Human Capital, Job Search, and Unemployment among Young People in South Africa

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Abstract

This paper analyzes South Africa's extreme problem of youth unemployment. The paper takes advantage of the Cape Area Panel Study (CAPS), a longitudinal survey that began with 4,752 14-22 year-olds in metropolitan Cape Town in 2002. Using the rich monthly employment transitions provided for CAPS respondents between 2002 and 2006, we show that there are large racial differences in the speed at which school-leavers find jobs. There are also large differences across education groups, with much faster entry into employment among those who leave school with at least a grade 12 (matric) education. We estimate hazard-rate models of the time to first job after leaving school. Our results indicate that human capital plays a critical role in early labor force transitions. In addition to a large impact of completing grade 12, we find strong effects on the hazard rate of finding employment of scores on a baseline literacy and numeracy test. Human capital measures explain most of the difference in employment between whites and coloureds, but Africans continue to have much lower hazard rates of finding employment even after controlling for grade attainment and baseline test scores.

1. Introduction

South Africa's extreme unemployment problem has rightly been the focus of extensive research. The country has had a pervasive unemployment problem for the last forty years. Unemployment rose sharply in the 1970s and this rise continued through the 1980s, 1990s, and 2000s (Standing *et al* 1996, Kingdon and Knight 2007, Banerjee et al. 2008). As in most countries, unemployment among young people is even higher than for the labor force as a whole. As we document below, official (narrow) unemployment among African men aged 20-24 was 49% in the 2007 South African Labour Force Survey, with the broader measure at 62%.

A number of previous studies of youth unemployment in South Africa have emphasized the role of education and skills (e.g., Everatt and Sisulu 1992, Truscott 1993 and Van Zyl Slabbert 1994, Wittenberg and Pearce 1996, Mhone 2000, and Mlatsheni and Rospabe 2002). The goal of this paper is to analyze the relationship between human capital and transitions into the labor force using rich longitudinal data collected from a large sample of young people in Cape Town. The Cape Area Panel Study (CAPS) began following a cohort of 4,800 14-22 year-olds in 2002. As discussed in more detail below, in addition to rich data on employment, job search, and education, CAPS administered a literacy and numeracy evaluation that allows us to look directly at the impact of cognitive skills on the transition into employment.

In Section 2 we provide a broad overview of employment and education in South Africa and in Cape Town. In Section 3 we describe these data and analyze transitions from school into the labor market using the CAPS monthly employment data. In Section 4 we estimate hazard-rate regressions to investigate the role of grade attainment and test scores on the duration to first job after leaving school. In Section 5 we draw some conclusions.

2. Education and youth unemployment in South Africa

Table 1 presents several key indicators of education and employment for 20-24 year-olds in the 2007 South Africa Labour Force Survey, a national survey collected by Statistics South Africa. We present separate estimates for the three major population groups – African (black), coloured, and white. Under apartheid these three groups had very different access to schools and employment, with Africans the most disadvantaged, whites the most advantaged, and the mixed-race coloured group in an intermediate position.

Looking at education outcomes, Table 1 shows little difference in schooling attainment of Africans and coloureds, although both groups have roughly two fewer years of schooling than whites. It is striking that 19% of African women and 24% of African men are still enrolled in secondary school in the 20-24 age group, an indicator of high rates of grade repetition. As shown in Lam, Ardington, and Leibbrandt (2008), grade repetition is a serious problem in South African schools, especially for Africans. Coloureds are unlikely to be enrolled in secondary school beyond age 20, a reflection in part of higher opportunity cost of schooling due to better employment opportunities. Females have slightly higher schooling than males in all groups, a typical feature of South African schooling data (Anderson, Case, and Lam 2001, Lam, Ardington, and Leibbrandt 2008). Only 35% of African women and 29% of African men have passed the grade 12 matriculation exam, far below the 80% pass rate for whites.

Table 1 clearly demonstrates South Africa's severe youth unemployment problem. Official unemployment (requiring that individuals were actively looking for work) was 50% for 20-24 year-olds in 2007, with a rate of 65% using the broader definition that includes those who say they were willing to take a job. Table 1 also shows the enormous racial disparities in employment. Only 16% of African women and 25% of African men aged 20-24 had jobs,

compared to 49% of white women and 59% of white men. Since 1995 youth unemployment has risen, a result in part of rising participation rates among African youth who are entering the labor market at an earlier age and with higher educational attainment than in previous cohorts (Branson 2006).

Table 2 shows the economic activity of young people in Cape Town and in the rest of South Africa. The table also shows the racial breakdown of the Cape Town figures. As the rest of the country is dominated by Africans, the figures from the rest of the country are driven by Africans. In addition, the breakdown of whites and coloureds in Cape Town is very similar to that of the whites and coloureds in the rest of South Africa. Therefore we do not report racial breakdowns for the rest of the country. The table shows that the population group with highest proportion of youth engaged in studies is the white group (65%), followed by Africans (52%) and coloureds (43%). Also evident is the fact that a very small percentage of white youth are unemployed (4%) compared to African youth (28%) and coloured youth (22%).

