

Youth labour market dynamics in South Africa: evidence from NIDS 1-2-3

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Abstract

The South African youth unemployment rate is extremely high, at well over 50% of youth using the narrow definition of unemployment. This high unemployment rate has been a chronic problem and has been at these or similar levels since the democratic transition in 1994. Unemployment rates were probably also very high for a substantial period before 1994, but the lack of suitable data from that period makes precise measurement of the unemployment rates for that era quite impossible. We make use of the first three waves of the nationally representative longitudinal dataset obtained from the National Income Dynamics Study, to explore the factors that assist school leavers in finding employment. By means of descriptive statistics and regression analyses, we estimate the differences in job finding rates by gender, geographical location, educational attainment, household structure and migration status. Our results are not particularly surprising. Male youth, better educated youth, and youth who migrate from rural areas to urban areas tend to have better job prospects on leaving school.

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1. Introduction

The youth unemployment rate in South Africa is approximately double that of the general adult unemployment rate and the general unemployment rate is also extremely high from a global comparative perspective. Moreover, these unemployment levels have been a chronic feature of the South African economy since the transition to democracy in 1994. Unemployment rates were probably also very high for a substantial period before 1994, but the lack of suitable data from that period makes precise measurement of the unemployment rates for that era quite impossible.

In this paper, we make use of nationally representative longitudinal data from the first three waves of the National Income Dynamics Study (NIDS), and focus on young people who were still enrolled in school in the first wave. We are thus interested in their different trajectories in terms of finding employment as they leave school. Finding a first job can be a particularly challenging task for youth, due to a mixture of lack of experience and employer perceptions of low quality schooling.

The major advantage of using longitudinal data relative to cross-sectional data is that we can observe several background characteristics about the youth in our sample, and see how their experiences in entering the labour market differ based on these characteristics. In contrast, in a cross-section, we only observe the employment rates of youth, without knowing how long it took them to find employment or what their original home environment might have been like. We also obtain a sense of the security of employment for youth through an analysis of labour market transitions between the three waves of NIDS. Finally, we estimate multivariate regression models to determine the factors that correlate with an increase in the likelihood of some individuals finding employment over others.

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Our overall findings are not surprising. We find that better educated people are more likely to be employed and to find jobs faster upon leaving school. Males have a distinct advantage in finding employment relative to females. People from urban areas are also relatively advantaged in terms of their labour market entry experiences, and of those who were originally from rural areas, migrating to an urban area is one pathway that facilitates finding employment.

The remainder of this paper is structured as follows. In Section 2, we provide an overview of the evolution of youth employment and entry into the labour market, including a discussion of some of the relevant literature. In Section 3, we provide some background and context by briefly summarizing the labour market outcomes of youth based on nationally representative cross-sectional data. Section 4 describes the dataset, sample selection and variables that we use in our analysis. In Section 5, we document the empirical methods that we use, and in Section 6 we present our results. Section 7 contains a concluding discussion; including some insights that our research generated that may be of use for policy makers.

2. A brief overview of the evolution of the youth unemployment challenge in South Africa

The challenge of significantly high youth unemployment in South Africa is a by-product of the longstanding feature of the significantly high level of unemployment in general. The earliest post 1994 review of the South African labour market is the 1996 ILO country review by Standing et al. (1996), who report that most analysts agree that unemployment rose sharply in the 1970s and that this rise continued through the 1980s and 1990s. The Current Population Survey (CPS) estimated that the strict unemployment rate in 1970 was 12% and that in 1980 it was 20%. However, comparable figures for 1990 are not available as the CPS was discontinued because its credibility had been brought into question. In 1991 estimates using Population Census data reported unemployment of 19%. The Southern Africa Labour and Development Research Unit survey of 1993, using the broad definition (widely regarded as the more appropriate definition), placed unemployment at 30%.

Furthermore, many of the current troubling issues with regard to the nature of unemployment were evident even prior to the mid-1990s. One example of such issues is the labour absorptive capacity of the economy, which is the percentage of new labour market entrants employed in any given year. The labour absorptive capacity of the South African economy was above 90% in the 1960s, it fell to 15% in the 1970s and 1980s, it was negative between 1991 and 1993, and it rose again to 7% in 1995 (Standing et al., 1996). Similar results were reported by Loots (1996) and Ligthelm and Kritzing-Van Niekerk (1990).

Another longstanding undesirable issue is that of high unemployment duration. In the mid-1990s findings were that nearly two thirds of the unemployed had never worked for pay (Standing et al., 1996). This feature of the unemployed has persisted as recent datasets such as the Quarterly Labour Force Surveys indicate significant numbers of unemployed individuals who have either never been employed or have unemployment durations stretching into years (Statistics South Africa 2015). In sum, chronic unemployment is not a recent feature of the South African labour market. Instead, there has been a continuation of a negative trend of the economy struggling to beat unemployment.

Research focusing on youth unemployment also has precedents. However, improvements in the quality of available data (pioneered by the SALDRU 1993 household survey) changed the landscape of research into youth labour market participants and indeed labour market participants in general. Studies of youth unemployment prior to the mid- 1990s (see Everatt & Sisulu, 1992; Truscott 1993; Van Zyl Slabbert, 1994 among others) have mainly focused on two issues. Firstly, they have detailed the reasons why the circumstances of youth are bleak. Account is given of the role that youth played in the fight against apartheid and how this led to social disintegration. There is also discussion of the deficiency in the education of these youths and its likely negative effect on their employment prospects. There is much debate in this literature of whether the youth is a 'lost generation', whether it is in 'crisis', and its state of being marginalised (Van Zyl Slabbert, 1994). Of course, some of the youth of the late 1980s are now among the 40 plus year olds whose employability is often debated. Secondly, this literature has also focused on finding solutions to the huge problem of youth joblessness. There is discussion of training programmes and possible reasons for their failure (Truscott, 1993) as well as recommendations of public works programmes. The literature of the subsequent period (see Bhorat & Oosthuizen, 2005; Mhone, 2000; Mlatsheni & Rospabe, 2001; Wittenberg & Pearce, 1996) has made good use of the household surveys and the censuses to provide more detailed information about the characteristics of youth and the nature of their labour market participation and outcomes.

