

# Career choice and unemployment length: A study of graduates from a South African university

Industry and Higher Education  
2016, Vol. 30(6) 413–423  
© The Author(s) 2016  
Reprints and permission:  
sagepub.co.uk/journalsPermissions.nav  
DOI: 10.1177/0950422216670500  
ihe.sagepub.com



**Precious Mncayi and Steven Henry Dunga**

North-West University, South Africa

## Abstract

Graduate unemployment is especially problematic in a country where much emphasis is placed on furthering academic studies for economic and personal rewards. This article investigates the relationship between career choice and unemployment length among graduates from a South African university. Data were collected by means of a survey questionnaire distributed to graduates in the university's alumni database. An analysis of variance model was estimated and various descriptive analyses and an ordinary least squares regression were employed. The study finds that the specific majors held by graduates not only influence employment status but also the time taken to find employment. Although human resources, industrial psychology, labour relations management, public administration, public management and politics remain the most popular majors, many graduates in these areas have to wait a long time before securing a job. In light of their findings, the authors recommend that university courses should be as practically oriented as possible in order to help graduates in the job market and consequently to make the transition from education to work an easier one. For their part, graduates need to ensure that they make wise and informed career choices. The government needs to put into effect direct interventions that will enhance and augment teaching and learning throughout the educational system, bearing in mind that the choice to study a certain discipline may be affected by many factors, some of which are beyond the control of the student, such as the quality of school education or socio-economic background.

## Keywords

career choice, graduate unemployment, skills mismatches, South Africa

Higher education has expanded rapidly in many parts of the world in recent years, and so increasing numbers of graduates have been entering the labour market. According to Machin and McNally (2007), this development has affected the way employers use educated labour. The increase has also resulted in strong competition for jobs and an upsurge in graduate unemployment – various studies have shown that graduate unemployment has become a cause for serious concern internationally (AEO 2012; Baldry, 2013; Farooq, 2011; Filmer et al., 2014; Hanapi and Nordin, 2014; ILO, 2013).

Despite several transformations of the higher education system in South Africa, many students continue to enrol for qualifications with low-employment prospects, leaving a considerable shortage of significant skills in the country (Moleke, 2009; Pauw et al., 2008; Rasool and Botha, 2011). The South African Department of Higher Education and Training reports that many university students fail to enrol for programmes that teach what are categorized as

scarce skills; for example, in 2011 only 28% enrolled in science, engineering and technology programmes, while over 40% of all university students enrolled in humanities programmes (DHET, 2013) and humanities graduates have much higher unemployment rates (AEO, 2012). The labour market has an oversupply of qualifications for skills that are not in demand by firms and the economy (Moleke, 2009; Nel and Neale-Shutte, 2013). Thus, many graduates lack the skills industry needs and, if they do find employment, often remain underused in jobs for which they are not specifically qualified (Henley, 2013; Shierholz et al., 2014). A report by the Adcorp Employment Agency (2014: 8) argues that the 'high-skilled segment of the South African labour

---

## Corresponding author:

Precious Mncayi, School of Economic Sciences, North-West University  
Vaal Triangle Campus, PO Box 1174, Vanderbijlpark 1900, South Africa.  
Email: precious.mncayi@nwu.ac.za

market is persistently in a state of excess demand as there are hundreds and thousands of unfilled vacancies due to the shortage of workers with the relevant qualifications’.

Given this skills gap, employers in South Africa consistently identify the lack of a sufficiently skilled labour force as one of their foremost concerns (Fisher and Scott, 2011). A graduate’s employment prospects seem to depend on the specific degree qualification held rather than merely on the achievement of a tertiary qualification. Graduates with qualifications in the hard sciences (such as chemistry) or with specialized qualifications in, for example, accounting or engineering, appear to have the best chances of finding employment (Spaull, 2013), while those graduating in the humanities or social sciences are more likely to face unemployment or lengthier job searches (Moleke, 2009). This is not to say that the humanities do not have a place in the labour market, but the available jobs are outweighed by the number of graduates coming out of universities every year. It may therefore be that graduate unemployment is at least partly a function of uninformed career choices: indeed, some studies (e.g. CHEC, 2013) have found that a large number of students never make use of the career guidance services offered by their university during their studies. Perhaps, then, the career guidance services offered are not well-tailored to students’ needs?

Against this background, this study aims to investigate the issue of career choice and unemployment length among young graduates from a specific South African university.

## Literature review

The relationship between higher education and the labour market has been widely studied, reflecting the importance of human capital development to economic growth (Altbeker and Storme, 2013; Bhorat, 2009; Farooq, 2011; Griesel and Parker, 2009; Hanapi and Nordin, 2014; Pauw et al., 2008; Van Der Berg and Van Broekhuizen, 2012). It is also generally accepted that individuals with higher education qualifications have an added advantage in the labour market over those with a lower qualification (Fourie, 2012; GCE, 2010; Harvey, 2000; Riddell and Song, 2011; Stats, 2014b; World Bank, 2006). However, Moleke (2006) argues that not all graduates enjoy such an advantage. Graduate outcomes and pathways are different for various fields of education, with those graduating in certain fields taking longer to find employment than others (Coates and Edwards, 2009; Du Toit, 2003).

Mismatches between graduates and employers’ needs are divided into two categories: qualification mismatches and skill mismatches (Farooq, 2011). Qualification mismatches occur when the qualifications graduates hold differ from those required by employers; a skills mismatch results when a graduate has a higher or lower skill level than that required to do a particular job (Berlingieri and Erdsiek, 2012). Farooq (2011) argues that, as noted above, the

mismatch may be due to the chosen field of study as well as a broader mismatch between education and industry.