3. Analyzing labor force entry using the Cape Area Panel Study

In this section we take advantage of the Cape Area Panel Study (CAPS), a longitudinal survey of young people in metropolitan Cape Town. Details about the design of CAPS, a collaborative project of the University of Cape Town and the University of Michigan, are available in Lam et al. (2008)[1]. Wave 1 of CAPS, which was collected in 2002, included 4,752 young people aged 14-22, living in 3,304 households. CAPS was designed as a stratified two-stage clustered sample with stratification on the predominant population group living in each sample cluster. CAPS oversampled areas classified as predominantly African and white in order to produce larger samples of African and white respondents than would be present in a simple

[1] Technical documentation and background information is available on the CAPS web site, www.caps.uct.ac.za.

random sample. As discussed above, Cape Town is the only major city in South Africa to have substantial numbers of white, coloured, and African residents, providing unique opportunities for the study of the changing nature of inequality after the abolition of apartheid.[2]

Wave 1 of CAPS contains two major sources of data. First, the survey includes a household questionnaire, in which demographic data on the entire household is collected. Second, the survey includes a detailed young adult questionnaire, which collects data on schooling, employment, and fertility of household members between the ages of 14 and 22. It also includes a basic numeracy and literacy skills test administered to each youth respondent. The results of this test will be used in the analysis below. CAPS youth respondents were interviewed a second time in either 2002 or 2003, a third time in 2005, and a fourth time in 2006. We use data from all waves in our analysis below, taking advantage of the retrospective reports on monthly employment and job search provided in each wave. Overall attrition between Wave 1 and Wave 4 was about 20%, with lower attrition among younger respondents and among the coloured sample, which has strong roots in Cape Town. The African attrition rate was about 25%, with most of the attrition resulting from migration back to the Eastern Cape, a predominantly rural province that serves as the main sending region for Africans living in Cape Town.

A major focus of this section is the comparison of transitions from school to work for African, coloured, and white youths. These three population groups were subject to very different treatment under apartheid. Many of these apartheid-era differences are likely to continue affecting young people in the post-apartheid period. Whites had advantages in a wide

[2] As in most South African household surveys, CAPS response rates were high in African and coloured areas and low in white areas. Household response rates were 89% in African areas, 83% in coloured areas, and 46% in white areas. Young adult response rates, conditional on participation of the household, were quite high, even in white areas. Given household participation, response rates for young adults were 93% in African areas, 88% in coloured areas, and 86% in white areas (Lam, Seekings, and Sparks 2006).

range of areas, including significantly higher expenditures on schooling, privileged access to the labor market, unrestricted residential mobility, and better access to most social services. Africans had the least access to services and the most restrictions on work and migration, with a large gap in expenditures on schooling. The coloured population, which is heavily concentrated in Cape Town, occupied an intermediate status under apartheid, with higher expenditures on schooling, fewer restrictions on residential mobility, and better access to jobs.

Patterns of youth employment

The large racial differences in transitions from school to work are demonstrated in Table 3, which shows three measures of work activity for CAPS respondents aged 19-20 and 21-22 in 2002. Columns 2 and 6 show the percentage of young people who were currently doing any work for pay or family gain at the time of the Wave 1 survey. Columns 3 and 7 show the percentage who did any work during the 12 months prior to the Wave 1 survey, while Columns 4 and 8 show the percentage who report having every done any work for pay or family gain. Work is defined broadly, and includes any work done during the year. Among 19-20 year-olds, only 8% of African females and 12% of African males were working at the time of the 2002 survey. This compares to 43% for coloured females and over 50% for the other groups. Looking at work over the previous 12 months only increases the racial gap in unemployment. While the proportion of African males working only rises from 12% to 17% when the window is changed form current work to work in the past 12 months, the proportion of coloured and whites working rises from around 50% to around 75%.

Perhaps even more striking is the proportion who say have ever had some kind of paid work. Only 15% of African females and 20% of African males aged 19-20 report having ever done any work, compared to 67% of coloured females, 83% of coloured males, and over 80% of white

males and females. By age 21-22, only 26% of African females and 37% of African males have ever worked, compared to 84%-96% for the other groups.

Table 4 provides additional information on both education and unemployment using CAPS Wave 4, which was collected in 2006. Table 4 uses the sample of respondents who were at least age 20 and had been out of school for at least 3 months. The table once again shows the large racial differences in employment outcomes using the sample of respondents age 20-26. Almost 60% of African men took over a year to find their first job, compared to 23% of coloured men and 15% of white men. About 40% of African men and 53% of African women took at least two years to find their first job. When they do get jobs, African men receive wages that are 58% the wages of coloured men and 30% the wages of white men. As shown in column 1, this partly reflects the lower education of Africans. Only 38% of African males and 39% of African females left school having completed grade 12. This compares to 54% for coloured males, 53% for coloured females, 85% for white males, and 76% for white females. Table 4 also shows the median reservation wage for each group. These are based on questions asked in each wave about "the lowest wage you would accept for any permanent full-time work?" Note that the median reservation wage for Africans is close to the actual median wage received, while the median wage is considerably higher than the median reservation wage for coloured and white respondents. Actual wages of African youth who get jobs are often lower than the reservation wage reported in previous waves, suggesting that their reservation wages may be unrealistically high relative to the actual labor market.[3]

[3] See Levinsohn, McCrary, and Pugatch (2009) for a structural analysis of the role of reservation wages in youth unemployment using CAPS.