A key challenge faced by youth is that of making a successful transition to adulthood. What constitutes a successful transition is likely to vary from individual to individual and factors such as socio-economic background and cultural norms are likely to play a role. In general, a key objective is to achieve independence and for many to ultimately form a family and to support that family. It is generally accepted that the amount of human capital acquired has a strong influence on meeting these objectives. A greater degree and quality of education both aid a smooth transition from schooling to work. However, the reality is that youth often experience difficulty entering the labour market for various reasons and these will be

discussed in more detail below, with reference to South Africa. For example, job search and its success depends on the availability of jobs, the kind of jobs that are available and also the proximity of these jobs. These factors intersect with the level and quality of education of these young work seekers. Physical and mental health is also a concern. Single parenthood and poor physical health can inhibit labour market participation. These factors along with the stress of not finding employment may give rise to de-motivation and depression which, in turn, further hamper effective labour market participation. Given that this is the situation confronting youth as they consider entering the labour market, it can also be a useful angle from which to assess policy initiatives directed at facilitating youth labour market entry².

2.1 Demand side factors that influence labour market success

A major influence on youth employment is the extent of job availability while another related influence is the nature of that employment. Economic conditions and the structure of the labour market have an important bearing on the probability of securing employment. Chief among the macroeconomic determinants of youth unemployment is aggregate demand (O'Higgins, 1994). When an economy is in a slump or is not growing at a fast enough pace, employment creation tends to be dampened. Under such circumstances, any attempts to increase the extent of youth labour market preparedness and employability would fail to significantly increase overall youth employment in the short term.

The 2000s are evidence of the importance of aggregate demand within the South African context. The early to middle 2000s was a time when the South African economy was growing relatively well in comparison with other available periods. The growth rate of GDP was on an upward trajectory in the early to mid-2000s, peaking above 5% per annum. A number of economic shocks rocked the global economy subsequently such that the South African economy was also adversely affected. The economy was already beginning to slow down at the time of the 2008-09 recession and it subsequently went into recession. The negative effects of the global economic shocks were dampened by prudent macroeconomic policies. Nevertheless, South Africa lost close to 1 million jobs during the 2008-09 recession (IMF, 2011). In addition to this, by 2011 the ratio of employment to the working-age population had declined from around 45% in 2008 to 40% in 2011, implying that employment had remained below the pre-crisis level. The labour market has therefore remained in a relatively depressed state.

² These issues are beyond the scope of this paper but are nevertheless important to consider for future research.

The effects of the 2008-09 global recession served to reverse any employment gains that had been made in the earlier period of peak economic growth. It is only in 2013 that employment levels returned, for the first time, to the levels of 2008. The lack of sustained economic growth has led to the overall unemployment rate consistently hovering around 25%.

One could argue that inadequate aggregate demand is as much an obstacle to non-youth employment as it is to youth employment because a fall in aggregate demand would lead to a general increase in the number of lay-offs and a fall in new hires. However, to the extent that the nature of the employer-employee relationship is different for youth and non-youth, the influence of aggregate demand on employment would be different for youth and adults. The opportunity cost to employers of firing youth is lower than that of firing adults partly because youth are less likely to be unionised or protected by legislation (Rees 1986) and past investment in them by the employer is likely to have been lower.

2.2 Supply side factors that influence labour market success

Education

Global evidence confirms that generally the higher the level of educational attainment of youth, the higher the probability of them finding employment (World Development Report, 2007). In the case of South Africa, the strongest effects are observed post matric though (Altbeker & Johnston 2013, Bhorat et al. 2014, Leibbrandt & Mlatsheni 2015). However, as will be shown in our analysis, even youth who have only completed secondary schooling do not necessarily fare well in the labour market. This should send a signal to youth that they should aim to acquire as much education as possible in order to improve their chances of employment. Furthermore, education plays an important role not just in finding employment but also in the ability to create employment. The 2006 Global Entrepreneurship Monitor reported that their sample reflected that in South Africa the potential of tertiary educated adults to create employment was 2.5 times greater than those who only completed secondary education, and 11 times greater than those who have not completed secondary education. At the same time, many youth quit their studies and enter the labour market prematurely for various reasons. This premature labour market entry is a cause for concern especially given that even youth with post-matric tertiary qualifications are not guaranteed employment. These findings suggest that there is a problem with youth's work-readiness upon entering the labour market and that close attention needs to be paid to education and training policies in order to address this problem. The rate of completion of secondary schooling is a cause for concern, so are the grades achieved in matric and also the limited success achieved by training initiatives. (For more detail see Bernstein et al. 2016).

A young person from a background of relative deprivation in South Africa, faced with a decision of either continuing studies or dropping out, would be influenced by a number of factors in making his or her decision. According to the literature, three theories are thought to play a part in such decision-making. The first is the status attainment theory, which posits that the amount of education a young individual aspires towards is a function of status-specific values as well as the influence of significant others in the individual's life (Sewell et al., 1970; Spaeth, 1968). The second theory is known as the resource constraint theory and it suggests that educational aspirations depend on perceptions of opportunity structures, evaluated according to relative direct costs (Kerckhoff, 1974). Human capital theory as espoused by Becker (1964) and Mincer (1974) is a third theory explaining the choice between continuing studies and opting for work. The premise of this theory is that educational attainment is the result of individual choice, which is informed by perceptions of the future wage returns on investment in education. While the human capital theory has its origins in economics, the other theories emanate from sociology.

In the South African context, many youth see the value of education but are faced with limited resources to pursue post-secondary schooling qualifications. Even those individuals who could find means to finance further education may opt for earlier labour market entry and thus a low pay, mediocre job in order to supplement family income, especially when there are younger siblings in need of support.

This premature labour market entry is a serious labour market challenge for youth in many developing countries (ILO, 2006). Working while at school can be beneficial when done in moderation and is to be distinguished from premature labour market entry, which is quitting school in order to look for work. Working while at school can foster such positive traits as dependability, self-confidence, punctuality, an increased understanding of consumer and money matters, and generally ease the transition from school to work (Meyer & Wise, 1982). It may also help finance secondary and tertiary education. However, the danger with working while at school is that if it is not carefully managed it can lead to premature dropping out of studies. In the South African context, premature exit out of schooling does not happen on a large scale, however, failure to satisfactorily complete secondary schooling and to advance to further studies does. This failure affects later productivity while the forgone earnings and lack of skill accumulation may make it difficult to escape poverty. The benefits of schooling are recognised worldwide, as international evidence suggests that across 61 developing countries the average return per year of schooling is 7.3% for men and 9.8% for women (World Development Report, 2007).

The discussion above highlights the importance of skills acquisition to favourable employment outcomes for youth. Failure to acquire appropriate human capital can jeopardise the probability of finding decent and stable employment and can result in lengthy bouts of unemployment. Evidence from 60 developing countries suggests that youth spend on average 1.4 years in temporary jobs and intermittent spells of unemployment before finding stable employment, but there are wide variations across countries ranging up to four years (World Development Report, 2007).