In a study done on 36 African countries focusing on the most important employment challenges young people face, in more than half of the countries surveyed, a skills mismatch was identified as the main obstacle to entering the labour market (AEO, 2012). Studies elsewhere have produced a similar conclusion. Rodríguez et al. (2008), in their study of Brazil, found that graduate unemployment stemmed from mismatches between the demand for and supply of skills in the labour market. From the perspective of employers, a baseline study by Griesel and Parker (2009) on South Africa found a large gap between what employers got from graduates and what they expected to get. Employers were asked, for various specific skills, to indicate on a scale of 1–5 (*Very dissatisfied* to *Very satisfied*) what they expected from their graduate employees compared to what they actually found: their rating of the gap between expectation and reality in written communication skills, for example, was 1.34, and for problem solving it was 1.35. The World Economic Forum (WEF, 2014) also found that the majority of graduates emerged from university with qualifications that were not needed by the labour market. In 2012, about 600,000 South African university graduates were unemployed, while the private sector was struggling to fill an estimated 800,000 vacancies (Economist, 2012). Again, Adcorp (2014) reported that in 2013 about 829,000 jobs had remained unfilled mainly because of the persistent shortage of jobseekers with the relevant skills. Such severe mismatches are not exclusive to South Africa: a study by Hanapi and Nordin (2014) found that many employers in Malaysia considered graduates to be lacking in the essential skills and qualifications needed by industry, and Berlingieri and Erdsiek (2012) concluded that a substantial proportion of graduates in Germany lacked the qualifications or skills required by employers.

With regard to different fields of study, Ryan (2013) found that a higher percentage of graduates with science and engineering qualifications had found permanent full-time employment than graduates in the arts, humanities and languages. In South Africa, the unemployment rate among arts and social science graduates increased from 10% for 2005/2006 to 24% for 2009/2010 – much higher than the unemployment rates of graduates from other fields of study (DHET, 2013). Such a high rate clearly indicates serious difficulties in finding permanent employment for graduates in these fields (ROA, 2012). A study by CHEC (2013) found that graduates in education were more likely to get a job than others. Similarly, a study by Acquah (2009) on the earning and employment prospects of tertiary graduates in South Africa found that qualifications in education, law, manufacturing and engineering were rewarded more highly in the labour market through better employment prospects than graduates in the arts and other fields. Moleke (2009) also found that humanities and social science graduates

were likely to take longer to find employment. On the other hand, Pauw et al. (2008), looking at graduate unemployment in South Africa, concluded that those with humanities and social sciences degrees accounted for a lower share of unemployed graduates than those with qualifications in science, mathematics and computer studies. This difference in findings may point to the need to take sample size and region into account when considering the generalizability of particular studies. Altbeker and Storme (2013) examined the extent of graduate unemployment in South Africa and found that graduates with commerce and some science degrees had the highest likelihood of being unemployed. In the United Kingdom, a survey by the Campaign for Social Science (2013) found that employment rates for social science graduates were higher than those for graduates in science, technology, engineering and mathematics, and further that a higher proportion of the social science graduates were in senior positions with high earnings. One could argue that some of these employment opportunities are dependent on economic factors, such as growth in the economy. The recovery process from the 2009 global recession has been slow if not stagnant for many economies (IMF, 2016): South Africa has been making only slow progress, with growth rates of less than 3%, consequently constraining employment opportunities and worsening the prospect of escaping unemployment (Jones, 2015; SAIRR, 2016). More jobs have been lost than created, and the number of jobs being created by the economy has failed to keep up with the number of people entering the labour market. In addition, the economic focus on the route of science and technology, or the so-called 'critical skills', has created more jobs in those fields than in other areas, and this may partly explain why graduates in the arts and humanities are experiencing higher unemployment rates.

Because unemployment has become such a challenge in South Africa, as Razak et al. (2014) point out, a good academic record is no longer regarded as a guarantee that a graduate will get a job. According to Mlambo-Ngcuka (2006), the root of the problem can often be traced to curriculum designers who fail to pay enough attention to the relevance of the skills and competencies attained by students to their employment prospects post-graduation. The longer job searches that result often lead to graduates accepting a job just to survive (Accenture, 2013): new entrants into the labour market now frequently obtain temporary rather than permanent positions and the situation is worsened when graduates are underemployed because they have taken a job outside their area of expertise and/or below their qualification level. Accenture's (2013) study of the employment status of graduates in the United States found that about 41% of college graduates were underemployed in this way. The International Labour Organization (ILO) estimated that up to two-thirds of young people in developing countries were underutilized, because they were either not working or underemployed (ILO, 2015).

In Farooq's (2011) study of Pakistani graduates, 11.3% of the graduates surveyed had jobs that were not in line with the discipline they had studied. Bearing in mind that unused skills depreciate with time, a graduate's specialized knowledge of 3 or 4 years ago may, besides, lose relevance if it is not renewed and developed in the workplace, and so the longer a graduate is unemployed, the greater the chances of remaining unemployed (Stats, 2015b). The need to pursue a degree with better employment prospects thus becomes a critical factor.