Measures of human capital

In addition to a detailed schooling history, one of the interesting features of CAPS is the literacy and numeracy evaluation (LNE) that was administered to all youth respondents in Wave 1. This was a self-administered 45-question test that took about 20 minutes to complete. Respondents could take the test in English or Afrikaans. There was no version in Xhosa, the home language of most African respondents. The English language test was taken by 99% of African respondents, 43% of coloured respondents, and 64% of white respondents. In interpreting the results it is important to keep in mind that most white and coloured students took the test in their first language, while Africans took the test in a second language. It must also be noted, however, that English is the official language of instruction in African schools and is used for many tests such as the grade 12 matriculation exam. We use the literacy and numeracy scores scores as a measure of accumulated human capital cumulative learning at the time of the 2002 interview. Performance on the test reflects a combination of many factors, including innate ability, home environment, and the quantity and quality of schooling to that point.

Figure 1 presents kernel density estimates of the distribution of the standardized literacy and numeracy scores for each population group, using the sample of those who have are observed for at least 24 months since leaving school (each score is standardized to zero mean and unit variance for the full sample of 14-22 year-olds). Racial differences in test scores are striking. For both the literacy and numeracy scores there is only a small area of overlap between the test scores of Africans and whites, with a higher variance among Africans. The mean standardized score for Africans is well over a standard deviation below the mean for whites on both the literacy and numeracy components. The distribution of scores for coloureds sits between, with considerable overlap with both the white and African distributions. We will include these literacy

and numeracy scores below in regressions analyzing the hazard rate for finding the first job.

Employment transitions after leaving school

One of the unique features of the CAPS data is that we have collected monthly data on school, work, and job search covering the period from August 2002 through the time of the Wave 4 interview in 2006. These data are collected retrospectively in each wave of the survey. Figure 2 shows how these data can be used to follow the transitions of young people into the labor market after leaving school. The sample used in Figure 2 is all respondents who left school (identified as three consecutive months out of school) and were observed in the monthly calendars for at least 36 months since leaving school. The figure shows the proportion of males in each population group that were working in each month since leaving school, as well as the four months prior to leaving school. We look separately at African and coloured males and females. The sample size for whites is too small for this kind of detailed monthly analysis, although we will included them in the hazard regressions below. We further divide each group into those who left school with and without their grade 12 matriculation (matric) exam

Figure 2 clearly shows the returns to completing grade 12 and the large employment advantage of coloureds compared to Africans. As shown in the top panel of Figure 2, about 45% of coloured men who left school with matric were working in the first month after leaving school (typically January after the end of their last year in school). This compares to about 20% of coloured men without matric. Note that about 30% of coloured men with matric were already working during the last four months before leaving school, compared to about 10% of coloured men without matric and essentially 0% of African men.

The percentage of coloured men working rises rapidly during the first 6 months out of school, reaching about 70% after 6 months for those with matric and about 35% for those

without matric. African men start at a much lower base, both with and without matric. After four months out of school less than 15% of African men are working, with or without matric. Africans with matric appear to do no better than Africans without matric for the first 12 months, but those with matric begin to catch up with the coloured non-matric group beginning around 20 months. One important lesson of Figure 2 is that dropping out of school in order to work is a relatively unimportant cause of leaving school for Africans. Africans without matric continue to find jobs at a relatively slow rate in the next two years, with only about 30% working in month 24 and only slightly more working at month 36 (note that the sample remains constant across months, being restricted to those who were out of school for at least 36 months).

The bottom panel of Figure 2 shows the transitions into employment for women. Once again we see both a large return to leaving school with matric and a large coloured advantage relative to Africans. One difference for women is that African women with matric look very similar to coloured women without matric for the full 36 month period. This is in contrast to the pattern for males in which African males with matric do not even do as well as coloured males without matric for the first 20 months after leaving school.

4. Modeling transitions to work

CAPS has a rich set of information about young people and their households that can be used to analyze the determinants of early labor market success. In this section we present the results of survival time analysis in which we analyze the transition between leaving school and the first job. In order to reduce measurement error and focus on "real jobs," we define the first job as the first period of employment that lasts at least three consecutive months. Those who already have jobs when they leave school are considered to have found a job in the first month.

The duration model analysis is based on the same monthly work histories used to construct Figure 2. Table 5 presents summary statistics for the dependent and independent variables in the regressions. The sample consists of all CAPS young adult respondents who were out of school from zero to 48 months, with an observation corresponding to one person-month. The total number of individuals contribution person-months is 1,950, a little under half of the original CAPS sample. The total number of person-months observed is 42,156.

As shown in Table 5, the mean of the monthly "currently working" variable is 0.48, implying that our sample was working roughly half of the months observed during their first 48 months out of school. This varies from only 29% for Africans to 70% for whites. Large differences in schooling are also evident. Only 36% of Africans having passed matric compared to 44% of coloureds and 68% of whites. Another 36% of Africans left school with grade 10 or 11, with the reminder having left school at grade 9 or below.

