Youth employment in South Africa and the persistence of inflated expectations

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"We are all in the gutter, but some of us are looking at the stars." - Oscar Wilde

The author would like to acknowledge and thank the National Treasury of South Africa, the World Bank, the Programme to Support Pro-Poor Policy Development (PSPPD), and the International Initiative for Impact Evaluation (3IE) for their financial contributions to the project from which the data for this paper is based. The views expressed in this paper are those of the author and do not reflect the views of these organisations**.** The author would also like to thank Tinyko Mhlaule, Elvis Ramutsindela, Ignitious Shiburi, Naughtyboy Rikhotso, Nhlanhla Nobela, Precious Mabaso, and Simangele Phungula for their input, Linda and Ian Daffue for the discussions regarding the youth unemployment problem, and Justin Kruger for replying to one of probably many random emails he receives from less competent researchers.

Introduction

This paper investigates the extent to which young South Africans are likely to over-estimate their chances of finding permanent full-time employment. It proposes that any persistence of inflated expectations – despite evidence to the contrary regarding their chances of finding such employment – may, in part, be explained by the inability to recognize their competence in this narrow domain, and argues that the existing search models used to explain unemployment may not be applicable to the labour market for young people in this country.

Youth unemployment in South Africa

Freeman and Wise (1982) identify several dimensions of the youth unemployment problem that distinguish it from the generally problem of unemployment. Younger workers are more likely to switch between searching for work and `non-economic' activities such as education, and they are prone to being discouraged[1] or less active job seekers. Furthermore, in their study, youth unemployment is generally concentrated among "a small group, who lack work for extended periods of time," which has different characteristics from those that are employed. They also provide several explanations for the causes of youth unemployment, including the general level of aggregate demand in the economy and the proportion of young people in the population. There is a positive correlation between education and both employment and wages, and they find that there are characteristics associated with youth unemployment that are not related to wages, including evidence which suggests that young workers from poor families experience higher rates of unemployment. They believe that the youth unemployment problem is a concern not only because of the immediate effects of inactivity (e.g. crime, alcohol and drug abuse, and other social and psychological problems) but also because, while a long spell of unemployment following the completion of school has no effect on employment more than three years later, such unemployment is associated with a sizable negative effect on the wages.

In one of the most widely cited academic studies to specifically look at the characteristics associated with youth unemployment in this South Africa, Mlatsheni and Rospabe (2002) define young people as those aged 15 to 30[2], since entry in the labour market in South Africa is thought to occur later than in developed countries[3] (Mlatsheni and Rospabe, 2002). They use the 1999 OHS and find that "large amounts of the differences in employment of youth and older participants are attributable to disparities in observable characteristics such as experience and education in the case of wage employment and family characteristics in the case of self-employment. The latter is also likely to be greatly influenced by differences in access to credit." Furthermore, unemployment is highest among African youth, young females and those with less education. Lam, Leibbrandt, and Mlatsheni (2007) extend the definition even further to 35. However they acknowledge that the different groups in this range are not homogenous, and therefore propose that there three cohorts within this group that have similar properties: 15-19, 20-24, and 25 to 35. Using data from the Cape Area Panel Study (CAPS), they find that "by age 20, only 20% of African females and 31% of African males have ever done

[1] They want to work but do not actively search for work

[2] The National Youth Policy in South Africa extends the definition of young people as those aged 14 to 35 (Government of the Republic of South Africa, 1997).

[3] Both reports define youth in the labour market as being from 15 to 24 years. O'Higgins (2003) points out that even though 15-24 is generally used in most developed countries, it is arbitrary and the definition may be specific to the economy.

any paid work, using a very broad definition. In contrast, 86% of white females and 90% of white males have done paid work, with only slightly lower percentages for coloured youth." They also find that while African and Coloured youth experience a sharp jump in labour force participation immediately after leaving school, Coloured youth find work much more quickly. Among African youth, there is a "steady increase in the percentage searching for work during the first 20 months after leaving school." However, "by the 20th month after leaving school, only about 30% of African males and 20% of African females are working." Lam at al. (2007) find that, while there is a high correlation between completed Grade 12 (Matric) or higher education and the probability of finding employment in the first 20 months after leaving school, this impact is halved when they include scores from a literacy and numeracy exam that was administered to the CAPS respondents. This, they argue, may "indicate that employers do not use schooling alone as a signal, but are also able to discriminate on the basis of ability."

Table 1 shows that, since the first quarter of 2008, the official unemployment rate in South Africa has been increasing for most age groups, particularly among younger African, the rate of unemployment is very high, which suggests that the youth unemployment problem is not necessarily confined to 'small group'. The figures, while alarming, underestimate the level of unemployment because they do not include those people who wanted to work but were not searching. Furthermore, they provide no insight into the type of jobs that constitute employment – the narrow definition includes any work in the week before as a job, even if was for just one hour and unpaid. Figure 1 provides an estimate of the population pyramid for Africans in 2010[4]. Each cohort is separated by gender into the number of people that are permanent wage-employed, those that are contract wage-employed or self-employed, and those workers that are unemployed or not economically active[5]. They show that the number of permanently employed wage-workers is significantly higher than the number of contract and self-employed workers for the other population groups in South Africa. However, among young Africans aged 20-29[6] the number of permanently employed wage-workers is lower than the number of contract and self-employed workers. Furthermore, the number of unemployed and not economically active Africans in this cohort dwarf the number of employed, and is approximately equal to the number of people in this group for the rest of the African population combined.

Figure 2 presents a quadratic prediction plot of the proportion of young people in the age-cohorts 20 to 35 in permanent full-time employment, by population group in the third quarter of 2010. This proportion is increasing in age for both population groups. Again, however, the proportion is much higher and increasing at a higher rate for the other population groups (when combined[7]) in South Africa: by age 28 less than 20% of African youth are employed in such jobs. Figure 3 shows the quadratic prediction plot of proportion of these young people that have been in permanent full time employment for six or less months. Less than 1% of the African youth in age-cohort between 20 to 34 have recently entered full-time permanent employment. It is interesting that this proportion appears to follow the same trend as the other population group: the difference been these proportions at age 20 is just over 1 %-point, and does not converge but remains constant across these age cohorts.