In South Africa, successes notwithstanding, it remains the case that qualifications with low employment prospects are sometimes linked to the higher education institution attended. Because of the differences that previously existed between universities, with the historically White universities (HWU) being well-resourced and the historically Black universities (HBU) under-resourced, the government decided to merge universities to form larger institutions in an effort to overcome such problems. According to Baldry (2013), however, these mergers resulted in institutions of uneven quality, which are likely to have an impact on graduates' ability to secure employment in terms of both the quality of education they have received and how the institutions are perceived by employers. Morrow (2008) also warns that, despite the mergers among higher education institutions, the problems of historically disadvantaged universities have not disappeared. In a study investigating the South African graduate labour market, Moleke (2009) finds that graduates from HWU have better employment prospects than those from HBU, and thus concludes that graduates from HBU are often absorbed much more slowly into the labour market than graduates from HWU. Moleke suggests that a key reason why HBU graduates typically take longer to find employment may be that many of them graduate in fields that are seen as 'general', such as humanities and social sciences disciplines and that offer lower employment prospects than more professionally or technically focused degrees. This argument is supported by Morrow (2008), who also notes that HBU have lower admission criteria than HWU and that students from relatively deprived schools have a tendency to get poorer academic results and so tend to opt for softer subjects which have low entry requirements. The factors that influence a student's choice of field of study are of course wide and differ from individual to individual (Crosser and Letseka, 2010): some factors are not within their control, such as social background, financial status, the quality of school education, the choice of school subjects available and the kind of career assistance received. As Badat (2010: 4) observes, 'Social, political and economic discrimination and inequalities of a class, race, gender, institutional and spatial nature profoundly shaped, and continue to shape, South African higher education'.

Addressing the quality of education provided by HBU, Baldry (2013) suggests that it is often perceived to be poor,

and that graduate recruiters therefore choose to hire graduates from specific higher education institutions. Studies by Pauw et al. (2006) and Oluwajodu et al. (2015) support this view, finding that South African employers tend to favour graduates from certain universities in which they have confidence.

## Methodology and data collection

The participants in this study were male and female graduates who had completed their higher education at a specific South African university. The age limit for participation was 35, as the aim of the study was to examine the employment-seeking experiences of young graduates. For the purposes of the study, a graduate was defined as an individual with at least a diploma or degree from any higher education institution. The focus on graduates was based on the general assumption that a university degree results in high job opportunities and because of the substantial resources that are invested in higher education in the hope of a higher return (Kane-Berman, 2015; Mlatsheni, 2012; Moleke, 2006; National Treasury, 2011; Rasool and Botha, 2011; Stats, 2014a). The participating graduates were chosen randomly from the university's alumni database, regardless of the course studied. Other studies (e.g. Archer and Chetty, 2013; CHEC, 2013; Moleke, 2006) have used similar approaches to examine the same or a related topic.

Data were collected through a questionnaire survey conducted from 17 July 2015 to 31 August 2015. The survey was self-administered and the questionnaire link was sent via email to respondents with a cover letter explaining the purpose of the study, the length of the questionnaire, details of the researcher and how the results would be used. In total, 282 questionnaires were retrieved and of those 233 questionnaires were usable. Because, for most distributions, a sample size ( $n$ ) greater than 30 is deemed sufficient for a reasonable normal approximation (Swanepoel et al., 2010), statistically the 233 sample size is sufficient.

Questionnaire ideas were adopted from CHEC (2013) and Moleke (2006) among others and were adapted to fit the purpose of the study. A pretest study was conducted before the questionnaire was distributed and necessary modifications were made. The questionnaire was constructed by a qualified statistician who ensured that the respondents did not encounter problems when completing it. It solicited demographic, education and employment information.

To comply with ethical academic research standards, participation was voluntary and confidentiality and anonymity were ensured for respondents: responses were disclosed only in the form of aggregate statistical summaries. For ethical reasons, the name of the university at which the graduates were sourced is not disclosed.

The data were analysed using the IBM SPSS Statistics Version 23. An ordinary least squares regression was used

to assess which major modules had a significant influence on the length of a graduate's unemployment:

$$\text{UNEMPL} = \beta_0 + \sum_n^i \beta_i D_i + \varepsilon,$$

where UNEMPL is the period for which the graduate was unemployed (a continuous variable measured in months).  $\beta_0$  is the constant term to capture the average unemployment length for the benchmark module category, in this case, human resources and labour relations studies (HRLS), holding all other variables equal to zero, and  $\beta_i$  is the coefficient associated with  $D_i$ , the dummy variable created for the modules in which the graduate majored or specialized. The error term is represented by  $\varepsilon$ . The dummy variables are defined as follows: HRLS is the reference point or constant, economics and risk management is  $D_1$ ; accounting and financial management (AFM) is  $D_2$ ; marketing, business management and entrepreneurship (MBE) is  $D_3$ ; psychology and sociology is  $D_4$ ; mathematics and statistics is  $D_5$ ; languages and communication is  $D_6$ ; law is  $D_7$ ; computer sciences and information technology (CSIT) is  $D_8$ ; public administration, public management and political studies is  $D_9$ ; intermediate, senior and FET education is  $D_{10}$ ; health and social work is  $D_{11}$  and art and history is  $D_{12}$ .

## Results of the descriptive analysis

The response rate was higher for female graduates than males at 57.9% compared to 42.1%. Approximately 68.5% were aged 21–29, while those aged between 30 and 35 made up 31.3%. Participants were further categorized into race groups, with Black graduates (57.9%) represented more than other races. White graduates were the second largest group at 39.9%, followed by Coloureds and Indians at 1.3% and 0.9%, respectively.

Many respondents had a degree in commerce (53%), followed by humanities (25%) and science and education (both at 11%). The module specialization category with the highest number of unemployed respondents (23.1%) was human resources, industrial psychology and labour relations. About 15.4% of the unemployed graduates had majored in government and political studies. Another 15.4% had majored in accounting and finance and 11.5% in economics and psychology and sociology. An honours degree was the most common qualification among respondents (42.9%), followed by a bachelor's degree (34.8%) and a master's degree (18.9%). Only 3.4% had a postgraduate diploma.