The high unemployment duration as in the case of South Africa often leads to discouragement of youth such that a portion of them are neither in school nor work, the NEETs. In more developed countries such as the US and Canada, youth in times of increased joblessness increase uptake of training, they stay longer in school and they extend the period living with parents. These options are not always available in the developing country context such as that of South Africa. The lack of viable options often encourages criminal activity even in developed countries. In France, crime rates increase and in the US the probability of incarceration increases as joblessness increases (Topel & Ward, 1992).

Job search: networks, geographical isolation and perceptions of opportunity

In the absence of a formalised system of facilitating the transition from schooling to work, the issue of employment search becomes very important. In the developed world context of relatively low rates of joblessness, a lack of active job search is almost exclusively viewed as being voluntary and underpinned by reservation wage considerations. In the South African context of mass unemployment, inactive job search may be due to financial constraints that are brought about by high costs of active job search accompanied by a low probability of finding employment. These considerations bring to the fore the issue of the availability and use of networks in finding employment. Youth who work while at school are likely to have a better-developed system of networks when they enter the labour market fully.

Findings are that networks are the most popular and effective ways of obtaining jobs, however, the networks possessed by Black youth are likely to be less productive in securing employment. Indeed, there is some international evidence that Blacks achieve greater success with formal methods than with informal ones because informal methods involve fewer explicit or objective criteria of judgement (Rees, 1986). In this instance, informal job search methods are those that involve friends and relatives and direct applications to firms through walk-ins without referral. Methods that are more formal include employment agencies, responding to newspaper advertisements, and government employment facilitating

initiatives. Given that entrepreneurship is not the first choice of most youth (they would rather find a job and be guaranteed wages), policy should also focus on facilitating job search. For this to take place effectively there needs to be an understanding of youth job search strategies and experiences as spelt out below.

Networks and social capital

The importance of networks in securing employment cannot be overemphasised. Evidence from a range of surveys conducted in the early 2000s indicates that most people get jobs through friends and relatives. The Khayelitsha/Mitchell's Plain Survey (KMPS) conducted in Cape Town in 2000, for example, reveals that more than half of the respondents obtained their current job through friends and relatives. The Cape Area Panel Survey also indicates that by far the most common method of obtaining employment for youth is through networks in the form of friends and relatives. Interestingly, these datasets reflect that even though most young individuals obtain employment through networks, relatively few claim to use this as the main method when searching for work.

Geographical isolation from employment

Another reason that many youth do not actively search for work is the inability to access areas that could potentially provide employment. This factor predominantly affects Black youth, as townships are often situated far from business centres. The formal exposition of the effects of distance on labour market outcomes was first given by Kain (1968) as the "spatial mismatch hypothesis". In the US context, the location of jobs was becoming increasingly decentralised and poor minority households (mainly Black) were being left behind in central cities through constraints in housing choices. These developments decreased the employment prospects of the individuals concerned through decreased job access and subsequent earnings.

The South African situation is similar in that individuals from poor households (mainly Black) are far from where jobs are located. However, the difference in South Africa is that it is the jobs that have historically been concentrated in the cities while location of poor households has been on the outskirts. A single trip from a township to seek work in a city or industrial centre would easily cost R10–R20, a great deal to an unemployed person. Indeed, data from the March 2005 Labour Force Survey (LFS) in Table 4 reveals that of those individuals (aged between 16 and 30 years) who did not seek employment or start their own business, 49% said it was because there were no jobs in their area, while 23% said that they lacked the money necessary to look for work. Taken together, over 70% of non-searchers indicated that their

location constrained them from looking for work, as lack of money to search is brought about by lack of proximity to employment sources.

The 'spatial mismatch hypothesis' has continued to receive attention within the international literature (Kain, 1992; Holzer, 1991). In the South African context part of the solution would be to move jobs closer to labour sources, a feature that is already taking place in certain areas³. In the US context, it would be difficult to move poor minority households from the central cities towards the decentralised jobs and it would thus be a useful exercise to see how the US has approached this problem.

Perceptions of opportunity

It is logical that youth perceptions of the labour market have a strong effect on the effort they invest to find employment. International evidence reflects that such perceptions are formed in part by the characteristics of the neighbourhoods in which the youth reside (Case & Katz, 1991). In a study of poor neighbourhoods in Boston, Case and Katz (1991) find that neighbourhood peers significantly influence youth behaviour, including the propensity to work. Furthermore, a neighbourhood can negatively influence labour market outcomes through absence of positive role models, lack of informal job contacts and the presence of disruptive forces. There exists evidence of negative effects of perceptions on job search in the South African literature as well (Wittenberg, 2002). Wittenberg (2002), using a number of household data sets, finds that the proportion of unemployed engaged in active search hardly ever reaches 50%, a factor which suggests that very often discouragement is based on perceptions of opportunity rather than personal experience. In addition, the depression that often accompanies failure to find employment would manifest as a type of paralysis that prevents any structured active job search. It follows from the abovementioned literature that where perceptions of the labour market are overly pessimistic, the inadequate search attempt that results then feeds back and contributes to further entrenching youth unemployment.

Judging by the results of the Cape Area Panel Survey (CAPS) conducted in 2002, youth perceptions of the labour market are rather gloomy. Of the 1282 respondents between the ages of 16 and 22 who were unemployed and had indicated that they wanted work, 61% had never looked for work. When involvement in studies is controlled for, the figure is still

³ For example, the location of malls within townships or in close proximity to them has become increasingly commonplace.

significantly high at 41% of unemployed non-studying youth having never searched for work. Comparison with the LFS is not possible, as this question was not asked.

When asked what they thought the chances were that they would be working within a few months, 75% said 50-50 or less. When asked the same question with a reference period of three years, 40% still said 50-50 or less. Clearly, youth perceptions of the labour market are poor, though to a considerable extent realistically so.

This discouragement is a serious concern, as duration of unemployment has negative consequences on the self-esteem of jobseekers as well as on the likelihood of an employer hiring them. The negative consequences of long-term unemployment are well-documented outside of South Africa (Winefield et al., 1993). Depression can result from direct negative labour market experience. Hammarstrom and Janlert (1997) found that amongst Swedish youth, unemployment correlated positively with changes in nervous complaints and depressive symptoms, even after controlling for initial psychological health and background factors. In a study of Australian youth Morrell et al (1998) found youth unemployment and youth suicide to be strongly associated and so too youth unemployment and psychological symptoms such as depression and loss of confidence.⁴

These findings are echoed by Dooley et al. (2000) who found that amongst American youth, changes from what the respondents regard as adequate employment to what they regard as inadequate employment as well as from employment to unemployment, resulted in significant increases in depression. With the high duration of unemployment experienced in the South African labour market, it is probable that the accompanying link with depression cited in the above studies is present. This could lead to negative spill-over effects for society in general. Youth in this situation tend to feel a lack of self-esteem coupled with the need to feel a sense of control, competence and belonging, which in turn may encourage criminal activity and gang association. Indeed the presence of gangs within the relatively poverty-stricken areas of Cape Town is rife (Pinnock 2016). The way to break this vicious cycle is argued to be through the engaging of idle youth in activities such as training, community projects and peace education (World Development Report, 2007).