As noted above, one interesting feature of CAPS is the literacy and numeracy evaluation (LNE) administered in Wave 1. As shown in Lam, Ardington, and Leibbrandt (2008), the LNE scores are strong predictors of progress through secondary school. The LNE scores in Table 5 (standardized to a mean of zero and standard deviation of one for the full CAPS sample) show enormous racial differences in test scores. The mean combined score for Africans is -0.45, 0.7 standard deviations below the mean for coloureds and over 1.5 standard deviations below the mean score for whites. Africans also have higher variance, as was seen in Figure 1. Table 5 also shows separate scores for the numeracy and literacy components of the exams. These will be used in the hazard regressions below.

Hazard regressions for duration to first job

In this section we present results for our survival time analysis of duration to first job after leaving school. We use a proportional hazard model assuming a Weibull distribution for the baseline hazard. Table 6 presents the results in the form of hazard ratios. Standard errors are adjusted to account for correlated errors at the individual level. Regression 1 only includes dummies for African and white (coloured is the omitted category), a dummy for male, and a quadratic in monthly age. Africans have a 35% lower monthly hazard of finding their first job relatively to coloureds, while whites have a 355 higher monthly hazard. Males have a 30% higher hazard. The estimate of ln(p), based on the Weibull hazard, implies that the hazard rate for finding employment decreases with time, a typical result for employment duration models. This may reflect heterogeneity in workers, with the best workers finding jobs first, rather than a real duration dependence in the probability of finding employment.

Regression 2 adds schooling variables. The schooling variables in the regression indicate the highest grade attained at the time the respondent left school, with schooling Grade 9 or below as the omitted category. The point estimate implies a slightly positive effect of having completed grade 10 or 11, but the effect is not statistically significant at conventional levels. There is a large effect of completing grade 12 (implying that the respondent passed the standardized matriculation exam). There is a 69% higher hazard rate of finding the first job for a young person who left school with matric or higher, compared to leaving with less than grade 10. In contrast to the view sometimes expressed in South Africa, completing secondary school does appear to have a substantial effect on successfully finding a job after leaving school.

One important question in analyzing the impact of human capital on labor force transitions is whether the effect differs by race. Regression 3 adds interactions between the matric dummy

and the African and white dummies. The matric*African interaction is 0.97, very close to 1.0, and we can certainly not reject that it is equal to 1.0. This implies that there is no significant difference in the return to matric for Africans and coloureds in finding employment. The matric*white interaction is 0.67, implying lower returns to matric for whites, although we cannot reject that white and coloured returns are equal.

In Table 3 we look at the impact of literacy and numeracy scores on the duration to first job. In Regression 1 we add the combined scores on the literacy and numeracy components, standardized to the full CAPS sample. We see that the test score is a strong predictor of early labor force outcomes. A one standard deviation increase in the test score is associated with a 19% increase in the hazard rate of finding a job. Controlling for the LNE score reduces, but by no means eliminates, the estimated impact of schooling. The hazard ratio for completing Grade 12 drops from 1.69 in Regression 2 of Table 6 to 1.48 in Regression 1 of Table 7.

Regression 2 in Table 7 explores whether the literacy or numeracy component of the LNE score is more important in labor force transitions. Interestingly, we find that there is essentially no effect of the literacy component of the score on the hazard rate of finding a job. All of the effect seems to work through the the numeracy score. A one starndard deviation increase in the numeracy score is associated with a 20% increase in the hazard rate.

Figure 3 plots the hazard rates for coloured and Africans with and without matric, based on Regression 3 in Table 6, the regression that allowed interactions between matric and race. These must be proportional due to the proportional hazards assumption, but the figure demonstrates the shape of the hazard implied by our estimates over the first four years after leaving school. The hazard is much higher immediately after leaving school, dropping by about half from month 1 to month 48. The figure clearly demonstrates the enormous impact of matric implied by our

estimates, and also shows the large gap between Africans with matric and coloured without matric.

5. Conclusion

This paper takes advantage of longitudinal data from the Cape Area Panel Study (CAPS) to analyze the impact of human capital on the duration between leaving school and finding a job in in metropolitan Cape Town. CAPS data show that only 25% of African men aged 21-22 were working at the time of the CAPS Wave 1 interview in 2002, and only 37% had ever worked for pay. In contrast, 91% of coloured men and 95% of white men had ever done work for pay in 2002. Using CAPS to look at month-by-month transitions from school to work, we see that coloured youth are much more likely to be working during the last four months before leaving school than are African youth. The monthly transitions also suggest an important role of human capital, with much higher employment rates among those who completed matric.