Turning now to the employment status analysis, 88.8% of the sample were employed. Contrary to Van Der Berg and Van Broekhuizen (2012), Altbeker and Storme (2013), Van Broekhuizen (2016) and Pauw et al. (2006), who found a lower unemployment rate among South African degree programme graduates (5% or slightly higher), our results

**Table 1.** Age and employment status of respondents.

Age category	Unemployed (%)
21–24	46.2
25–29	42.3
30–35	11.2
Total	100

Source: Survey data (2015).

indicate that about 11.2% of the sampled graduates were unemployed. Further analysis revealed that, of the graduates who were employed, more than 70% were employed in a job relevant to their field of study, while around 27% were in jobs that did not relate directly to their studies. Respondents who were in jobs not related to their field of study were further asked to indicate the state of their current job: about 52% indicated that they were in a job requiring lower skills than those they had acquired during their studies (e.g. a graduate with an accounting degree working as a cashier). This may indicate that these graduates are underemployed and not using their skills to their full potential, a situation that can lead to discouragement. A study by African Economic Outlook (AEO, 2012) found underemployment and discouragement to be very high among younger tertiary graduates.

Females made up the largest percentage of unemployed graduates at 65.4% compared to only 34.6% males. Unemployment seems to be significant among females in South Africa, graduates or not. The finding that unemployment rates are higher among young women than young men is in line with the report by AEO (2012). Stats (2015a) too reports that young women suffer more than their male counterparts with regard to unemployment. Further analysis reveals that the majority of the unemployed respondents were aged 21–24 (46.2%), followed by 25–29 year olds (42.3%) and finally 30–35 year olds (11.5%) – see Table 1.

The Pearson  $\chi^2$  (0.070) further shows significant association between age and employment status. Correlation between age and employment status is also significant at the 0.05 level (two-tailed). This confirms Altbeker and Storme's (2013) findings that younger graduates are more likely to be unemployed than older ones. Young graduates of course are often first-time entrants into the labour market and in most cases lack experience and may struggle to handle the challenges in the world of work (Biavaschi et al., 2013).

As can be seen from Table 2, the majority of the unemployed graduates were Black, with the survey results indicating that 80.8% of Black graduates were unemployed compared to only 19.2% of the White graduates. Studies by Moleke (2006, 2009) and Baldry (2013) support these findings: Moleke argues that the lower employment and high unemployment rates among Black graduates reflect the fact that many have degrees in subjects with lower employment prospects (such as humanities subjects).

**Table 2.** Race and employment status of respondents.

Race group	Percentage	Unemployed
Blacks	57.9	80.8
White	39.9	19.2
Coloureds	1.3	0
Asian/Indian	0.9	0
Total	100	100

Source: Survey data (2015).

Indeed, the current study found that more than two-thirds of the respondents with humanities degrees were Black graduates (see Table 3).

Further analysis shows that, of those respondents who were unemployed, 42.3% had a first degree and 38.5% an honours degree. None of the graduates with a postgraduate diploma were unemployed, and only 19.2% of the unemployed had an MBA or master's degree. Looking at age category in combination with degree level shows that 38.6% of the respondents with bachelor's degrees (i.e. first degrees) were in the 21–24 age category. Thus, their unemployed status might reflect the fact that they are young may well lack work experience and are new entrants into the labour market. These results are in line with those of CHEC (2013), which found that the unemployment rate for new graduates was higher (9.6%) than for older graduates (4.6%).

As shown in Table 3, the highest concentration of graduates in the unemployed category had a humanities degree, followed by those with a degree in commerce. The type of degree is clearly a factor in employment prospects (CHEC, 2013; Moleke, 2009), especially in a country such as South Africa where employers seek graduates with specific degree qualifications because of the scarcity of skills (Pauw et al., 2008; Rasool and Botha, 2011). Moleke (2006) and Ryan (2013) found that arts and humanities graduates had the highest unemployment rate. In our results, the Pearson  $\chi^2$  (0.065) shows a significant association between field of study and employment status.

We then attempted to identify which major modules, categorized into broad themes, were associated with higher unemployment and which had most typically been studied by the employed respondents. The complete cross-tabulation analysis is shown in Table 4. The analysis shows that the module specialization category associated with the highest number of unemployed respondents is human resources, industrial psychology and labour relations (23%). About 15% of the unemployed graduates majored in government and political studies and another 15% majored in accounting and finance, followed by economics and psychology, both at 11.5%.

Of the employed respondents, about 19% majored in economics subjects, followed by human resources and labour studies at 18.8%. Approximately 16% majored in

**Table 3.** Field study of respondents.

Degree type	Unemployed (%)
Humanities	46.2
Commerce	42.3
Education	7.7
Science	3.8
Race of humanities graduates	Percentage of humanities graduates
Black	62.7
Asian/Indian	0.0
Coloured	0.0
White	37.3

Source: Survey data (2015).

accounting and finance subjects, followed by marketing and business management at 10.6%. In summary, the results show that the modules with the highest number of unemployed graduates included human resources, labour relations and politics, while more graduates who had majored in economics and risk management, computer sciences, education and accounting were employed. These findings are consistent with those of Pauw et al. (2008). In contrast, Altbeker and Storme (2013) found that commerce and science graduates were more likely to be unemployed than graduates from other mainstream studies, while AEO (2012) also found unemployment to be higher among economics and management graduates. The correlation analysis between major module and employment status shows a Pearson correlation of 0.049.

With regard to whether or not the graduates had made use of the career guidance services offered by their university, Table 5 shows that the majority had not. More generally, 57.7% of the unemployed graduates had not made use of career guidance services. Nevertheless, a relatively high percentage (42.3%) had used the services, which may indicate that the career guidance services offered by the university are not as effective as they might be in helping graduates to find jobs. Oluwajodu et al. (2015) found that one of the reasons cited by employers to explain why certain universities in South Africa had large numbers of unemployed graduates was that these universities did not stage regular career exhibitions or put effort into making students aware of career and recruitment opportunities. Our  $\chi^2$  test shows a significant (0.014) association between use of career guidance services and employment status.