[4] The numbers are the weighted average for the first three QLFS of 2010
[5] Labour force participation is endogenous and determined by labour market conditions
[6] The majority of those aged 15 to 19 are still in school
[7] These population groups have been combined to maintain an adequate sample size across the age cohorts

Table 1: Official unemployment rate by age group and population group (Source: QLFS)

Population group	Age	2008 Q1 %	2008 Q3 %	2009 Q1 %	2009 Q3 %	2010 Q1 %	2010 Q3 %
African							
	15-19	59.9	59.1	60.1	63.7	67.2	71.5
	20-24	50	50.6	51.3	52.9	55.2	54.9
	25-29	32.9	34.4	37	35.2	37.1	37.6
	30-34	26.2	24.5	25.1	28.3	28	27.8
	35-64	16.6	15.8	15	17.1	17.5	17.8
Coloured, Indian or Asian							
	15-19	49.8	52.5	57.5	57.8	59.8	58.9
	20-24	32.7	33.4	34	34	32.5	37.2
	25-29	20.5	19.2	21	25.3	21.7	24.5
	30-34	17	15.9	13.9	19.9	19.2	14.9
	35-64	8.4	9.5	10.1	11.3	11.8	12
White							
	15-19	37.2	22.8	20.1	22.1	23.4	33.7
	20-24	10.4	13.1	17.6	9.3	13.5	11.9
	25-29	6.2	5.7	10.2	6.1	12.7	9.4
	30-34	6.2	2.5	2.9	6.3	5.1	5.1
	35-64	3.1	2.4	1.9	3.6	3.8	3

Figure 1: The number of working-age Africans by employment and age-cohort in 2010 (Source: QLFS)

Figure 2: Proportion of age-cohort in permanent full-time[8] employment, by population group in the third quarter of 2010 (Source: QLFS)

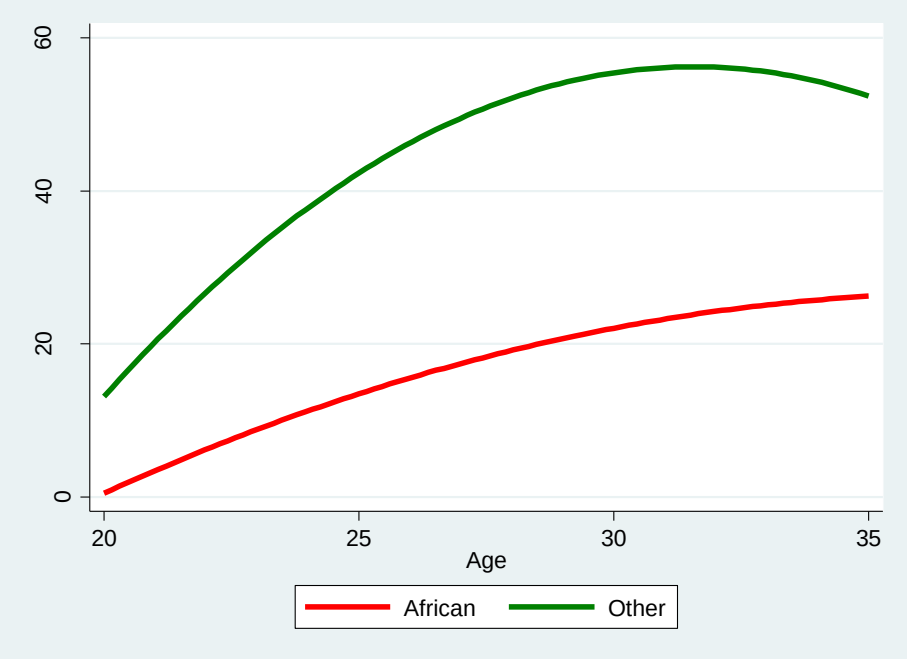
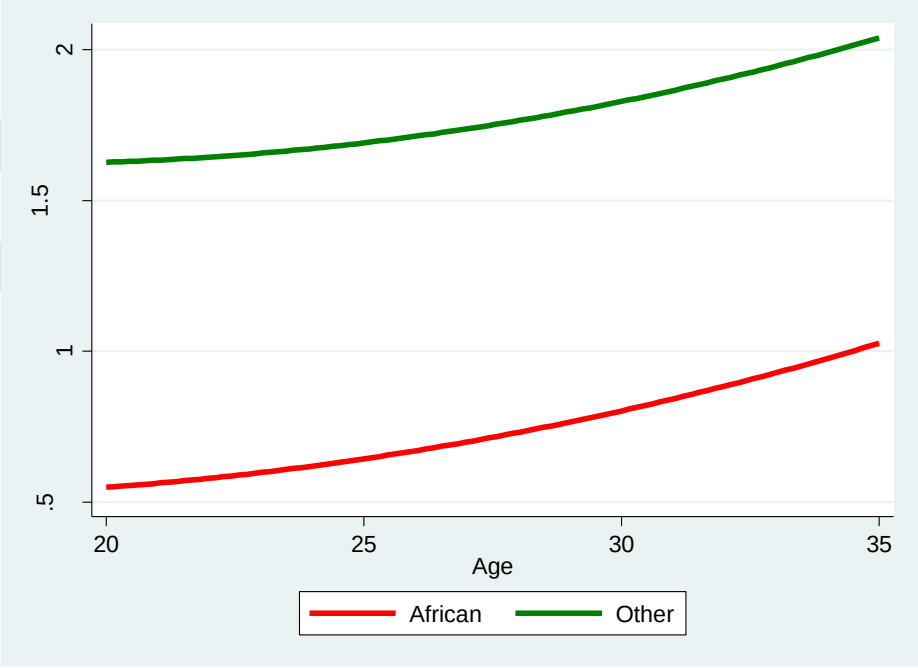


Figure 3: Proportion of age-cohort in permanent full-time employment for six or less months, by population group in the third quarter of 2010 (Source: QLFS)



[8] More than 30 hours a week

Overoptimism, and job search

While there is a relatively large literature describing the high levels of unemployment in South Africa, particularly among the youth and the less educated, there are fewer studies that explicitly examine behavioural explanations, perhaps because any behaviour is an endogenous outcome. The latter focuses on three issues in particular: labour force participation, the extent to which the search behaviour has an impact on individual outcomes, and the role that reservation wages may play. Kingdon and Knight (2000), for instance, suggest that non-searching unemployed should not be classified as not economically active because they are not distinguishable from the searching unemployed, and may just be "hampered by impediments such as poverty, cost of search, long duration of unemployment, and adverse local economic conditions" (Kingdon and Knight, 2000:1-2). Indeed, Schoer and Leibbrandt (2006) find that "search strategy is an important component of overall job-seeking behaviour for large percentages of searchers" and that "the chosen search strategy is a compromise between the most effective way of finding a job and what is actually feasible for an individual." Then, while Kingdon and Knight (2001) find that the reservation wages of the unemployed are generally higher than what these people could expect to earn in employment, Nattrass and Walker (2005) find the opposite: that most of the unemployed have reservation wages that are substantially lower than what employed individuals with the same observable characteristics are earning.