Furthermore, the duration of unemployment has an effect on the perceived productivity of an individual by prospective employers. Thus, individuals who have been unemployed for

⁴ The depression scale available in the data set used in this paper requires a judgement call of what an appropriate cut-off would be for respondents of a certain population group or age and this analysis is beyond the scope of this paper.

much of their youth may also remain unemployed for much of their non-youth life. It is imperative therefore that the connection between youth (especially non-studying) and the labour market be maintained so that discouragement is kept low or at least its effects are mitigated.

The introductory discussion above has highlighted a number of key barriers in the functioning of labour markets with regard to the youth. Furthermore, the importance of education to labour market outcomes was discussed. Premature labour market entry, in combination with the corresponding lack of educational attainment, was raised as a factor that negatively impacts success in the labour market. Of concern are the particularly vulnerable youth who are neither employed, studying or in any training initiatives, the NEETs.

The discussion above also raised obstacles in job search as contributing factors to youth joblessness. In particular, geographical isolation from potential employers increases the monetary cost of search and, with the passing of time, increases the likelihood of discouragement. Costs of searching actively also increase the likelihood of searching passively through family and friends. The success of these passive search strategies depends on the labour-market-related usefulness of the networks of family and friends in use as a factor contributing to unemployment.

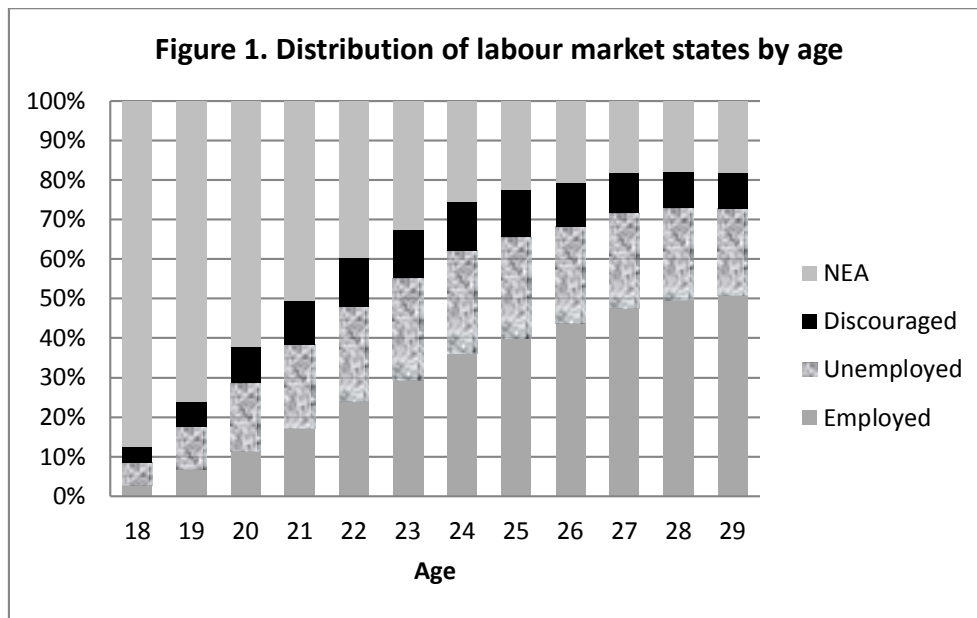
Also discussed above was the role that perceptions of the labour market play in job search intensity. To the extent that youth perceptions of the labour market are overly pessimistic, search intensity will be depressed. Furthermore, the negative effects of lengthy duration of unemployment include labour market discouragement and possible psychological depression.

It is key to bring to the fore the realities of youth and the labour market from their perspective as a way of enhancing the impact of the statistical analysis that follows. In this vein, the above discussion has pointed out that youth firstly have to survive the challenges that entry into the labour market can pose.

3. Summarizing the labour market outcomes of youth using cross-sectional data

In this section, we present the differences in labour market outcomes that youth of different ages experience. This gives us some context relative to which we can interpret our main findings. The data comes from twelve waves of StatsSA's Quarterly Labour Force Survey (QLFS), and we combined the data from QLFS2011:1 up to and including QLFS2013:4. We made use of StatsSA's officially derived labour market state variable, and the proportions are

obtained after applying the relevant survey weights. The mean percentage in each labour market state is presented graphically in Figure 1, for each age value. Amongst teenagers, the levels of labour force participation are very low, as evidenced by the light grey category of “Not Economically Active”. The size of this group decreases rapidly with age: by age 21 about half of the youth are in the labour force, and this rises further to almost 80% by age 26.



The percentage employed, however, does not rise as rapidly as the entry into the labour force, as evidenced by the dark grey category in the bar chart. At ages 21, 25 and 29, the mean percentages employed are approximately 17%, 40% and 51% respectively. This difference between the rate of entry into the labour market and the rate at which youth find jobs results in a rapid increase in unemployment in the early and mid-twenties, as shown by the middle two groups in each bar. Graphically, this reflects the essential problem that led to the introduction of the ETI; namely that youth in South Africa experience exceptional difficulty in finding their first jobs.

In their late twenties, the rate of labour force entry amongst youth stabilizes at just over 80%, while the rate at which youth find employment continues to increase, albeit rather slowly. Thus, by age 29, 62% of youth who are in the labour market are employed, which is the highest employment rate for any age in the youth group, although the corresponding unemployment rate is still exceptionally high at 38%.

These summary statistics provides an empirical motivation for our study, which is to identify the factors that correlate with a more successful entry into the labour market.

4. Data

Data source

The data that we use comes from the first three waves of the longitudinal and nationally representative National Income Dynamics Study. The first wave was conducted in 2008, the second in 2010/2011 and the third in 2012. The initial sample included just over 28 000 members of the panel, including children, who resided in about 7300 households. The NIDS data includes several modules, including a household roster, and questions on fertility, migration, deaths, education and labour market outcomes.

Sample selection

The purpose of our analysis is to identify the factors that correlate with a more successful transition out of school and into the labour market, so we restrict our sample in two ways. First, we focus only on youth aged 16 to 20 in wave 1 who were enrolled in some type of educational institution. Second, we restrict the sample further to the subset of these youth who we observe in the dataset in both wave 2 as well as in wave 3. The final sample that we use in our analysis is thus 1030 youth aged 16 to 20. In Table 1 below, we show how the sample gets reduced as we impose the two criteria. To begin with, we have a total of 3056 youth in Wave 1 in the age group from 16 to 20. This decreases to 1836 when we only include those who were also enrolled for some form of studies, or a reduction of about 40%. This reduction is unsurprisingly more pronounced for the older youth in the age range than the younger ones.