As many as 55.8% of the surveyed graduates said they were not aware that career guidance services were being offered at their campus and a further 17.6% said that they had not found the time to make use of the services. CHEC (2013:8) also found that many graduates (67%) never made use of the career guidance services offered by their universities. Apart from the time factor, other common reasons for not making use of campus career guidance included the poor services offered and an over-concentration on certain

popular fields of study. In light of such findings, universities might do well to improve their career guidance offerings and then promote them more effectively to students.

## The regression model – Results and discussion

As shown in Table 6, the module category ‘economics and risk management’ has a negative coefficient (−3.723). This implies that, other things remaining the same, the unemployment length for a graduate who majored in economics or risk management is 3.7 months less than the 10.5 months unemployment length for graduates who majored in human resources and labour studies. The  $p$  value of 0.074 is statistically significant at the 10% level. Therefore, the economics and risk management category is a significant explanatory variable in the model.

The  $p$  value of 0.001 for AFM is statistically significant at the 1% level, rejecting the null hypothesis. AFM has significant predictive capabilities in the presence of other modules: the average unemployment time for graduates who majored in this area is 7.570 months less than that for those who majored in HRLS. This means that AFM graduates take about 3 months after graduation to find a job, while HRLS graduates take about 10.46 months. Similar results were also obtained by Moleke (2006), who found that graduates in fields with a more professional focus obtained employment more rapidly than others.

MBE has a  $p$  value of 0.081, which is statistically significant, rejecting the null hypothesis that this module does not help in predicting unemployment length. Although the  $p$  value is more than 0.05, it is significant at the 10% level. The length of unemployment for a graduate who majored in marketing and business management decreases by 4.312, *ceteris paribus*, compared to HRLS graduates. In brief, MBE is also a significant predictor of length of unemployment. The Indiana Business Research Center (IBRC, 2012) found that business majors were very unlikely to take more than 26 weeks to find a job. Thus graduates who majored in these modules had the highest probability of taking less than 7 months to find employment.

The length of unemployment for sociology and psychology majors is 0.922 months more than for HRLS graduates. In other words, if a graduate majored in sociology and psychology, the time it takes for him or her to get a job is about 11 months, if all else remains unchanged. However, the  $p$  value of 0.763 is not statistically significant. Therefore, sociology and psychology as majors do not help in predicting unemployment length in this model.

As for graduates who majored in AFM, those majoring in mathematics, statistics and engineering (MSE) take 7.229 months less to find a job than HRLS graduates, all else being equal. The  $p$  value of 0.023 is significant at the 5% level, so that MSE majors are significant predictors of unemployment length in this model. A study by AEO

**Table 4.** Employment status of respondents in relation to majors studied.

	Economics, risk management	Accounting, finance	HR, industrial psychology, labour relations	Marketing, business management, logistics	Psychology, sociology	Physical sciences, maths, engineering	Languages, communications	Law	Computer sciences, IT	Government, political studies	Education	Health	Arts, history	Total
<b>Employed respondents</b>														
Number	40	33	39	22	10	11	13	2	16	6	7	6	2	207
Percentage of total employed	19.3	15.9	18.8	10.6	4.8	5.3	6.3	1.0	7.7	2.9	3.4	2.9	1.0	100.0
Percentage within major category	93.0	89.2%	86.7%	91.7%	76.9%	91.7%	92.9%	100.0%	100.0%	60.0%	87.5%	85.7%	100.0%	88.8%
<b>Unemployed respondents</b>														
Number	3	4	6	2	3	1	1	0	0	4	1	1	0	26
Percentage of total employed	11.5	15.4	23.1	7.7	11.5	3.8	3.8	0.0	0.0	15.4	3.8	3.8	0.0	100.0
Percentage within major category	7.0	10.8	13.3	8.3	23.1	8.3	7.1	0.0	0.0	40.0	12.5	14.3	0.0	11.2
<b>Total</b>														
Number	43	37	45	24	13	12	14	2	16	10	8	7	2	233
Percentage of total employed	18.5	15.9	19.3	10.3	5.6	5.2	6.0	0.9	6.9	4.3	3.4	3.0	0.9	100.0
Percentage within major category	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Survey data (2015).

**Table 5.** Employment status in relation to use of campus career centre.

Career guidance	Employed	Unemployed	Total
Yes			
Number	43	11	54
Employment status (%)	20.8	42.3	23.2
No			
Number	164	15	179
Employment status (%)	79.2	57.7	76.8

Note: Pearson  $\chi^2 = 0.014$ .

Source: Survey data (2015).

(2012) also found that the unemployment rate for engineering majors was consistently lower, and Ryan (2013) reported high employment percentages for these graduates. In its study on graduate unemployment, the Indiana Business Research Center (2012) found that, although engineering majors had the highest chance of being unemployed, they also had a 44% likelihood of being in short-term unemployment, taking 4 months or less to get a job.

The average waiting period for language and communication majors is about 7 months less than that of HRLS majors. *Ceteris paribus*, graduates who majored in language and communication wait for an average of 3 months before becoming employed. The  $p$  value of 0.015 is significant at the 5% level, rejecting the null hypothesis. In contrast to our findings, the IBRC (2012) found that communication majors had the highest probability of longer job search periods and ultimately of being in longer spells of unemployment.

Graduates who majored in law waited for about 7 months, while art and history majors waited about 1.3 months less than those who majored in HRLS. However, the  $p$  values for both law (0.674) and art and history (0.214) are not statistically significant in the model. These modules do not help in predicting unemployment length.

The length of unemployment for CSIT graduates is 4.96 months less than that of HRLS graduates, *ceteris paribus*. The  $p$  value of 0.081 is statistically significant at the 10% level, rejecting the null hypothesis. This suggests that these modules are significant predictors of length of unemployment.