The impact of the search behaviour and reservation wages of the unemployed may be prominent since, as Eckstein and van den Berg (2007) point out, "traditional neoclassical labour market models are unable to explain long spells of possible involuntary unemployment." Fitzgerald (1998) points out that in these models "the amount of labor that workers supply is exactly equal to the amount of labor demanded by firms at the equilibrium wage." In response, a body of Search theories have emerged, which are based on the premise that "that finding a good job (or a good worker, in the case of a firm) is an uncertain process which requires both time and resources" (Fitzgerald, 1998). Search frictions arise as a consequence of imperfect information – both from the perspective of the person searching for a vacancy and from that of the firm looking to fill a vacancy (Eckstein and Van den Beg, 2007). This imperfect information, however, generally refers to "uncertainty regarding market conditions e.g. the shape of the wage offer distribution" (Falke, Huffman, and Sande, 2007). Falk, Huffman, and Sunde (2006 A) show, using a laboratory experiment, that while "[s]tandard search theory assumes that individuals know, with certainty, how they compare to competing searchers in terms of ability", they find that searchers are unaware of their relative ability. They develop an equilibrium search model with type uncertainty and non-participation where "unsuccessful search induces individuals to revise their beliefs downwards." Their model implies that there is a "declining hazard from unemployment to employment, arising due to erosion of self-confidence in search", since "search outcomes are only a noisy signal about ability, some individuals can become overly discouraged and stop search too early due to wrong beliefs, and that "workers with greater unemployment duration are less confident, and thus have a worse threat point in wage bargaining, consequently they earn lower starting wages even if they are identical in terms of their productivity." (Falke, Huffman, and Sande, 2006 B). They are unable, however, to investigate the impact of unemployment on subjective beliefs in the field, since this would "require a survey that elicits individual's beliefs about their relative abilities and job-finding chances, and their certainty about these beliefs… [which] is currently unavailable." And, despite relaxing the assumption about type certainty, their model maintains that actors are rational in that they update their beliefs when they are given better information. In Falk,

Huffman, and Sunde (2006 A), on the other hand, they find that people do not fully update this assessment in a manner that would be consistent with Baye's law – which they suggest happens because "people find it painful to receive negative information about their relative ability." In other words, while their model assumes that individuals are uncertain about their relative ability, they are still rational optimizers. Furthermore, their model does not allow workers to have a preference for positive beliefs, which is at odds with the psychology literature where here is robust evidence that people are generally overoptimistic about future life events (Van den Steen, 2004).

Beaulier and Caplan (2007) draw attention to a strand of behavioural literature that they believe provides increasingly robust evidence questioning this assumption. In one particular set of laboratory experiments, Kruger and Dunning (1999) show how actors who are not able to recognize their own incompetence in a particular domain may have inflated self-assessments within that domain because they are unable to evaluate competence in this domain. These findings may serve as a further explanation for why some people do not revise their expectations when they are given better information. The crucial difference between this problem, and the problem of estimating the effect of high reservation wages, is that, in the case of the labour market, high reservation may simply be a speculative guess or a rational response that considers the utility from unemployment, the cost of searching, or the information the agent has on his/her relative probability of finding employment. In other words, the stated reservation wages of young people may not reflect the wage they will accept if offered a job, nor does it necessarily serve as an indication of a person's expected wage since the expected wage may be determined with limited information. The Dunning-Kruger bias, in contrast, relates to a deficiency in meta-cognitive skill within the particular domain – individuals will overestimate their reservation wage and /or their employment probability because, at low skill levels, they are unable to recognize 'competence' in others and they are unable to gain insight into their estimates using social comparison information. This, in turn, may have an effect on their behavior – along a number of different dimensions including, amongst others, the decision to enter and exit the labour market, how they search for jobs, the jobs they accept, and their tenure in a job.

Van den Steen (2004) however, argues that overoptimism is not necessarily 'irrational'. He constructs a model that shows how "rational agents with different priors tend to be overoptimistic about their chances of success". The premise of the model is that if agents make random errors in their subjective assessment of the probability of success associated with an action, and they generally select the action they believe offers them the highest probability of success, they are more likely to select actions where they overestimated the probability of success, and are consequently overoptimistic. Santos-Pinto and Sobel (2005) suggest a similar mechanism to describe "individuals' positive self-image in subjective assessments of their relative ability". While both Van den Steen (2004) and Santos-Pinto and Sobel (2005) model positive self-image for individuals who use "different criteria to evaluate their decisions" and who then make choices, the latter also permit individuals to have different skill endowments (Santos-Pinto and Sobel, 2005). This allows Santos-Pinto and Sobel (2005) to model negative self-image, and to arrive at conclusions that are not possible in Van den Steen's (2004) model. More importantly, they argue that "optimism and positive image are widespread", and that their descriptive model suggests that "positive self-image may not be a compelling reason to change modeling approaches." Nevertheless, while they believe that their model is consistent with Kruger and Dunning's (1999) evidence that "the self-image if high performing individuals is lower than their objective performance", they acknowledge that modifying beliefs by suppressing negative signals and overemphasizing positive signals is "outside of our framework."

The Labour Market Entry Survey

The Labour Market Entry Survey (LMES) is the baseline study of the participants in the randomized evaluation of the effectiveness of a targeted wage subsidy on the employment outcomes of young Africans. The study focuses on two samples – a group of approximately 2500 young people who were randomly identified in selected enumeration areas, and a second group of approximately 1500 that were attached[9] to several Department of Labour Labour Centres. In 2010 most of the respondents were between the ages of 21 to 25. Since mobility is crucial to understanding the labour market dynamics of these young people, the survey also followed those enumeration area respondents who had moved out of the original sampling area during the period between the two waves. At the time of writing, approximately 1700 respondents had been surveyed in the 2011 round – 1050 from the original Gauteng sample, and 650 from the Limpopo sample. Of these, 43% were male and 55% were 23 or younger at the beginning of 2011.

In the 2010 wave of the Labour Market Entry Survey, the respondents were asked two questions that were similar to each other:

1. How good to you think your chances of finding such a job in the next year are? The 'such' a job refers to a job that meets the time and minimum wage requirements of the respondent, which were asked just before this question[10].
2. On a scale from 0 to 10 - What do you think is the likelihood of you getting employed in the next 12 months? This question was asked directly after the first.