When we further impose that the youth must form part of the balanced panel, i.e. that they must be observed in all three waves, the sample reduces further to 1030 observations, or an additional reduction of about 45%. This is a substantial attrition rate, and brings into question the external validity of our findings. Beyond the implications that this attrition has in terms of diminished statistical power, the problem might not be too serious, as we make use of the attrition adjusted weights provided which, under certain conditions, would cancel out any bias generated due to selective attrition.

Table 1: Sample sizes and attrition

| Age in Wave 1 | Number of observations | | |
|---------------|------------------------|----------------|--|
| | Wave 1 | Enrolled in W1 | Enrolled in W1 and observed in all waves |
| 16 | 665 | 538 | 306 |
| 17 | 635 | 455 | 259 |
| 18 | 594 | 376 | 210 |
| 19 | 623 | 286 | 165 |
| 20 | 539 | 181 | 90 |
| Total | 3,056 | 1,836 | 1,030 |

Variables

The primary variable of interest that we construct is a *state* variable. This variable classifies each individual into one of four mutually exclusive and exhaustive states in each wave; namely *employed*, *enrolled*, *both enrolled and employed*, or *neither enrolled nor employed*. The last state is equivalent to the “Not in Education, Employment, or Training” (NEET) category often seen in the literature. In our sample of 1030 individuals that were enrolled in some form of education in wave 1, 4.15% were also employed.

We also make use of a number of additional characteristics in our analysis. The characteristics pertain to gender, age, original household structure, geography, migration and education.⁵The specific variables that we use are:

- *male* – This takes on a value of 1 if the respondent is male and 0 if she is female.
- *Age_w1* – This captures the age of the individual in wave 1.
- *Hhsize_w1* – This is a count variable which captures the total number of people living in the young person’s household in wave 1.
- *Moth_present_w1* – This is an indicator variable for whether the respondent lived with his/her mother when interviewed in wave 1.
- *Fath_present_w1* – This is an indicator variable for whether the respondent lived with his/her father when interviewed in wave 1.
- *Urban_w1, urban_w2, urban_w3* – Captures whether the household was located in an urban or non-urban location. Non-urban areas include farming/rural areas as well as traditional areas.

⁵ Parenthood amongst the youth has not been included due to the endogeneity of the decision to have children. For example, some youth who find a job may be less willing to have children.

- *Rural_Migrant_w2, rural_migrant_w3, urban_migrant_w2, urban_migrant_w3* – These are indicator variables that reflect whether the location (i.e. urban/non-urban) in wave 1 has changed in wave 2 or wave 3 respectively. For example, *rural_migrant_w2* takes on a value of 1 if the respondent lived in a rural area in wave 1 and in an urban area in wave 2.
- *Hist_disadvantaged_school_w1* – This variable acts as a proxy for the type of school the respondent was attending in wave 1. It takes on a value of 1 if the school was previously administered by the Dept. of Education and Training, an Independent Homeland or a Self-governing Territory.
- *Educ_w1, Educ_w2, Educ_w3* – These capture the respondents’ levels of education in each wave. We collapse the education variables contained in the survey and simplify it to reflect one of three categories of educational attainment; namely ‘less than matric’, ‘matric’ and ‘some tertiary education’. Note that the last category does not necessarily mean that the student has successfully attained a tertiary qualification.

In Table 2 below, we summarize these variables by providing the mean in the relevant wave. For the time invariant variables, or variables where we only use the wave 1 information, we only provide the mean in wave 1. In our sample, 96% of those who were enrolled were not employed in wave 1. There is thus a small fraction of respondents who are both studying and working simultaneously.

By wave 2, approximately two years later, only slightly greater than half are still enrolled. This is not surprising as we selected the sample to capture those youth who are very close to the age of either completing secondary school or at high risk of dropping out. Unfortunately, only 9.3% of our sample have left school and are employed, while 38% are NEET. By wave 3, a full 50% of our original sample is in the NEET category. Although the percent in employment has increased substantially by 11.2 percentage points, this is smaller than the percent of people who leave their studies between waves 2 and 3, which decreased by 24 percentage points. Once again we see the clear challenge in the youth school-to-work transition rates, which is that a substantial fraction of youth leave their studies and then struggle to find employment.

Table 2: Summary of variables used by wave (mean)

| Variable | Wave 1 | Wave 2 | Wave 3 |
|----------------------------|--------|--------|--------|
| Number of obs. | 1030 | 1030 | 1030 |
| State: | | | |
| % NEET | 0.0 | 38.3 | 50.0 |
| % Enrolled | 96.3 | 50.6 | 26.7 |
| % Employed | 0.0 | 9.3 | 20.5 |
| % Enrolled & Employed | 3.7 | 1.9 | 2.8 |
| Male | 0.526 | - | - |
| Age_w1 | 17.545 | - | - |
| Moth_present_w1 | 0.648 | - | - |
| Fath_present_w1 | 0.342 | - | - |
| HHsize_w1 | 5.883 | - | - |
| Urban | 0.471 | 0.493 | 0.554 |
| Rural_migrant | - | 0.028 | 0.096 |
| Urban_migrant | - | 0.006 | 0.013 |
| Hist. disadvantaged school | 0.717 | | |
| Education: | | | |
| % Less than matric | 84.0 | 70.9 | 58.7 |
| % Matric | 15.1 | 26.0 | 31.4 |
| % Some tertiary education | 0.9 | 3.1 | 10.0 |

Notes:

1. All summary statistics are weighted.
2. The 'some tertiary education' category does not imply graduation.
3. For variables where we are only interested in wave 1 values, we do not report the summary statistics for wave 2 or for wave 3.

When we look at the other variables that we use, we observe that slightly more than half of our sample is male, the mean age is 17.5 year in wave 1, 64.8% of the sample resided with their mother in wave 1, but only 34.2% resided with their fathers. The average household size was 5.88 people. Initially, 47.1% of the sample is in urban areas, but this increases to 49.3% and 55.4% by wave 2 and wave 3 respectively. This arises due to rural-to-urban migration, which is substantially larger than urban-to-rural migration. By wave 3, 9.6% of our original sample were rural migrants, which represents almost 20% of our sample that were residing in rural areas in wave 1. The majority of our respondents, 71.7 percent, attended historically disadvantaged schools in wave 1.