There is a positive relationship between public management and political studies and length of unemployment. Holding other things constant, graduates who majored in these modules increased their job waiting period or length of unemployment by 9.438 months over that of HRLS graduates. These modules have a  $p$  value of 0.006, which is statistically significant at the 1% level, indicating that they significantly explain graduate length of unemployment in this model. The IBRC (2012) found that public policy majors had about a 51% chance of taking 5–26 weeks to find employment.

The coefficient for education is  $-7.412$ , suggesting that the length of unemployment for an education graduate will be 7.412 months less than for graduates who majored in HRLM. In other words, these graduates are likely to wait for about 3 months before finding a job, *ceteris paribus*. The  $p$  value for education is 0.048, which is statistically significant at the 5% level, and so this module significantly predicts length of unemployment. Similarly, the waiting period for graduates who majored in health is 7.405 months less than the average length of unemployment of HRLS graduates. The  $p$  value of 0.062 is statistically significant at the 10% level, rejecting the null hypothesis. A study by CHEC (2013) found that the fields of health and education employ the most graduates as professionals, and thus the low unemployment rates for these majors are attributable largely to the critical employment role of the public sector. The IBRC (2012) also found health and education majors to be unemployed for a short period of time, taking only a month or less to find employment.

## Conclusion

This study investigated career choices and unemployment length among graduates from a South African university. It was found that the graduates who held degrees in humanities subjects took longer to find employment than those graduating in other fields of study. Our findings also suggest that human resources, industrial psychology, labour relations management, public management, public administration and politics remain the most popular majors, and yet many graduates in these mainstream subjects have to wait for a long time before finding a job. In particular, the waiting period is longer for graduates who majored in public management, public administration and politics (about 19 months compared to the 10.5 months for graduates who majored in human resources, industrial psychology and labour relations). Accounting, maths, education and health graduates have the shortest average waiting periods.

We therefore conclude that majors held by graduates can influence not only employment status but also how long it takes to find a job after graduating. Thus, we recommend that university courses be as practical as possible to make the transition from education to work an easier one and to bring higher education closer to market needs. Also, more could be done to ensure that students have good career guidance: regular career exhibitions would help to bridge the gap between demand and supply in the labour market and to help students to be better informed about the relevance of various courses to their future careers. In addition, graduates seem often to be misinformed about the pace of success in the workplace: wage expectations should be lowered so that students are aware of the reality of entry-level wages.

Finally, and most importantly, to break the cycle of producing graduates lacking in the skills needed by the

**Table 6.** Regression analysis of major module and unemployment length.

Model	Unstandardized coefficients		Standardized coefficients		t	Significance
	B	Standard error	$\beta$			
Constant (HR and labour relations)	10.462	1.449			7.220	0.000
Economics, risk management	-3.723	2.073	-0.141		-1.796	0.074
Accounting, financial management	-7.570	2.157	-0.269		-3.509	0.001
Marketing, business management	-4.312	2.457	-0.128		-1.755	0.081
Sociology, psychology	0.922	3.061	0.021		0.301	0.763
Maths, engineering	-7.229	3.158	-0.156		-2.289	0.023
Language, communications	-7.291	2.975	-0.169		-2.451	0.015
Law	-2.962	7.024	-0.027		-0.422	0.674
Computer sciences, IT	-4.962	2.829	-0.122		-1.754	0.081
Government, politics	9.438	3.398	0.186		2.777	0.006
Education	-7.412	3.730	-0.131		-1.987	0.048
Health	-7.405	3.949	-0.123		-1.875	0.062
Art, history	-8.762	7.024	-0.079		-1.247	0.214

Note: Dependent variable: unemployment length. ANOVA Sig. = 0.000. F statistic = 3.347. Adjusted  $R^2$  = 0.108. ANOVA: analysis of variance. Source: Survey data (2015).

economy, South Africa's policy makers should put in place initiatives to improve teaching and learning throughout the school system, with an emphasis on the lower grades (McCarthy and Oliphant, 2013). The choice to study a particular discipline is affected by many factors, some of which are beyond the control of students, such as quality of schooling education or socio-economic background.

### Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### References

- Accenture (2013) *Accenture 2013 College Graduate Employment Survey: Key Findings*. USA: Accenture.
- Acquah A (2009) Tertiary graduates: earnings and employment prospects in the South African labour market. *Southern African Review of Education* 15(2): 27–44.
- Adcorp (2014) Jobs in the informal and temporary sectors increase towards the end of 2013. [http://www.adcorp.co.za/NEws/Pages/Jobsintheinformalandtemporarysectorsincrease\\_towards\\_the\\_end\\_of\\_2013.aspx](http://www.adcorp.co.za/NEws/Pages/Jobsintheinformalandtemporarysectorsincrease_towards_the_end_of_2013.aspx) (accessed 25 March 2016).
- AEO (2012) *African Economic Outlook 2012: Promoting Youth Unemployment*. Available at: <http://www.africaneconomicoutlook.org/en/telechargements> (accessed 12 August 2015).
- Altbeker A and Storme E (2013) *Graduate Unemployment in South Africa: A Much Exaggerated Problem*. Johannesburg: Centre for Development and Enterprise.
- Archer E and Chetty Y (2013) Graduate employability: conceptualisation and findings from the University of South Africa. *Progressio* 35(1): 136–167.
- Badat S (2010). *The Challenges of Transformation in Higher Education and Training Institutions in South Africa*. Paper commissioned by Development Bank of Southern Africa. Available at: <http://www.dbsa.org/EN/About-Us/Publications/Documents/The%20challenges%20of%20transformation%20in%20higher%20education%20and%20training%20institutions%20in%20South%20Africa%20by%20Saleem%20Badat.pdf> (accessed 13 May 2016).
- Baldry K (2013) *Graduate unemployment in South Africa: prevalence, characteristics and perceived causes*. MA dissertation, University of the Witwatersrand, Johannesburg, South Africa.
- Berlingieri F and Erdsiek D (2012) How relevant is job mismatch for German graduates? Discussion Paper 12-075, ZEW. Available at: <http://ftp.zew.de/pub/zew-docs/dp/dp12075.pdf> (accessed 12 August 2015).
- Bhorat H (2009) Unemployment in South Africa: descriptors and determinants. Paper presented at the *Fourth IZA/World Bank Conference on Employment and Development*, 4–5 May 2009, Bonn, Germany.
- Biavaschi C, Eichhorst W, Giulietti C, et al. (2013) *Youth Unemployment and Vocational Training. Background Paper for the World Development Report 2013*. Washington: World Bank.
- Campaign for Social Science (2013) *What Do Social Science Graduates Do?* Cheltenham: Higher Education Statistics Agency.
- CHEC (2013) *Pathways from University to Work: A Graduate Destination Survey of the 2010 Cohort of Graduates from the Western Cape Universities*. Cape Town: Cape Higher Education Consortium.
- Coates H and Edwards D (2009) *The 2008 Graduate Pathways Survey: Graduates' Education and Employment Outcomes*