Our hazard-rate regressions provide strong evidence about the importance of schooling and ability in early labor market outcomes. We estimate significant effects of grade attainment schooling on the hazard rate of finding employment during the first 4 years after leaving school. Those who leave school with Grade 12 or higher have hazard rates of finding employment that are almost 70% higher than those who didn't reach grade 10. When we include the results of the literacy and numeracy test that was administered to CAPS respondents in 2002, we estimate a large impact of the test score on the probability of finding work. Including the LNE score reduces the estimated impact of completing Grade 12, though the impact is still large. It appears that a significant part of the apparent impact of schooling is captured by our measure of ability. This may indicate that employers do not use schooling alone as a signal, but are also able to discriminate on the basis of ability. These scores do not provide a direct measure of ability in the

sense that the LNE scores themselves are driven by a mix of ability, schooling and life experience up to the time that the test was taken in 2002 (Lam, Ardington and Leibbrandt, 2007). Thus, although the inclusion of this variable in the regression cuts the direct impact of completed schooling, embodied in this variable is a longer-run legacy of disadvantaged schooling. In particular, the large racial differences in the LNE scores may reflect large differences in school quality, differences that may be contributing to the large racial differences in early labor market success.

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Table 1. School and work outcomes of 20-24 year-olds, Labour Force Survey 2007

Group	Sample size	Years of schooling	Enrolled in secondary school	Passed grade 12	Enrolled or completed tertiary	Working	Unemployed (official)	Unemployed (broad)
African female	180,617	10.16	18.6%	34.8%	7.9%	15.9%	62.5%	76.5%
African male	159,054	9.78	23.8%	29.1%	7.7%	25.2%	48.8%	62.3%
Coloured female	30,472	9.99	2.3%	36.8%	7.9%	38.5%	40.7%	54.2%
Coloured male	27,456	9.54	2.7%	30.9%	5.0%	55.0%	29.6%	38.7%
White female	12,558	12.02	1.7%	81.0%	45.8%	48.6%	15.5%	23.6%
White male	12,271	11.88	1.9%	77.8%	42.7%	59.2%	12.1%	15.5%
Total	422,428	10.02	18.2%	34.0%	9.0%	24.7%	49.9%	64.5%

Table 2. Employment Status of 15-22 Year-Old Youth in Cape Town and the Rest of South Africa, 2001 census

Employment Status	Cape Town				Rest of the Country	
	African	Coloured	White	Total	All	Urban
Employed	10%	23%	26%	19%	8%	10%
Unemployed	28%	22%	4%	21%	17%	21%
Scholar or student	52%	43%	65%	49%	59%	57%
Home-maker or housewife	1%	2%	1%	1%	1%	1%
Pensioner or retired	0%	0%	0%	0%	0%	0%
Unable to work	1%	1%	1%	1%	1%	1%
Seasonal worker not working	0%	1%	0%	1%	1%	1%
Does not choose to work	3%	4%	2%	3%	6%	5%
Could not find work	5%	5%	1%	4%	7%	5%
Total	100%	100%	100%	100%	100%	100%

Source: 10% Microsample of the 2001 Census

Note: This table covers ages 15-22 because employment status is captured for those 15 years and older in the 2001 census.

Table 3. Percentage currently working, worked in last 12 months, and ever worked,

	Age 19-20 in Wave 1				Age 21-22 in Wave 1			
Population group	N	Currently working (%)	Worked in last 12 months (%)	Ever worked (%)	N	Currently working (%)	Worked in last 12 months (%)	Ever worked (%)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
African female	305	7.9	11.6	14.6	248	13.2	21.8	26.2
African male	236	11.9	17.5	20.1	198	25.5	31.6	37.1
Coloured female	212	42.6	58.1	66.7	205	50.9	70.3	84.2
Coloured male	204	52.3	73.2	83.1	138	62.5	80.0	90.9
White female	60	54.8	76.2	85.9	70	59.5	77.3	93.7
White male	59	56.2	76.6	81.7	41	63.0	89.6	95.6
Total	1076	37.1	51.5	58.4	900	45.8	61.6	71.7

Table 4. Employment and wage variables for school-leavers age 20+, CAPS Wave 4

Group	Completed Grade 12	Employed at survey	Unemployed at least: 1 year	Unemployed at least: 2 years	Median wage	Median reservation wage
African male	0.377	0.579	0.557	0.397	1400.0	1299.9
African female	0.393	0.411	0.658	0.531	1188.3	1299.9
Coloured male	0.540	0.707	0.227	0.070	2413.9	1719.1
Coloured female	0.532	0.665	0.358	0.157	2177.0	1711.6
White male	0.849	0.774	0.152	0.192	4706.8	2569.2
White female	0.762	0.857	0.188	0.167	4288.3	2612.4

Note: Sample is respondents at least age 20 who were out of school at least 3 months. Employed is working for pay. Unemployment indicators for unemployed 1 or 2 years before first job, conditional on leaving school and being observed for at least 1 or 2 years. Median wage and reservation wage are monthly.