We can also observe how our sample becomes more educated over time. The fraction with less than a matric drops from 84% in wave 1, to 70.9% in wave 2 and then drops further to 58.7% in wave 3. In contrast, the fraction with a matric increases steadily across the three waves, from 15.1% in wave 1 to 26% in wave 2 and then again to 31.4% in wave 3. The fraction with some tertiary experience also increases, but from a very small base, and it only becomes substantial by wave 3 where 10% of the sample have had some post-secondary training.

5. Methods

Our methods consist of two sets of analyses. The first is to investigate the mean rates at which people transition across different states, and how the distribution of states in wave 2 and wave 3 differ along the dimensions of gender, household structure, geography and educational attainment.⁶

The second set of analyses involves a series of OLS regression models. In the first two regressions, our dependent variable is an indicator variable called *enrolled* in wave 2 and wave 3 respectively. Not being enrolled means that the respondent is either employed or NEET, and we interpret this as a proxy for labour force participation. In the third and fourth regression models, our dependent variable is an indicator variable for *employed* in wave 2 and wave 3 respectively. This is the major focus of the paper, and will allow us to consider the factors correlated with finding employment simultaneously within a multivariate analytical framework.

6. Results

6.1 Transition matrices

We start by presenting the transition matrices between wave 2 and wave 3 in Table 3 below. Since our sample was selected to include only people aged 16 to 20 who were enrolled in wave 1, of whom 3.7% were both employed and enrolled, the wave 2 distribution of states gives a clear sense of the wave 1 to wave 2 transition.

As already discussed, by wave 2, only 50.6% of these youth were enrolled, while just below 40% were NEET and less than 10% were employed. A further 1.9% were both employed and enrolled. The transition matrix contains the wave 2 category and the distribution of these respondents' state in wave 3. Thus, for example, 60.8% of the NEETs in wave 2 were still NEET

⁶ Note that we exclude household size from this analysis as the range of this variable in wave 1 went from 1 to 25. An alternative would be to group the variable in categories. We performed this analysis but chose to omit it as the results were not particularly revealing or informative.

in wave 3, while 16.9% had subsequently re-enrolled to study. Similarly, 44% of those enrolled in wave 2 had transitioned into NEET, while 37.6% were still enrolled.

Our results indicate that the NEET category is quite a stable one over the two years between wave 2 and wave 3. Three out of five respondents who were in this category are still in this category two years later, while just over one in five have found employment. About one in six of these respondents have re-enrolled in their studies. Of those enrolled in wave 2, the largest category in wave 3 is again NEET, at 44%. A further 37% are still enrolled, while fewer than one in five has transitioned into employment only, or employment and enrolment combined. Of the small number of respondents who were employed by wave 2, approximately half are also employed in wave 3, but approximately two out of every five are no longer employed and are in the NEET category.

Table 3: Transition rates between wave 2 and wave 3

| State_w2 | Wave 2 % | State_w3 | | | | Total |
|----------|----------|----------|----------|----------|------|-------|
| | | NEET | Enrolled | Employed | Both | |
| NEET | 38.3 | 60.79 | 16.91 | 22.18 | 0.12 | 100 |
| Enrolled | 50.6 | 44 | 37.57 | 14.02 | 4.41 | 100 |
| Employed | 9.3 | 41.54 | 8.08 | 49.24 | 1.13 | 100 |
| Both | 1.9 | 31.36 | 14.01 | 30.33 | 24.3 | 100 |

Our results indicate a lot of churning from all categories for this sample. None of the diagonal elements are above 66%, or two out of three, and the largest off diagonal category is the NEET category. Given all that we know based on the existing literature, this is unfortunate but as expected. The one new insight that we obtain from this transition matrix is that the youth employment problem is not only about finding a first job, but also about the stability of employment amongst youth. Of the minority who do find employment by wave 2, only about half are still in employment in wave 3, and the majority of those who are no longer employed are NEET.

6.2 Distribution of States by covariates

In Table 4, we document the distribution of the State variable by wave 2 and wave 3, for different covariates. Starting with the different ages, we see that the older youth are more likely to transition into NEET or employment, and this is consistently seen over time as the cohort ages as well. This is offset by a corresponding decrease in enrolments as time passes by.

The gender differences are striking. Young women are slightly more likely to remain enrolled, but the biggest differences are manifest in the rate at which the males and females transition in to NEET or into employment. By wave 3, 57.5% of women are NEET, as compared to 43.2% of men. Both groups of youth have a very high probability of being NEET, but the difference between the genders is also very large, at 14.3 percentage points. In contrast, by wave 3, 14.1% of women are employed, or employed and enrolled, while the corresponding number for men is 31.7%. Thus, approximately one in three males has found employment by wave 3, but only about one in seven females have found employment.

| Table 4: Distribution of States in wave 2 and wave 3 by covariates | | | | | | | | |
|--|---------|----------|----------|-------|---------|----------|----------|------|
| Variable | State 2 | | | | State 3 | | | |
| | NEET | enrolled | employed | both | NEET | enrolled | employed | both |
| Age_w1 = 16 | 27.05 | 65.28 | 6.15 | 1.53 | 44.36 | 38.09 | 13.84 | 3.71 |
| Age_w1 = 17 | 40.95 | 53.87 | 3.85 | 1.33 | 47.78 | 32.7 | 19.19 | 0.33 |
| Age_w1 = 18 | 42.21 | 48.4 | 7.82 | 1.57 | 59.61 | 16.62 | 19.59 | 4.18 |
| Age_w1 = 19 | 47.51 | 36.3 | 13.38 | 2.81 | 47.41 | 17.87 | 32.53 | 2.19 |
| Age_w1 = 20 | 42.54 | 27.19 | 26.68 | 3.59 | 54.31 | 15.85 | 26.45 | 3.38 |
| | | | | | | | | |
| Male | 40.73 | 51.28 | 7.02 | 0.97 | 57.48 | 28.4 | 10.81 | 3.31 |
| Female | 36.01 | 49.92 | 11.31 | 2.76 | 43.17 | 25.14 | 29.34 | 2.35 |
| | | | | | | | | |
| Neither parent (w1) | 43.57 | 43.17 | 10.2 | 3.06 | 51.16 | 25.72 | 22.08 | 1.04 |
| Mother only (w1) | 41.87 | 48.14 | 8.79 | 1.2 | 53.76 | 25.56 | 16.88 | 3.8 |
| Father only (w1) | 38.87 | 53.75 | 3.22 | 4.16 | 25.38 | 31.34 | 43.28 | 0 |
| Both parents (w1) | 28.71 | 60.5 | 9.54 | 1.25 | 47.37 | 28.4 | 20.38 | 3.85 |
| | | | | | | | | |
| Hist. disadv. school | 39.05 | 48.93 | 10.53 | 1.49 | 51.26 | 28.67 | 19.39 | 0.68 |
| Not hist. disadv school | 36.28 | 54.65 | 6.11 | 2.96 | 46.68 | 21.69 | 23.45 | 8.18 |
| | | | | | | | | |
| <matric | 33.91 | 58.01 | 6.57 | 1.51 | 51.38 | 29.84 | 18.42 | 0.36 |
| matric | 51.57 | 29.85 | 17.14 | 1.45 | 51.84 | 19.42 | 22.83 | 5.91 |
| matric plus | 26.37 | 54.22 | 4.63 | 14.78 | 36.02 | 30.49 | 26.05 | 7.45 |

Notes:

1. All proportions are weighted.
2. Only 31 out of the 1030 youth in our sample lived with their fathers but not their mothers in wave 1.
3. The education variables is time varying. We used the wave 2 data for the State 2 means, and the wave 3 data for the State 3 means. Our groups are thus not stable over time.