The data shows that a large number of these answers do not overlap – for example, of those that answered "Very good" to the first question, a significant number answered between 0 and 6 in the second question. There are a number of possible explanations for why the answers do not always correspond: The first is that, in the minds of the respondents, they refer to different types of jobs (the first question is more specific. Roberts and Suchecki (2010) show that there is a significant difference in the proportion of people in this sample who believed they are self-reported employed and those that are defined as employed using behavioral characteristics e.g. engaging in unpaid work, or working for someone else for at least one hour a week. This has implications for questions that leave the interpretation of 'work' or 'job' up to the respondent. The second is that the enumerators measured the answers incorrectly. In the case of the first question the enumerators may have selected the first two available answers more frequently – perhaps because the respondent prompted them before they had completed prompting the respondents. In the case of the second the enumerators could have entered in the most common answer, or prompted the respondents to choose an answer. A third explanation is that the respondents did not understand the questions, answers, or the associated probabilities attached to these answers.

[9] They visited the centre during the time of the interviews for, amongst other reasons, to process UIF payments, to register on the Department of Labour' job seekers database, or to obtain assistance and counselling with regards to searching for employment

[10] H1.6 (days) How many days per week would you be prepared to work? H1.6 (hours) How many hours per day would you be prepared to work? H1.5 What is the absolute MINIMUM amount of money you are prepared to work {{hours}} hour(s) a day for {{days}} day(s) a week for 4 weeks a MONTH - with NO other benefits?

Despite these differences, the vast majority of the respondents who answered both questions believed that, in at least one of the questions, their chances were above average. Defining[11] the answers in question 2 of 0, 1 and 2 as 'Very poor', of 3 and 4 as 'Poor', of 5 as 'Neither good nor poor', of 6 and 7 as 'Good', and of 8,9, and 10 as 'Very good' allows us to compare these proportions: For both questions over 60% of the respondents believed their chances were "Very good" or "Good".

Estimating 'incompetence': Hypotheses and questions

Kruger and Dunning (1999: 1121) suggest that people that overestimate their ability within a particular domain suffer "a dual burden: Not only do these people reach erroneous conclusions, and make unfortunate choices, but their incompetence robs them of the metacognitive ability to realize it." **It is important to note that Kruger and Dunning (1999: 1122) define incompetence as "a matter of degree and not one of absolutes. There is no categorical bright line that separates "competent" individuals from "incompetent" ones. Thus, when [they] speak of "incompetent" individuals [they] mean people who are less competent than their peers." They have also "focused [their] analysis on the incompetence individuals display in specific domains" and therefore make "no claim that they would be incompetent in any other domains". In their study, they test four predictions to show this:**

1. **"**Incompetent individuals, compared with their more competent peers, will dramatically overestimate their ability and performance relative to objective criteria."
2. **"**Incompetent individuals will suffer from deficient metacognitive skills, in that they will be less able than their more competent peers to recognize competence when they see it—be it their own or anyone else's."
3. **"**Incompetent individuals will be less able than their more competent peers to gain insight into their true level of performance by means of social comparison information. In particular, because of their difficulty recognizing competence in others, incompetent individuals will be unable to use information about the choices and performances of others to form more accurate impressions of their own ability."
4. **"**The incompetent can gain insight about their shortcomings, but this comes (paradoxically) by making them more competent, thus providing them the metacognitive skills necessary to be able to realize that they have performed poorly."

They investigated these predictions in four separate studies. In each study they "presented participants with tests that assessed their ability in a domain in which knowledge, wisdom, or savvy was crucial: humor (Study 1), logical reasoning (Studies 2- and 4), and English grammar (Study 3)." In all the studies they asked participants to assess their ability and performance in order to determine whether they would "overestimate their ability and performance relative to objective criteria" - with specific emphasis on the extent to which their estimates diverged. The incompetent (those with the lowest scores) were predicted to greatly overestimate these scores. In the third study they showed the participants the responses to the tests by their peers, and asked them to indicate which of these they believed performed better –

[11] There are many different ways of mapping the scale to these categorical answers, since there is an overlap. The aim of this mapping is merely to highlight the differences above and below the average – which is 5 or 'Neither good nor poor', although this may also reasonably be interpreted as being between 4 and 6.

predicting that the incompetent individuals would be less accurate. They also asked the respondents to reassess their own ability, and predicted that incompetent individuals would not learn from their peers. Finally, in the fourth study they gave "participants training in the domain of logical reasoning and explored whether this newfound competence would prompt incompetent individuals toward a better understanding of the true level of their ability and test performance."

To show, then, that the young people in the LMES sample are 'incompetent' when it comes their assessment of their probability of finding employment, it is necessary to prove that a) they have highly inflated sense of their probabilities of finding employment market when compared to objective criteria – both in absolute and relative terms, and b) that they are unable (unwilling) to revise this self-assessment when they are presented with better information – because they are (remain) unaware that this assessment is inflated (Kruger and Dunning, 1999).

The original Kruger and Dunning (1999) study included less than a hundred observations, was fairly intensive, and subject to high level of control. While it was not be possible to replicate these studies in the 2011 Labour Market Entry Survey, several questions were included in this round of survey to test the extent to which these young people are prone to this `bias' when it comes to the assessment of their probability of finding employment. The questions are intended to test three hypotheses.

- Hypothesis 1: Young people dramatically overestimate their probability of including a permanent full-time job that pays them substantially more than the minimum wage they are willing to work for.
- Hypothesis 2: Those young people that dramatically overestimate their probability suffer from deficient metacognitive skills in terms of assessing their probability of finding permanent full-time employment, in that they are unable to recognize 'competence' – be it their own or anyone else's.
- Hypothesis 3: Those young people who dramatically overestimate their probability are unable to gain insight into the true probability of finding such work.

The paper then tests:

- Hypothesis 4: Young people gain insight into their true 'ability' with age. In other words, this paper hypothesizes that competence (in terms of application-specific skill and the meta-recognition of this skill) is monotonically increasing in the duration that people spend on an application, and that this duration is monotonically increasing in age within those domains that are universal[12] e.g. education, relationships and employment. The hypothesis is specified in this way since search and expectations are endogenous: People who have higher expectations are more likely to search for work and thus 'learn' from their experience. If this leads them to revise their expectations downwards, they may as Falk, Huffman, and Sunde (2006) suggest be more inclined to stop searching.

[12] It is also possible that meta-competence increases with age if people learn from their experiences in other domains where the probability of learning (across and within domains) is monotonically increasing with age. It would be very interesting to test this.