Table 5. Descriptive statistics for variables in probit regressions, CAPS respondents followed out of school at least 48 months, 2002-2006

Variable	African	Coloured	White	Total
Currently working	0.29 (0.45)	0.52 (0.50)	0.70 (0.46)	0.48 (0.50)
Male	0.47 (0.50)	0.47 (0.50)	0.51 (0.50)	0.48 (0.50)
Left school with grade 10 or 11	0.36 (0.48)	0.28 (0.45)	0.23 (0.42)	0.29 (0.45)
Left school with matric or higher	0.36 (0.48)	0.44 (0.50)	0.68 (0.47)	0.45 (0.50)
Literacy and numeracy score	-0.45 (0.86)	0.22 (0.80)	1.14 (0.64)	0.16 (0.92)
Literacy score	-0.41 (0.98)	0.33 (0.71)	0.82 (0.48)	0.20 (0.86)
Numeracy score	-0.41 (0.79)	0.11 (0.91)	1.20 (0.75)	0.11 (0.98)
Months since leaving school	14.1 (10.3)	15.5 (11.0)	13.4 (10.0)	14.9 (10.7)
Age	21.3 (2.1)	20.1 (2.1)	20.9 (2.2)	20.5 (2.2)
Age squared	458.7 (90.2)	408.4 (85.6)	441.5 (94.1)	425.1 (90.6)
Number of individuals	862	913	175	1,950
Number of person-months	17,406	21,609	3,141	42,156

Note: Standard deviation in parentheses; descriptive statistics use sample weights

Table 6.
Weibull proportional hazards regression
Months until first job after leaving school
CAPS respondents out of school at least 48 months

	(1)	(2)	(3)
Male	1.299***	1.285***	1.285***
	[0.090]	[0.090]	[0.090]
African	0.351***	0.387***	0.390***
	[0.025]	[0.028]	[0.037]
White	1.348**	1.214	1.607**
	[0.18]	[0.17]	[0.32]
Age	2.994***	2.073***	2.130***
	[0.79]	[0.56]	[0.59]
Age squared	0.978***	0.986**	0.986**
	[0.0063]	[0.0065]	[0.0066]
Grade 10 or 11		1.12	1.099
		[0.11]	[0.11]
Matric or higher		1.687***	1.739***
		[0.17]	[0.21]
Matric*African			0.971
			[0.13]
Matric*White			0.678
			[0.18]
ln(p)	0.795***	0.818***	0.817***
	[0.015]	[0.017]	[0.017]
Observations	20,967	20,606	20,606

Robust standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1
Omitted categories: Grade 9 or less; Coloured.

Table 7.
Weibull proportional hazards regression
Months until first job after leaving school
CAPS respondents observed out of school at least 48 months

	(1)	(2)
Male	1.243***	1.217***
	[0.087]	[0.087]
African	0.429***	0.417***
	[0.034]	[0.034]
White	1.046	1.016
	[0.15]	[0.15]
Age	1.999***	2.064***
	[0.54]	[0.55]
Age squared	0.987**	0.986**
	[0.0064]	[0.0064]
Grade 10 or 11	1.057	1.059
	[0.11]	[0.11]
Grade 12 or higher	1.479***	1.485***
	[0.16]	[0.17]
LNE combined	1.187***	
	[0.061]	
LNE literacy		0.976
		[0.057]
LNE numeracy		1.201***
		[0.066]
ln(p)	0.825***	0.827***
	[0.017]	[0.017]
Observations	20,469	20,469

Robust standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1
Omitted categories: Grade 9 or less; Coloured

Figure 1.