When we consider whether the respondent was living with either or both of their parents in wave 1, we see that living with both parents is correlated with remaining enrolled for longer, and with a lower probability of being NEET in wave 2.⁷ The interpretation is slightly

⁷ We do not comment on the group living with only their fathers in wave 1, as this is an extreme minority. Most youth who live with their fathers are living with both parents.

complicated as people might leave home for employment or study purposes, so we cannot say much about whether a person is not living with their parents because they found employment, and whether living with one's parents helps one to find a job. Indeed, by wave 3 it is difficult to observe any clear patterns in the data with regard to co-residency with one's parents in wave 1.

In terms of whether a youth attended a historically disadvantaged school or not, we see an interesting non-linear pattern. By wave 2, the youth from the disadvantaged schools were about 5.7 percentage points less likely to be enrolled, and some of this is accounted for by increased employment rates. The youth from disadvantaged schools are about 3 percentage points more likely to be employed, if we consider those only employed combined with those both employed and enrolled. Thus, students from disadvantaged schools leave school and enter the labour market and employment faster than their peers from relatively better schools. Between wave 2 and wave 3, however, one begins to see a clearer divergence in outcomes based on school background. The students from the historically disadvantaged schools are more likely to be NEET (by 4.6 percentage points) and more likely to be enrolled (by 7 percentage points). Their peers from the relatively advantaged schools are about 11.5 percentage points more likely to be employed, and about 7.5 percentage points of this is accounted for by being both enrolled and employed simultaneously. This indicates that one's school environment and background matters in terms of one's likely experiences upon leaving school.

The educational attainment variable does have quite a clear pattern with regard to how the state distribution evolves across waves. Those who do not yet have a matric, and those who have some tertiary experience, are substantially more likely to be enrolled in wave 2. This alludes to the fact that matric is a stopping point for many youths' educational attainment. The fraction of NEETs is substantial for each group, but clearly it is the largest amongst those with just a matric. Employment rates are also low for everyone, but smallest for those who do not yet have a matric. Of those who have a matric or some tertiary experience, the employment rate is about 18% for either category, but the majority of employment amongst those who have some tertiary experience is due to working and studying simultaneously.

By wave 3, many of those who have not yet completed a matric have dropped out of school, and are mostly in the NEET category. The fraction of NEETs is approximately the same within the less than matric and matric only category. Enrolment rates have decreased amongst all groups, while employment rates have increased substantially, although the employment rates are still fairly low. The total employment rates are approximately 18.8%, 28.7% and

33.5% amongst those with less than matric, matric only and some tertiary experiences respectively. Thus, within a short amount of time we see the well documented correlation between educational attainment and employment outcomes start to emerge.

6.3 Migration and employment outcomes

In Table 5 below, we explore how geography and migration potentially relates to differences in employment outcomes. If we only consider the youth's initial location, we see by wave 2 that youth in either locale are highly likely to still be enrolled. But the rural youth are somewhat more likely to be NEET whereas the urban youth are slightly more likely to be employed. By wave 3, the differences get a bit more pronounced but remain relatively small. Rural youth are more likely to still be enrolled, and are slightly less likely to be employed.

When we consider the migrants, we do see some strong differentials. The number of urban to rural migrants is very low, so we do not comment on these. However, there are a substantial number of youth who migrate from rural to urban areas. About 20% of the youth originally in rural areas have migrated to an urban area by wave 3. When we compare the rural youth who did not migrate with those who did migrate in wave 3, we see that the enrolment rates are almost identical. However, the fraction who are NEET is almost 19 percentage points higher amongst the non-migrants, and this is fully offset by a higher employment probability amongst the youth who did migrate from a rural to an urban area. In fact, the employment rate of rural to urban migrant youth is almost double that of urban youth who were already in urban areas in wave 1. While we cannot attribute causality of employment outcomes to the decision to migrate, due to either reverse causality or selection (or both), this correlation remains a striking insight that would not have been possible to observe in the absence of longitudinal data.

Table 5: Distribution of states by migration status

| Variable | State 2 | | | | State 3 | | | |
|-------------------------|---------|----------|----------|------|---------|----------|----------|------|
| | NEET | enrolled | employed | both | NEET | enrolled | employed | both |
| Rural (w1) | 40.11 | 50.36 | 7.53 | 2 | 48.87 | 29.01 | 21.57 | 0.55 |
| Urban (w1) | 36.22 | 50.8 | 11.17 | 1.81 | 51.19 | 24.08 | 19.39 | 5.34 |
| | | | | | | | | |
| Rural-urban non-migrant | 38.72 | 50.83 | 8.53 | 1.93 | 51.78 | 26.73 | 18.52 | 2.97 |
| Rural-urban migrant | 22.81 | 41.8 | 34.15 | 1.24 | 32.87 | 26.3 | 39.54 | 1.29 |
| | | | | | | | | |
| Urban-rural non-migrant | 38.26 | 50.5 | 9.32 | 1.92 | 49.68 | 26.94 | 20.53 | 2.84 |
| Urban-rural migrant | 38.31 | 61.69 | 0 | 0 | 71.3 | 7.53 | 21.17 | 0 |

Notes:

1. rural=1 if in a Farming or Traditional area.
2. There were only 7 and 15 urban to rural migrants in wave 2 and wave 3 respectively.
3. There were 37 and 128 rural to urban migrants in wave 2 and wave 3 respectively.

6.4 Regression results

Our final set of results relate to OLS regression models on whether a youth was enrolled or not in wave 2 and wave 3, and whether a youth was employed or not in wave 2 and wave 3 respectively. Some of our covariates are time invariant, while some such as education are time varying. Our coefficients are presented in Table 6 below.