Both the 2009 and 2010 rounds of the LMES include the question "What is the MINIMUM MONTHLY wage you are prepared to work 8 hours a day 5 days a week for?" In addition to this question, the following questions were added to the third round in 2011:

For Hypothesis 1:

- Question 1: How good do you think your chances are of finding any PERMANENT FULL-TIME job in the NEXT 3 months that PAYS R{reservation wage (min = R 1500) multiplied by m (=1.3)} A MONTH, if you wanted such a job? – VERY high (VERY good); high (good); average (neutral/neither good nor poor/50-50); low (poor/bad); VERY low (VERY poor/VERY bad). This is intended to determine whether the respondent dramatically overestimates his/her chances of finding such a job. Earlier it was shown that the chances for individuals in this age-group of being in a permanent full-time job (work) are very low (less than 20%). Since the reservation wage is determined by the information that the respondent has, and the aim is to test their assessment of their probability, this amount is multiplied by 1.3 (130%)[13] to ensure that the amount used in the question is an overstatement of what the respondent is willing to work for. Using a percentile scale is not appropriate in this context, since there may be a high variance in the mapping of scale answers to percentiles. Instead, the answers to the questions will map the individual's subjective assessment to the following quintiles: Above 80% - VERY high (VERY good); Between 60 and 80% - high (good); Between 40 and 60% - average (neutral/neither good nor poor/50-50); Between 20 and 40% - low (poor/bad); and Less than 20% - VERY low (VERY poor/VERY bad). The minimum reservation wage used in the question is set at R 1500 since the minimum monthly wage of domestic workers[14] in this country is set at R 1506.36 for the period 1 December 2010 to 30 November 2011.

To test hypothesis 2 there are two questions.

- Question 2: How good do you think YOUR chances of finding SUCH a permanent full-time job are when COMPARED to other young people who LIVE IN THE SAME AREA as you, if you wanted such a job? - Much better (much higher); better (higher); the same (neutral/50-50); worse (lower); much worse (much lower). This question allows us to establish how the respondent views his/her probability relative to the other young people. The question does not include any reference to education or skills, but is more general – and attempts to assess to what extent the respondent overestimates his/her ability relative to his/her peers (the "above-average" effect).
- Question 4: What do you think the chances of SOMEBODY ELSE with the same education living in your area has of finding a permanent full-time job in the next 3 months that PAYS R{reservation wage multiplied by n (=0.9, min = R 1500)} A MONTH? - Very high (very good); high (good); average (neutral/neither good nor

[13] In 2009 the median reservation wage for the sample was R 3500. The LMES also asked the respondents what they believed an acceptable wage was – the median for this question was R 4000. The second figure is 115% that of the first. In order to ensure that there is a 'dramatic' difference the percentage point difference (15) is doubled.

[14] The minimum wage in South Africa is determined by sector/industry, for particular job types. The minimum wage for domestic workers is the lower bound.

poor/50-50); low (poor/bad); very low (very poor/ very bad). This is a more specific extension of question 2, where the wage is multiplied by 0.9 (90%) in order to determine if the respondent is capable of assessing the competence of others in this domain – in other words, if the respondent is able to see a connection between significantly lower wages and a higher (or at least equal) probability of finding a job.

For hypothesis 3, the enumerators are prompted to relate the following statement:

- "Wits University research shows that the chances of young people with the same education as you and living in your area finding SUCH[15] work in the next 3 months are VERY low (VERY poor/VERY bad)."

Then, they were asked:

- Question 3: NOW that I[16] have told you this, how good do you think your chances are of finding any permanent full-time job in the next 3 months that PAYS R{reservation wage multiplied by m (=1.3)} a month, if you wanted such a job? - Very high (very good); high (good); average (neutral/neither good nor poor/50-50); low (poor/bad); very low (very poor/very bad).

Since unemployment is high, particularly among young people, those young people who believe that their chances of finding such a job are very low, given the high rate of unemployment in this country, are the most 'competent' in the domain of assessing their probability of finding employment. It follows that even naïve but competent individuals will update their assessment with this information; provided that they understand the statement and that they believe the enumerator and/or Wits University research. Since the respondents had been part of this Wits University study for two years by the time they were asked this question, this paper argues that they have very little reason to 'rationally' doubt[17] the credibility of the statement unless there are unobservable characteristics associated with these individuals that significantly improve their probability.

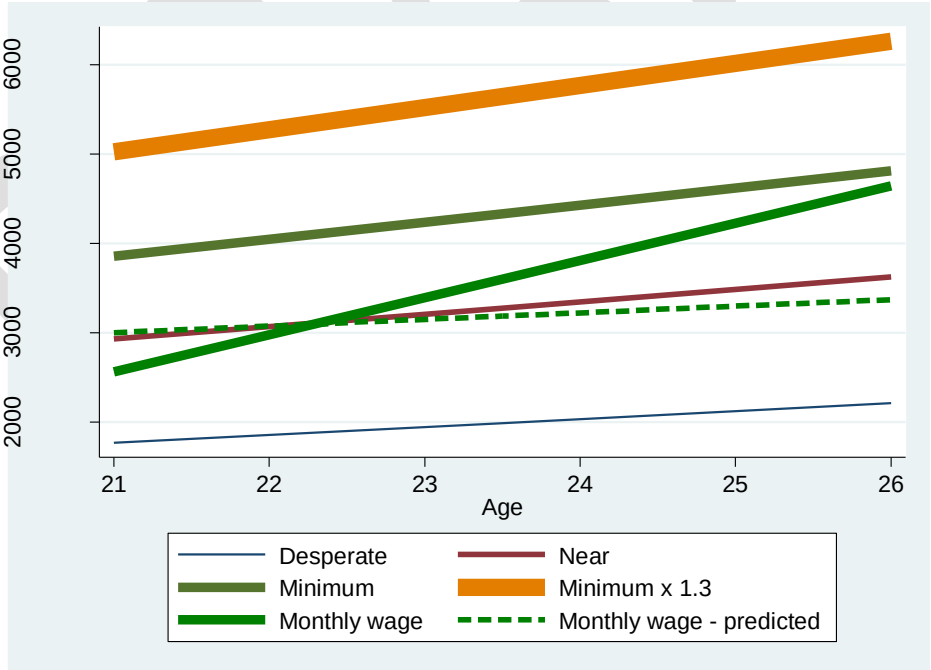
[15] Statement follows directly after question 1 and 2
[16] The enumerator
[17] Only 7% of the respondents indicated that they did not believe the research and 20% indicated that they do not believe the research applies to them.