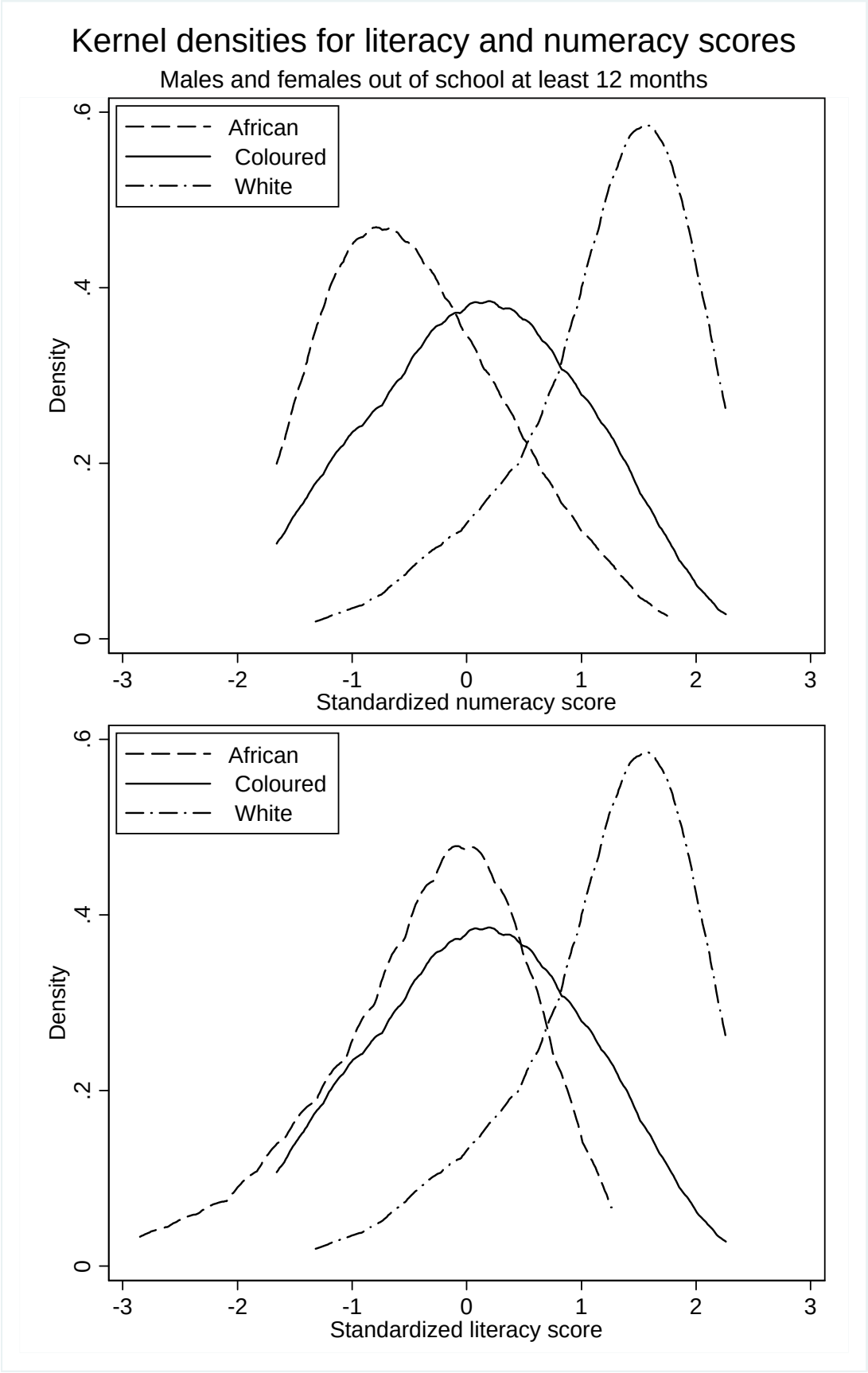
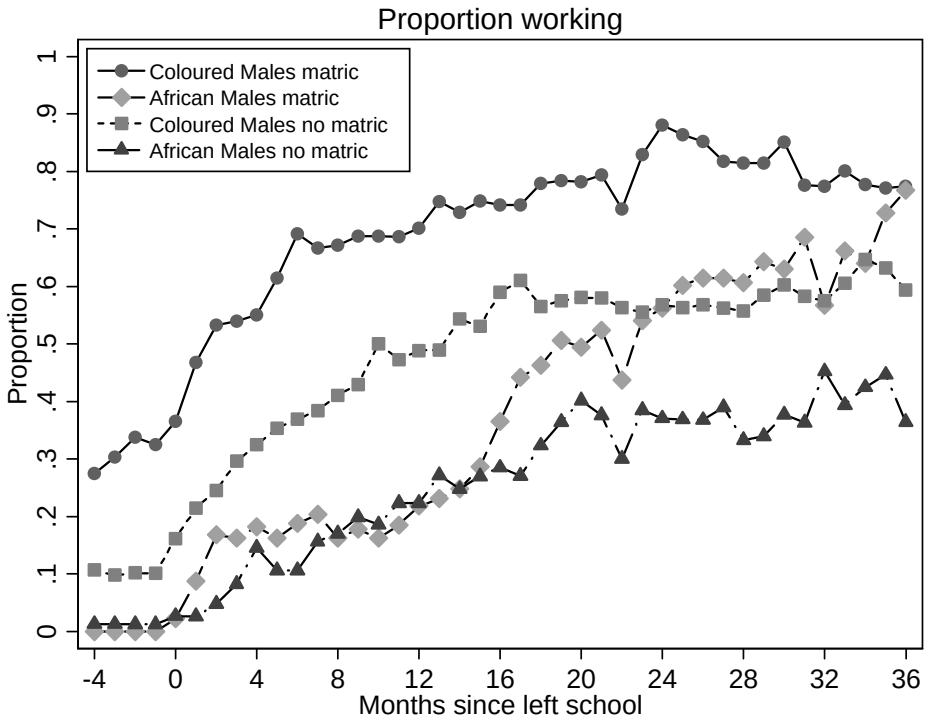

Kernel densities for literacy and numeracy scores
Males and females out of school at least 12 months
African
Coloured
White
Density
0
.2
.4
.6
-3
-2
-1
0
1
2
3
Standardized numeracy score
African
Coloured
White
Density
0
.2
.4
.6
-3
-2
-1
0
1
2
3
Standardized literacy score

Figure 2.

