for all students in the sample.
 - From the baseline or
 - From auxiliary datasets
- Only adjusts for observed differences, therefore the effectiveness of the reweighting exercise is strongly dependent on the available data.

Assessment of bias



- **Two approaches used in the literature:**
 1. Compare to other data sources – e.g. the survey reports that % of students are studying. This can be compared to HEMIS records of the percentage of students studying conditional of year of graduation.
 2. Modelling the impact of controlling for selection based on unobservable characteristics

Assessment of Bias



- The second approach requires information that has a strong relationship to response but that is unrelated to the outcome being investigated (e.g. type of email was used in the WCGDS).
- In the WCGDS, the method suggests that selection bias does not appear to be a major concern for analyses of employment outcomes.
 - This finding only applies to employment outcomes
 - Assessment of bias would need to be conducted for each outcomes (e.g. job satisfaction, job matching, or earnings) of interest.
- Record information about the survey process at an individual level
 - Many of the techniques available to assess non-response bias rely on information about the survey process.
 - Especially those that affect the odds of the graduate responding to the survey.
 - E.g. information on whether the graduate opened the email allows differentiation between non-contacts and those who chose not to respond.

An aside



- In each case we have discussed the importance of using auxiliary data to prepare, augment, adjust and assess tracer study data.
- A national student level database would tick many of these boxes.
- In addition, by centralising this information institutions with fewer resources to maintain institutional records would be assisted.

Utilizing Administrative Data in Tracer Studies



- **Utilise other administrative databases**
 - To limit the number of questions asked
 - Increase baseline information
 - Cross validate survey information obtained
 - Weight the data for non-response
- **Examples?**
 - HEMIS, schools, SARS, SASSA
 - SARS has postal code – linking this to baseline would therefore give us information both on who is employed and who is not employed but allow us to assess the characteristics of individuals in similar neighbourhoods

In summary



- Graduate tracer studies provide an important source of ‘labour market intelligence’.
- They are however vulnerable to low and unrepresentative response patterns.
- Care taken in the design stages can mitigate against low response.
- Post data collection techniques are available to improve how representative the data are and assess potential bias.
- Augmenting the design and assessment stages of a tracer study with data from administrative records has many potential benefits.

Thank you



- Full paper:

Branson, N. and Leibbrandt, M. (2017). Assessing the usability of the Western Cape Graduate Destination Survey for the analysis of labour market outcomes. SALDRU WP Number 198. Cape Town, SALDRU, University of Cape Town

- Available at: www.opensaldru.uct.ac.za

- Acknowledgments:

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An Integrated National Student Database



- What would this be?
 - Annually updated student level data from school (LURITS/ Matriculation exams), through university (HEMIS) into labour market (SARS)/ social support (SASSA)
 - Once FETMIS function, could include TVET sector
- Available on a platform that would maximize institutional, policy and academic use of the data
- For research to promote student access and success and inform policy.

An Integrated National Student Database



- An integrated national database would allow:
- A system wide examination of trends in education over time.
- Students to be followed as they transition into institutions, across institutions and exit institution, enabling a life cycle approach to student based research.
- Information on lagging and leading indicators across all institutions to be developed that can feed into institutional research and support programs.
- Research to inform national policy
- And to evaluate interventions.