Analysis

Reservation wages for full-time employment

Figure 4 presents a linear prediction plot of the minimum wages and both the actual and predicted monthly wage in permanent full-time wage-employment for each age-cohort in the sample. There are two additional measures of the minimum wage that add qualifiers to the original question: the second, which is "What is the MINIMUM MONTHLY wage you are prepared to work 8 hours a day 5 days a week for **NEAR to where you live**?", and the third, which is "What is the MINIMUM MONTHLY wage you are prepared to work 8 hours a day 5 days a week **if you were DESPERATE for a job**." All three are increasing in age, and the first is approximately R 1000 higher than the second, which is approximately R 1000 higher than the third. Both the observed and predicted monthly wage for full-time wage employment are increasing in age but, more importantly, both are significantly lower than the average for the first and this amount multiplied by a 1.3, and the latter is between R 1500 and R 2500 greater than the observed monthly wages. The predicted monthly wage is estimated using Ordinary Least Squares (OLS) with education (having a Matric; and then, separately, having a certificate, a degree or diploma, or any 'tertiary' qualification that took less than six months to complete), a dummy variable if the respondent has more than six months of full-time work experience, one for if the respondent has more than six months of part-time work experience, and the respondents score out for six basic math questions[18].

Figure 4: Minimum wages, and both the actual and predicted monthly wage in permanent full-time employment, by age

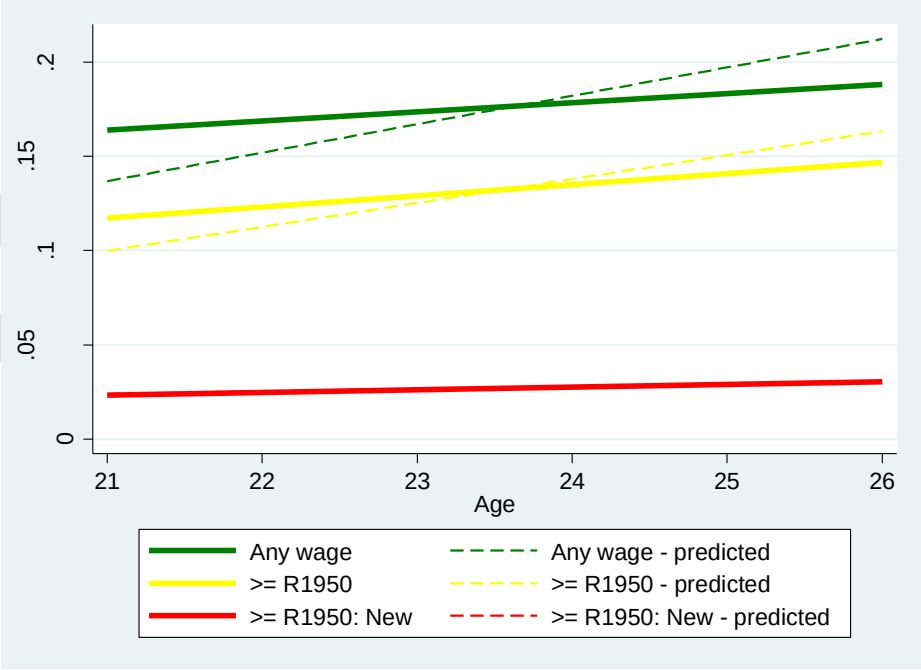


[18] The regression also controls for the sample groups (Enumeration area or Labour Centre, treatment or control) and cluster standard errors (the area the respondent resides in).

Probability of being in permanent full-time wage employment

At the time they were interviewed, approximately 45% of this respondents in the sample were wage or self-employed, 29% searching unemployed, 8% discouraged job-seekers and 19% were not economically active (NEA). Of the employed, only 36% were in permanent full-time employment (which includes indefinite informal employment). Figure 5 presents the linear prediction plots of the proportion of respondents who are in permanent full-time wage employment, those that are in permanent full-time wage employment and earning more than R 1950 a month, those that having been working in such jobs since the beginning of 2011, and the predicted probabilities for the same characteristics used in the wage specification. It shows that less than 20% of the respondents in the sample are employed in permanent full-time wage jobs, and that less than 5% have recently been employed in jobs that pay more than R 1950. While these proportions are also increasing in age, these two figures confirm that the probability of any one of the respondents finding a job that pays their stated minimum wage in three months is likely to be very low, regardless of their age, and that for most the likelihood of finding such a job paying 30% more than their stated minimum wage is closer to zero. Table 3 suggests this is not, however, a commonly held view among the young people in the LMES survey sample: only 19% of the sample used in this paper believed their chances of finding such a permanent full-time job that pays significantly more than their reservation wage in the next three months was "Very low".

Figure 5: Proportion of respondents in permanent full time employment and the predicted probability of being in full-time employment, by age



Hypothesis 1: Young people dramatically overestimate their probability of including a permanent full-time job that pays them substantially more than the minimum wage they are willing to work for

In addition to the high proportion who did not regard their chances as low, approximately 53% believed that their chances were better or much better than the other young people living in the same area. These results are not, as the models on over-optimism (Van den Steen, 2004; Santos-Pinto and Sobel, 2005) argue, unexpected and do not by themselves imply the respondents are 'irrational'. However, Table 3 presents evidence to support the argument that a significant proportion of these respondents may be regarded as 'incompetent and unaware' since they are unable to recognize their own relative probability, unable to recognize competence in others in that they do not associate lower reservation wages with a higher or an equally very low probability, and because they are unable to gain insight into true probability even when they are given reliable information about the objective probability of young people with the same education and skills.

Table 2: Answers to the questions

Measure	Proportion (%)	95% Confidence Interval (%)	
		Lower	Upper
Question 1			
Very low	19	17	21
Low	21	19	23
Average	26	24	28
High	27	24	29
Very high	8	7	10
Question 2			
Much worse	4	3	5
Worse	15	13	16
The same	28	26	31
Better	43	41	45
Much better	10	9	12
Question 3			
Very low	27	25	29
Low	23	21	25
Average	21	19	23
High	23	21	25
Very high	6	5	7
Question 4			
Very low	11	9	12
Low	24	22	26
Average	32	30	34
High	29	27	32
Very high	4	3	5

Table 3: Proportion of respondents that overestimate their probability, are unable to recognize their own competence, are unable to recognize competence in others, and who are unable to gain insight into their true probability

	Proportion (%)	95% Confidence Interval (%)	
		Lower	Upper
Hypothesis 1:			
Question 1 (Not low or very low)	60	58	63
Hypothesis 2:			
Unable to recognize own competence	43	41	46
Question 4			
Higher	40	37	42
Same	40	38	42
Lower	20	18	22
Question 2			
Unable to recognize competence in others	53	50	55
Hypothesis 3:			
Question 3			
Changed to very low	11	10	13
Lower but not very low	14	13	16
Started and stayed at very low	16	14	17
Stayed the same	48	46	51
Higher	10	9	12
Unable to gain insight into true probability	73	71	75

Hypothesis 2: Those young people that dramatically overestimate their probability suffer from deficient metacognitive skills in terms of assessing their probability of finding permanent full-time employment, in that they are unable to recognize 'competence' – be it their own or anyone else's

Unable to recognize own competence

To test the second hypothesis, this paper assigned the respondents in each general area to one of three groups in the order of their predicted probability of being in employment given their education, work experience, and a measure of their mathematical ability. Similarly, each was assigned to one of three groups based on their answer to question 2 – Low, Average and High. They were then classified as 'competent' if these groups coincided or if their answer to question 2 suggested they had underestimated their relative chances. 43% of the respondents strictly over-estimated their relative

probability, and significantly (at 1%) more of those who did also believed their probability of finding such a job (question 1) was not low or very low. It is important to point out that the reservation wage does not feature as a determinant of this probability, since the probability is only used as a relative ranking. In other words, the paper assumes that a young person with more education, work experience and 'ability' is more likely to find any such employment, regardless of her reservation wage, if she wanted such a job.