Proportion working by months since left school

Males and females out of school at least 36 months



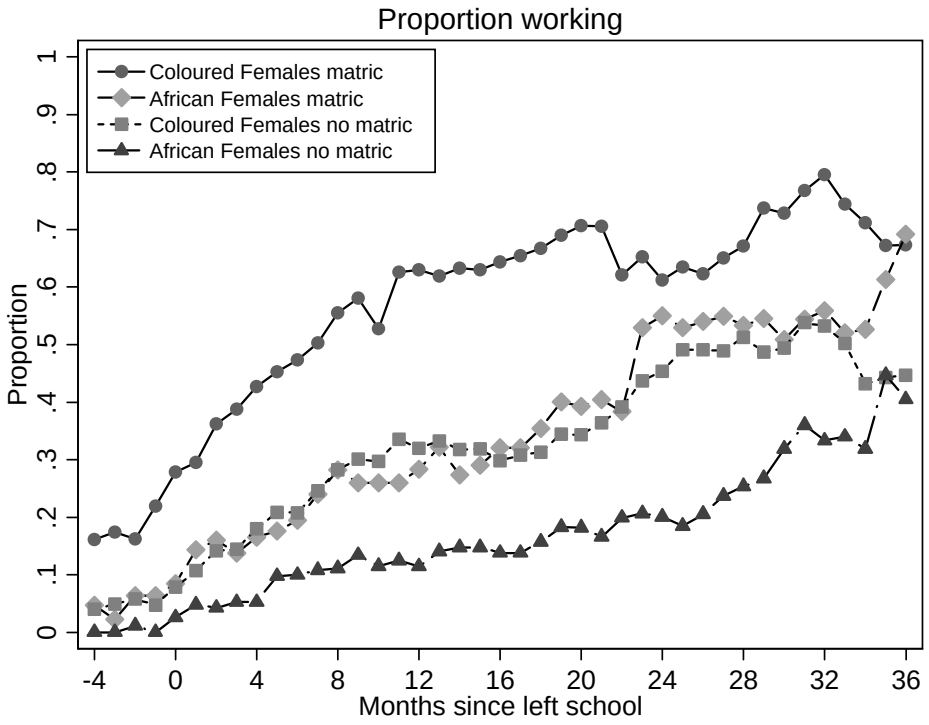
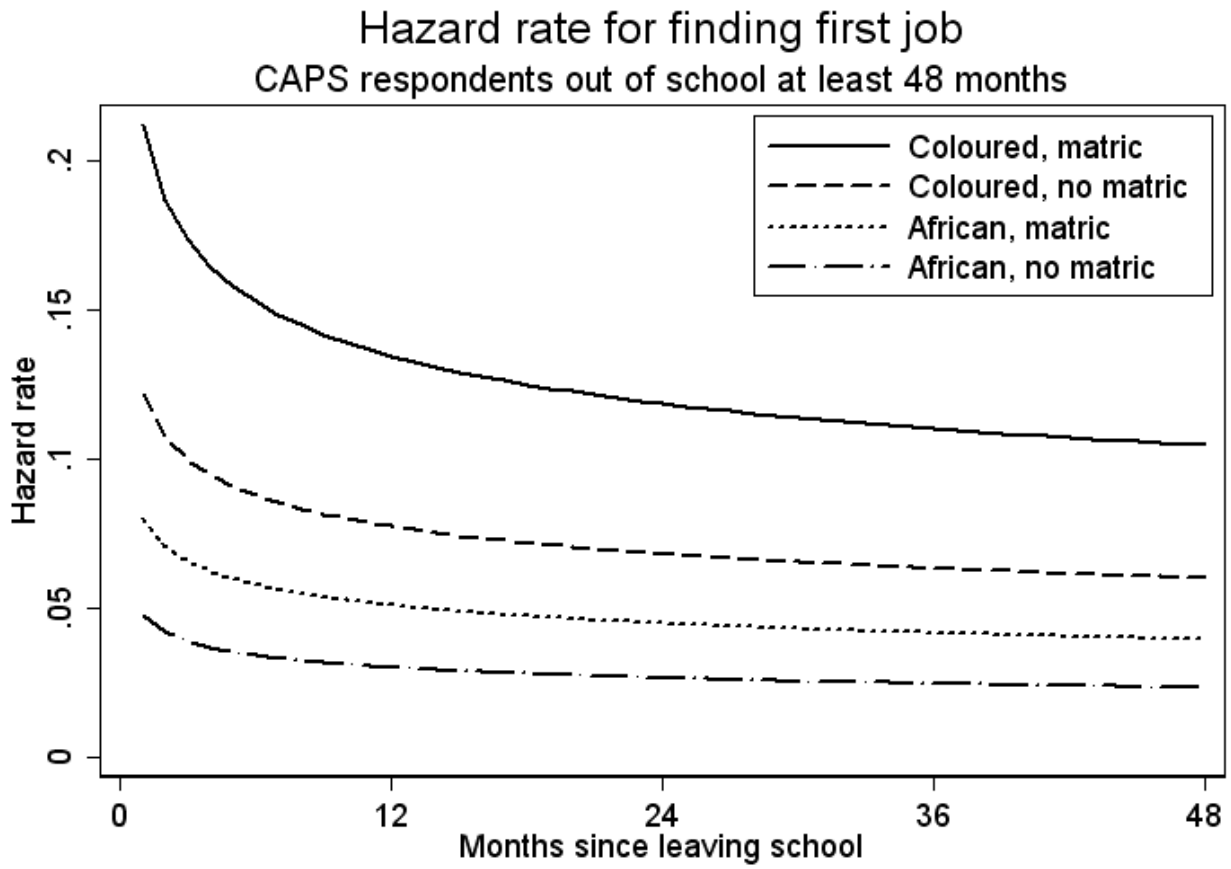


Figure 3.


Hazard rate for finding first job
CAPS respondents out of school at least 48 months
Coloured, matric
Coloured, no matric
African, matric
African, no matric
Hazard rate
0
.05
.1
.15
.2
0
12
24
36
48
Months since leaving school