By wave 2, youth who were enrolled in historically disadvantaged schools in wave 1 were 8.7 percentage points less likely be enrolled in school, but this difference vanishes by wave 3. Thus, youth from poorer schooling backgrounds tend to drop out of school at a faster rate than their peers who attend relatively better schools. At the same time, the employment regressions do not reveal a statistically significant difference in employment rates by wave 2, but do reveal a large and statistically significant difference by wave 3. Youth enrolled in historically disadvantaged schools in wave 1 are 11.7 percentage points less likely to be employed in wave 3 than their counterparts who attended relatively better schools.⁸

In wave 2, people with a matric were 28.4 percentage points less likely to have been enrolled, relative to those without a matric, and the difference is statistically significant. Those with only a matric were also about 8.5 percentage points more likely to be employed in wave 2. By wave 3, there are no statistically significant differences in the likelihood of being enrolled, but

⁸ Note that we cannot disentangle how much of this reflects differences in school quality or learning, and how much of this is really a reflection of other variables such as neighbourhood or poverty status which we are not controlling for in our regression models.

those with a matric and those with some tertiary experiences are significantly more likely to be employed, at 7.7 and 13 percentage points respectively.

Table 6: Regressions on enrolment and employment

| | (1) | (2) | (3) | (4) |
|---------------------------|-----------------------|------------------------|-----------------------|-----------------------|
| | Enrolled | Enrolled | Employed | Employed |
| VARIABLES | wave 2 | wave 3 | wave 2 | wave 3 |
| Hist. disad. school (w1) | -0.0877* (0.0523) | 0.0167 (0.0503) | 0.0396 (0.0319) | -0.117** (0.0484) |
| Matric | -0.284*** (0.0520) | -0.0524 (0.0431) | 0.0852** (0.0380) | 0.0774* (0.0437) |
| Some tertiary | 0.139 (0.120) | 0.0960 (0.0790) | 0.0479 (0.105) | 0.130** (0.0608) |
| Age (w1) | 0.0793*** (0.0146) | 0.0671*** (0.0182) | 0.0371*** (0.0116) | 0.0338** (0.0157) |
| Urban (w1) | 0.00459 (0.0493) | -0.0191 (0.0378) | 0.0413 (0.0261) | 0.0231 (0.0431) |
| Rural migrant | -0.0305 (0.0938) | -0.0296 (0.0408) | 0.253*** (0.0753) | 0.212*** (0.0544) |
| Urban migrant | 0.198 (0.204) | -0.232*** (0.0654) | -0.153*** (0.0429) | -0.0475 (0.132) |
| Male | 0.0249 (0.0384) | -0.0210 (0.0417) | 0.0488** (0.0232) | 0.170*** (0.0390) |
| Mother present (w1) | -0.0185 (0.0471) | 0.00521 (0.0487) | -0.0124 (0.0311) | -0.0230 (0.0421) |
| Father present (w1) | 0.0694 (0.129) | 0.0417 (0.0881) | -0.0662 (0.0554) | 0.181* (0.0988) |
| Both parents present (w1) | 0.0697 (0.143) | -0.0105 (0.108) | 0.0728 (0.0646) | -0.135 (0.109) |
| HH size (w1) | -0.00810 (0.00742) | -0.0129** (0.00581) | -0.00483 (0.00429) | -0.00174 (0.00844) |
| Constant | 2.048*** (0.250) | 1.554*** (0.318) | -0.606*** (0.182) | -0.429 (0.299) |
| Observations | 1,013 | 1,026 | 1,027 | 1,028 |
| R-squared | 0.138 | 0.056 | 0.086 | 0.116 |

Notes:

1. Robust standard errors in parentheses
2. *** p<0.01, ** p<0.05, * p<0.1
3. The education variables are time varying, and correspond to the relevant wave of the dependent variable.
4. A 'rural migrant' was in a rural area in wave 1, and in an urban area in the wave corresponding to the dependent variable.
5. An 'urban migrant' was in an urban area in wave 1, and in a rural area in the wave corresponding to the dependent variable.
6. A 'historically disadvantaged school' is defined in wave 1. Any student enrolled in a school that was administered by Independent homelands, self-governing territories or the DET was classified as historically disadvantaged. All other institutions were classified as not historically disadvantaged.

Enrolment rates clearly decrease with age, and employment rates increase with age, but both sets of coefficients get slightly smaller in absolute value as the cohort ages into their early twenties. Thus age matters less as time goes by and the youth transition into adulthood. As with the bivariate analysis in the previous subsection, we can clearly see how the migration decision is related to employment outcomes for youth from rural areas. The rural youth who migrated to urban areas were 25.3 and 21.2 percentage points more likely to be employed in wave 2 and wave 3 respectively, relative to the rural youth who remained in rural areas. Finally, we again observe that the entry into the labour market is much more challenging for young women as compared to young men. The employment rate amongst young men is 4.9 percentage points higher than it is for young women in wave 2, and this difference increases to 17 percentage points by wave 3.

7. Conclusion

In this paper, we investigated the transitions of youth from enrolment into the labour markets, amongst a cohort of youth who were enrolled in some form of education in 2008. We estimated the transition rates, the distribution of enrolment and employment outcomes, and a set of regression models to better understand some of the dynamics involved.

Our analysis confirmed some of the findings in the existing literature in South Africa, and also yielded some new and interesting insights. For example, we confirmed that a large fraction of youth enter the labour market by first spending a substantial amount of time where they are neither employed nor in education or training. There are also significant differences in the school-to-work transitions of youth who attend historically disadvantaged schools relative to those who attend relatively better schools. We also measured the substantial gender differentials in terms of labour market experiences. Then there are also the well-known correlations between educational attainment and employment outcomes.

We also obtained two new insights into the school to work transition experience. First, we measured a substantial amount of churning amongst the employed youth. Thus, the youth employment problem is not only about the challenges of finding a first job, it is also about finding a stable job. Secondly, the original location of a youth matters in that rural youth who remain in a rural area have much worse employment outcomes than rural youth who migrate to urban areas.

From a policy perspective, the net issue is that there are still too many people who live far from where employment opportunities are. Increased urbanisation will place cities under

increased pressure but rural to urban migration is likely to continue unless rural development can effectively create job opportunities in rural areas and alleviate this pressure.

As with most research, the existing work has raised more questions that can be explored. With time, there will be more waves of data in NIDS, and this will allow for an analysis of a more complete cohort rather than one that is conditional on enrolment. One can also track the evolution of cohorts for a longer period over the life cycle. There are more sophisticated forms of analyses, and one can explicitly model the duration of particular states using hazard models. Finally, one can perform more detailed analysis on specific components of the youth's school to work transitions, and these may yield more nuanced and useful insights for policy makers.

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