Unable to recognize competence in others

Those respondents who indicated that the probability of other young people with the same education finding a job (paying less than their reservation wage) was either equally very low or higher, were also more likely to have answered low or very low to the first question. Again, surprisingly, 20% of the respondents stated that probability of young people with the same EDUCATION finding a job earning less than the respondent's reservation wage was LOWER than the answer they had given for question 3.

Hypothesis 3: Those young people who dramatically overestimate their probability are unable to gain insight into the true probability of finding such work

When the respondents were told that the chances of other young people with the same education and skills living in their area were very low, only approximately 10% revised their expectation to very low, in addition to the approximately 16% (from the original 19%) that started and stayed at low. Approximately 14% lowered their initial expectation, but not to very low, and almost half (48%) did not revise their answer. Rather surprisingly, 10% revised their estimate upwards. While 25% of those who answered "Low" for the Question 1 revised their answer to "Very Low" for question 4, proportionally more stayed at "Low" than those who answered "Average" to "Very high" and did not revise their expectations, even though proportionally fewer of the latter revised their expectation to "Very low"[19]. Nevertheless, more than half the respondents who answered "Average", "High" or "Very high" for question 1 did not revise their expectation.

Table 4 summarizes these findings: proportionally more of the respondents who answered average, high or very high to the first question were unable to recognize their own relative probability of finding permanent full-time wage employment, or recognize that other young people with the same education were more likely to find such employment (earning less than the respondent's reservation wage). In particular, 90% of this group did not revise their expectation to very low when they were told that the objective probability of other young people with the same education and skills was very low. One explanation for this is that their reservation wages were much lower than they could reasonably 'expect' to earn. However, significantly more than half of this group had reservation wages that were higher than what they could reasonably assume to earn, if they were in employment – almost 70% of those who answered "Very low" for question 1 had reservation wages that were higher than what they could reasonably expect to earn. This raises a interesting paradox – while this group may be regarded as more competent in terms of their assessment of finding permanent full-time wage employment in the next three months than those who believed their probability was higher, their stated reservation

[19] This highlights one of the shortcomings of the question – those who answered "Low" initially have a smaller range of 'reasonable' options to choose from, and it follows then that relative competence is more likely to beget competence

wages are significantly higher than what those young people with similar characteristics are earning in such employment, and this difference is greater than for those respondents who believed their chances were better. One possible explanation for this is that this stated reservation wage reflects an average of the wage offer distribution, and not the expected wage. This explanation is supported by the data which shows that less than 5% of the respondents had reservation wages that were lower than what they could expect to earn when selection into employment is considered in the wage estimation, and only 10% of the 225 respondents that were in full-time employment at the time of the survey (less than 1% of the sample) were earning more than their reservation wage multiplied by 1.3. Furthermore, only 20% of the permanent full-time employed were earning more than their stated reservation wage[20].

Hypothesis 4: Young people gain insight into their true 'ability' with age

Hypothesis 4 is tested by defining two measures of 'competence': Individuals are competent if they do not overestimate their relative chances when compared to their peers, they are able to make the connection between lower wages and a higher (or at least equally poor) probability of finding employment, and they update their initial assessment of their probability when they are given information about the true probability (of people with the same education and skills[21]). Incompetent and unaware individuals are those who 'fail' on all three measures, and there is a group that falls between these two.

Approximately 1 in 4 of the young people in this sample can be described as incompetent and unaware when it comes to assessing their probability of finding permanent full-time wage-employment in the next three months, and fewer than 1 in 5 of the respondents are competent. While this measure of incompetence is significantly (at 1%) decreasing in age and competence is significantly (at 1%) increasing in age – as illustrated in Figure 7, this appears to be almost entirely due to the fact that relatively older young people have a relatively better probability of being in full-time permanent wage employment – as illustrated in Figure 6. Indeed, it appears that there is a positive relationship between the other measures and age – which disappears once the probability of being in permanent full-time is included in the specification. Since the equation used to determine this probability does not include age, the difference is attributed to work experience (as a proxy for skill, but also inadvertently for selection on unobservable characteristics). The difference in age is, however, maintained even when the predicted probability relates to those young people who found such a jobs over the past six months, and continues to hold when those who are 25 or older are used to determine the relative ranking of the younger respondents but are excluded from the age estimation (one problem with assigning young people to groups according to their relative probability is that the that the oldest people in the sample are the upper bound[22]).

[20] There is anecdotal evidence for another explanation: some of the respondents regarded the survey as an interview, and some believed the research team would match them with firms at some point in the future.
[21] For ethical reasons the respondents were not told "Your chances… are very low."
[22] Another approach would be to assign these individuals to groups based on their probabilities from a dataset such as the QLFS that includes workers aged 15 to 64. However, this precludes defining these groups according to the area the respondent lives in – which is important since these young people can hardly be expected to assess their relative probability against that of other young people who live far away