- Five Years After Completion of a Bachelor Degree at an Australian University*. Camberwell: Australian Council for Educational Research.
- Crosser M and Letseka M (2010) *Student Retention and Graduate Destination: Higher Education and Labour Market Access*. Cape Town: HSRC Press.
- DHET (2013) *Statistics on Post-School Education and Training in South Africa: 2011*. Pretoria: Department of Higher Education and Training.
- Du Toit R (2003) Unemployed youth in South Africa: the distressed generation? Paper presented at the *Minnesota International Counselling Institute (MICI)*, 27 July–1 August 2003.
- Economist (2012) Education in South Africa: still dysfunctional. *The Economist*, 21 January. Available at: <http://www.economist.com/node/21543214> (accessed 16 August 2016).
- Farooq S (2011) Mismatch between education and occupation: a case study of Pakistani graduates, *The Pakistan Development Review* 50(4): 531–552.
- Filmer D, Fox L and Brooks K (2014) *Youth Employment in Sub-Saharan Africa*. Washington: International Bank for Reconstruction and Development, World Bank.
- Fisher G and Scott I (2011) Closing the Skills and Technology Gap in South Africa – Background Paper 3: The Role of Higher Education in Closing the Skills Gap in South Africa. Available at: [http://www.ched.uct.ac.za/usr/ched/docs/Fisher\\_Higher%20Education%20role.pdf](http://www.ched.uct.ac.za/usr/ched/docs/Fisher_Higher%20Education%20role.pdf) (accessed 12 August 2016).
- Fourie FCvN (2012) The South African unemployment debate: three worlds, three discourses? SALDRU Working Paper 63 (revised). Available at: [http://www.carnegie3.org.za/papers/85\\_Fourie\\_The%20SA%20Unemployment%20debate%20-%20three%20worlds,%20three%20discourses.pdf](http://www.carnegie3.org.za/papers/85_Fourie_The%20SA%20Unemployment%20debate%20-%20three%20worlds,%20three%20discourses.pdf) (accessed 12 August 2016).
- GCE (Global Campaign for Education) (2010) *Back to School? The Worst Places in the World To Be a School Child in 2010*. Saxonwold: Global Campaign for Education. Available at: <http://www.campaignforeducation.org/docs/reports/1goal/1Goal%20School%20Report.pdf> (accessed 15 August 2016).
- Griesel H and Parker B (2009) *Graduate Attributes: A Baseline Study on South African Graduates from the Perspective of Employers*. Pretoria: Higher Education South Africa and South African Qualifications Authority.
- Hanapi Z and Nordin MS (2014) Unemployment among Malaysia graduates: Graduates' attributes, lecturers' competency and quality of education. *Procedia – Social and Behavioral Sciences* 112: 1056–1063.
- Harvey L (2000) New realities: the relationship between higher education and employment. *Tertiary Education and Management* 6: 3–17.
- Henley J (2013) Young, qualified and jobless: Plight of Europe's best-educated generation. *The Guardian*. Available at: <http://www.theguardian.com/world/2013/jul/01/jobless-europe-young-qualified> (accessed 19 August 2016).
- IBRC (2012) *Major Unemployment: How Academic Programs of Study Affect Hoosier Unemployment Patterns*. Bloomington: Indiana Business Research Center, Indiana University Kelley School of Business.
- ILO (2013) *Global Employment Trends: Recovering from a Second Jobs Dip*. Geneva: International Labour Organisation.
- ILO (2015) *World Employment and Social Outlook*. Geneva: International Labour Organisation.
- IMF (2016) *World Economic Outlook: Too Slow for Too Long*. Washington: International Monetary Fund.
- Jones S (2015) Youth unemployment 'a timebomb' in developing countries, UK MPs say. *The Guardian*. Available at: <https://www.theguardian.com/global-development/2015/mar/24/youth-unemployment-timebomb-developing-countries-committee> (accessed 15 August 2016).
- Kane-Berman J (2015) There's no disguising SA's youth unemployment problem. *Business Day Live*. Available at: <http://www.bdlive.co.za/opinion/columnists/2015/01/26/theres-no-disguising-sas-youth-unemployment-problem> (accessed 15 March 2016).
- Machin S and McNally S (2007) Tertiary education systems and labour markets. Paper commissioned by the Education and Training Policy Division, OECD, for the Thematic Review of Tertiary Education. Available at: <http://www.oecd.org/edu/innovation-education/38006954.pdf> (accessed 15 August 2016).
- McCarthy J and Oliphant R (2013) *Mathematics Outcomes in South African Schools: What Are the Facts? What Should Be Done?* Johannesburg: Centre for Development and Enterprise. Available at: <http://www.cde.org.za/wp-content/uploads/2013/10/MATHEMATICS%20OUTCOMES%20IN%20SOUTH%20AFRICAN%20SCHOOLS.pdf> (accessed 15 April 2016).
- Mlambo-Ngcuka P (2006) Address delivered by the Deputy President, Ms Phumzile Mlambo-Ngcuka, at the *Third Annual Julius Nyerere Memorial Lecture at the University of the Western Cape, Library Auditorium*, 6 September 2006.
- Mlatsheni C (2012) The challenges unemployment imposes on youth. In: Perold H, Cloete N and Papier J (eds) *Shaping the Future of South Africa's Youth: Rethinking Post-School Education and Skills Training*. Somerset West: African Minds, pp. 31–41.
- Moleke P (2006) *Finding Work: Employment Experiences of South African Graduates*. Cape Town: HSRC Press.
- Moleke P (2009). The graduate labour market. In: Letseka M, Cossier M, Breier M, et al. (eds) *Student Retention and Graduate Destination: Higher Education and Labour Market Access and Success*. Cape Town: HSRC Press, pp. 87–95.
- Morrow S (2008) Race, redress and historically black universities. In: Habib A and Bentley K, eds., *Racial Redress and Citizenship in South Africa*. Cape Town: HSRC Press, pp. 263–288.
- National Treasury (2011) *Confronting Youth Unemployment: Policy Options for South Africa*. Discussion Paper. Pretoria: National Treasury.
- Nel H and Neale-Shutte M (2013) Examining the evidence: graduate employability at NMMU. *South African Journal of Higher Education* 27(2): 437–453.