Figure 6: Proportion of respondents that 'fail' in each hypothesis, by age

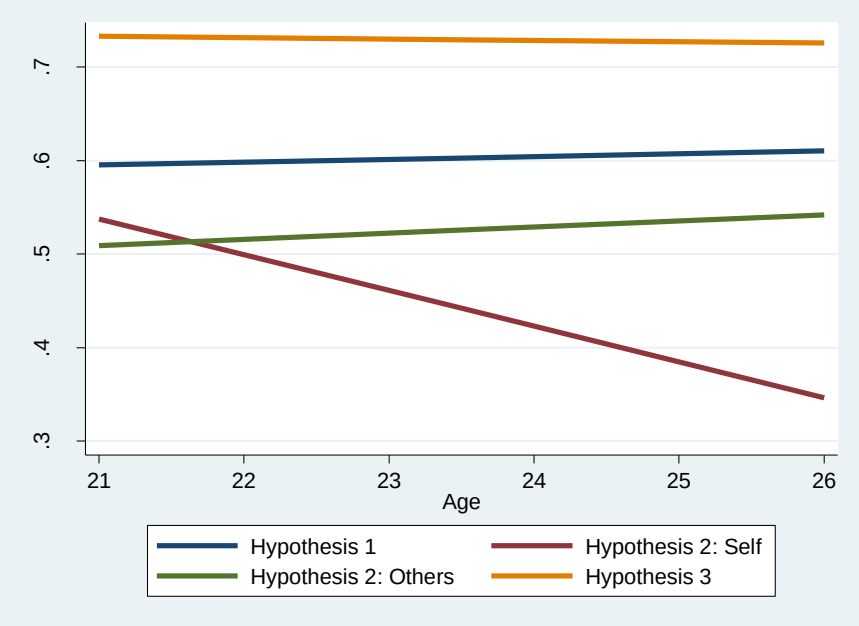


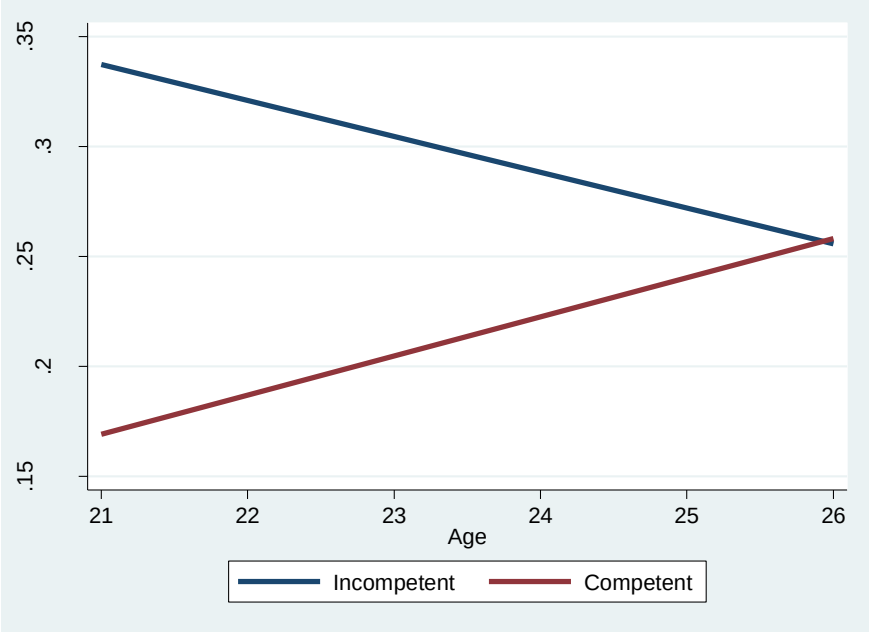
Table 4: Proportion of respondents that 'fail' in each hypothesis, for those who answered "Low or very low" and "Average, high, or very high" for the first question

Answer to question 1	Proportion	Hypothesis 2 - Others	Hypothesis 2- Self	Hypothesis 3	Incompetent	Competent
Low or very low	40	28	41	47	11	32
Average, high or very high	60	69	45	90	33	6
Total		53	43	73	25	16

Table 5: Proportion of respondents that 'fail' in each hypothesis, and that are defined as incompetent or competent, by labour market status

Status	Hypothesis 1	Hypothesis 2 - Self	Hypothesis 2 - Others	Hypothesis 3	Incompetent	Competent
Employed	63	34	56	77	20	16
Searching	61	45	51	71	26	19
Discouraged	54	56	50	68	32	15
NEA	56	57	47	69	29	15

Figure 7: Proportion of 'incompetent' and 'competent' respondents, by age



Discussion

The implications of these measures of competence are ambiguous in that inflated expectations may have both positive and negative consequences: On the one hand young people who overestimate their probability may be more inclined to continue searching or take certain risks for which the realized payoff could ultimately be higher than for those who have more 'realistic' expectations. On the other hand, incompetent young people could also make "unfortunate choices". This may include the investment they make in education and work-experience, or the extent to which they revise their reservation wage or do not search for or transition out of employment because of these investments or their perceived benefit.

The data shows that incompetent individuals were more likely to classify themselves as risk-loving, which may explain the rather counter intuitive finding that the incompetent respondents were more likely say that they would accept a permanent full-time job that pays only R 1500, but at the same time proportionally more of this group had turned down a job offer at some point. The data also points to another potentially important finding: the discouraged employed, in this sample, were more likely to be incompetent and less likely to be competent when compared to the searching unemployed – although this is again almost entirely due to the fact that proportionally more of the discouraged over-estimated their relative probability. Nevertheless, 54% of the 'discouraged' believed their chances of finding permanent full-time employment were "Average" to "Very high" and 68% of the `discouraged' did not revise their chance to "Very low" when they ,like everyone else in the sample, were told indirectly that it was. This appears to be incongruous with Falk, Huffman, and Sunde's (2006) search model with type uncertainty, and with the notion of 'discouragement' in job search. Finally, the data shows that those respondents who were searching for employment are less likely to be "Happy" or "Very happy" with their lives in general when compared to those that were employed, discouraged or NEA; and that

those respondents who were competent in terms of assessing their probability of finding permanent full-time wage employment were also less likely to be "Very happy" or "Happy" than their less competent peers.

A cross-section of data and the explicitly endogenous nature of this measure of competence (their "dual burden"), however, make it very difficult to identify any effect, and are therefore not the focus of this paper[23]. Nevertheless the findings in this paper lead to one unambiguous conclusion in that they place the labour market dynamics for the young people in this sample outside the scope of the existing search models. Even though the sample is not representative of all young people in South Africa, and does not include older workers, there is no reason to believe that these findings would not be consistent in the broader population.

Conclusion

The proportion of young South Africans in employment and permanent full-time wage-employment in particular is low, and while these proportions are increasing in age, the latter is increasing at a very low rate. Search models may be used to explain high levels of possibly involuntary unemployment. These models assume that even if workers are unsure about their relative ability, they revise both their expectations and this assessment when they are given objective information. This paper finds that this is not the case among a sample of young South Africans, and therefore argues that these search models are not able to fully explain the high rate of youth unemployment among the cohort from which the sample was drawn. This argument is, however, predicated on the author's limited information on, and understanding of, these search models, the problem of youth unemployment in South Africa, meta-cognitive bias, and econometrics.

[23] These will be explored when the data from future rounds of the LMES panel becomes available. Despite the obvious selection (the Dunning-Kruger bias is in itself a form of selection bias) problems, it would be interesting to see how incompetent individuals behave when compared those competent individuals with the same observable characteristics. Furthermore, the author of the paper may have overestimated to the extent to which such a narrow range of age would be sufficient to identify 'wisdom' as increasing with age.

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