- Oluwajodu F, Blaauw D, Greyling L, et al. (2015) Graduate unemployment in South Africa: perspectives from the banking sector. *SA Journal of Human Resource Management* 13(1): 1–9.
- Pauw K, Oosthuizen M and Van Der Westhuizen C (2006) Graduate unemployment in the face of skills shortage: a labour market paradox. DPRU Working Paper 06/114, University of Cape Town, Development Policy Research Unit, South Africa.
- Pauw K, Oosthuizen M and Van Der Westhuizen C (2008) Graduate unemployment in the face of skills shortage: a labour market paradox, *South African Journal of Economics* 76(1): 45–57.
- Razool F and Botha CJ (2011) The nature, extent and effect of skills shortages on skills migration in South Africa. *SA Journal of Human Resource Management* 9(1): 1–12.
- Razak MIM, Yusof AM, Syazana WN, et al. (2014) Factors influencing unemployment among graduates in Malaysia: an overview. *Journal of Economics and Sustainable Development* 5(11): 168–174.
- Riddell WC and Song X (2011) *The Impact of Education on Unemployment Incidence and Re-employment Success: Evidence from the US Labour Market*. IZA Discussion Paper 5572. Bonn: Institute for the Study of Labor.
- ROA (2012) *Maastricht University Graduate Surveys 2012, ROA-F2012/3*. Maastricht: Research Centre for Education and the Labour Market, Maastricht University.
- Rodríguez A, Dahlman C and Salmi J (2008) *Knowledge and Innovation for Competitiveness in Brazil*. Washington: International Bank for Reconstruction and Development and World Bank.
- Ryan C (2013) Field of Degree and Earnings by Selected Employment Characteristics: 2011. Available at: <https://www.census.gov/prod/2012pubs/acsbr11-10.pdf> (accessed 12 April 2015).
- Shierholz H, Davis A and Kimball W (2014) *The Class of 2014: The Weak Economy is Idling Too Many Young Graduates*. EPI Briefing paper 377. Washington, DC: Economic Policy Institute.
- SAIRR (2016) *NGS: National Growth Strategy – Investment, Infrastructure, Employment and Empowerment*. Johannesburg: South African Institute of Race Relations. Available at: [http://irr.org.za/reports-and-publications/occasional-reports/files/sairr-national-growth-strategy\\_web\\_200516.pdf](http://irr.org.za/reports-and-publications/occasional-reports/files/sairr-national-growth-strategy_web_200516.pdf) (accessed 2 June 2016).
- Spaull N (2013) *South Africa's Education Crisis: The Quality of Education in South Africa 1994–2011*. Johannesburg: Centre for Development and Enterprise.
- Stats SA (2014a) *Employment, Unemployment, Skills and Economic Growth: An Exploration of Household Survey Evidence on Skills Development and Unemployment Between 1994 and 2014*. Pretoria: Statistics South Africa.
- Stats SA (2014b) *Education: A Roadmap Out of Poverty?* Pretoria: Statistics South Africa.
- Stats SA (2015a) *Quarterly Labour Force Survey – Quarter 4, 2014*. Pretoria: Statistics South Africa.
- Stats SA (2015b) *Labour Market Dynamics in South Africa, 2014 Report*. Pretoria: Statistics South Africa.
- Swanepoel JWH, Swanepoel CJ, Van Graan FC, et al. (2010) *Elementary Statistical Methods*. 3rd ed. Potchefstroom: AndCork.
- Van Der Berg S and Van Broekhuizen H (2012) *Graduate Unemployment in South Africa: A Much Exaggerated Problem*. Working Paper 22/12. Matieland: Bureau for Economic Research, University of Stellenbosch.
- Van Broekhuizen H (2016) Graduate unemployment and higher education institutions in South Africa. *Bureau for Economic Research and Stellenbosch Economic*. Working Paper 08/16. South Africa: University of Stellenbosch.
- WEF (2014) *Global Risk 2014*. Geneva: World Economic Forum.
- World Bank (2006) *World Development Report: Equity and Development*. Washington: World Bank.