

Information and job search intensity in South Africa

Mame-Fatou Diagne*

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Abstract

This paper analyses the role of labor market expectations in labor force participation and job search intensity. Using the Cape Area Panel Study, a longitudinal survey of urban youth in South Africa, changes in the job search status, search intensity and reservation wages of unemployed young adults are related to changes in stated subjective beliefs about the wage distribution. The empirical analysis provides evidence that unemployed young adults do not stop searching because of expected low returns to search but rather that high search costs combined with credit constraints restrict their search intensity. While increases in household income (for example through the receipt of social grants) do not explain the extensive job search decision, they are associated with higher search intensity conditional on searching. Consequently, policies that reduce search costs (through information provision) or alleviate credit constraints (for example, social grants) can raise labor market participation and search intensity.

*World Bank. mfdiagne@worldbank.org. This paper was written as part of my Ph.D. dissertation at the University of California, Berkeley. The findings, interpretations and conclusions are entirely those of the author, and not those of the World Bank, its Executive Directors, or the countries they represent. I thank my advisor, Ted Miguel, for guidance and encouragement, and Jerome Adda, Bryan Graham, Ethan Ligon and Emmanuel Saez for advice. I also thank Jeremy Magruder, Paulina Oliva Vallejo and seminar participants at Berkeley and the LSE for helpful comments and remarks.

1 Introduction

As employment falls and job vacancies become scarcer, labor force participation can also be reduced when individuals with high search or information costs and poor job prospects “drop out”. These “discouraged” work seekers, who want to work but did not take active job search steps in the relevant reference period defined by statistical agencies, disappear from official unemployment statistics. Consequently, job search behaviour, and in particular how search intensity varies with expectations and labor market conditions, can be an important determinant of official unemployment rates as well as the duration and nature of unemployment.

These issues are particularly salient in South Africa where unemployment is very high (at 25.3%¹ in the third quarter of 2010), as well as the number of “discouraged work seekers” (i.e. persons who report wanting to work but are not included in the official definition of unemployment because they did not take active steps to look for a job in the past four weeks), who account for 6.3% of the working-age population and a third of those who report wanting to work and not being employed. If search intensity increases with the returns to search as in Shimer (2004) and Pissarides (2000), an improvement in labor market conditions can raise official unemployment by enticing discouraged workers to re-enter the labor force while reducing the duration of unemployment spells. In South Africa, while the proportion of discouraged job seekers in the working-age population had been steadily increasing as unemployment increased, the reversal in unemployment trends after 2002 was not met with a fall in the proportion of discouraged job seekers (see figure 1). This could be explained by an increasing number of previously inactive persons reporting wanting work as employment conditions improved but not searching.

The responsiveness of search intensity to wage or employment expectations is important to predict and analyze such fluctuations in labor force participation and unemployment as well as to design policies aimed at reducing poverty. A simple job search model with variable search intensity and uncertainty about the wage distribution provides a framework for analysing the impact of various policies on the search decisions of unemployed youth. The analysis uses the Cape Area Panel Study, a micro panel dataset that contains information on job search, employment, and subjective beliefs of young adults in urban South Africa. Empirical estimates are obtained by relating changes in the stated labor market expectations

¹The official unemployment rate has been declining since September 2002, when it reached 30.4%.

of young unemployed individuals in South Africa to their search status, search intensity and reservation wages.

Empirical results do not suggest that unemployed young adults stop searching because of expected low returns to search but rather that high search costs combined with credit constraints restrict their search intensity. Consequently, policies that reduce search costs (through information provision) or alleviate credit constraints (for example, through social grants) can raise labor market participation and search intensity.

2 Background: unemployment, transfers and credit constraints in Cape Town

Search intensity and credit constraints A key assumption in this paper is that higher search intensity raises the likelihood of receiving an acceptable job offer. If, as shown in Magruder (2010), jobs are allocated through social networks for example, the link between search intensity and employment can be weakened. Yet, in the sample of young adults interviewed in the Cape Area Panel Study, search intensity is relevant, at least in the expectations of the unemployed. Unemployed young adults (whether searching or not) state that the best job search method for them are going on a training course, submitting a CV, enquiring at workplaces, starting their own business and responding to adverts and notices (see figure 3). Only 1.6% state that relying on household members (and 3.2% on friends or family not in the household) is the best job search method. When non-searching unemployed individuals (the discouraged work-seekers) were asked why they were not looking for work, the most quoted reasons were the unavailability of jobs (29%), high search costs (14%) or a combination of both (8%) (see figure 2).

This suggests that beliefs about labor market conditions and credit constraints are important determinants of job search. The possibility of binding credit constraints for search also appears in the difference between the opinions of the unemployed about useful search methods and their actual search behavior. Costless or inexpensive search methods (such as relying on household members, on relatives or friends, or waiting at the road side where casuals are employed) are used even when the respondent thinks they are not useful. Conversely, the proportion of those engaging in costly search methods (e.g.: contact employment agencies, start own business, or submit a CV) is much lower than those who think that they

are useful (see figure 4).

Social grants and informal unemployment insurance While there is no universal national unemployment insurance program in South Africa², young adults may receive some disguised unemployment benefits (in the form of the disability grant) and informal insurance benefits, in the form of family transfers and flexible household composition arrangements. Such benefits could, for example, increase when a grand-parent receives a pension, a large cash transfer which represents twice the average per capita income of the Black population. Analysing a longitudinal sample of households in a poor district of KwaZulu-Natal, Ardington et al. (2009) find that when a household member begins receiving the old age pension, employment increases among prime-aged adults (aged 17-51) as the increased household resources are pooled and used to fund labor migration and as pensioners care for children³. While young adults in our sample have less reasons to become labor migrants (they already live in a large urban center), the receipt of grants can allow greater search intensity by alleviating the limiting effect of credit and childcare constraints on costly search.

With the exception of the old-age pension and the disability grant, other grant amounts are low⁴. They are only a fraction of the average wage expectation (R2500) and the average reservation wage (R2200) of unemployed young adults in wave 3.

3 Data

3.1 Survey description

The empirical analysis uses the Cape Area Panel Study (CAPS)⁵, a longitudinal survey of 4,800 young adults in Cape Town, South Africa (Lam, Seekings, and Sparks, 2006). This

²The Unemployment Insurance Fund (UIF) provides benefits for workers who had contributed to the fund before becoming unemployed. Such benefits are not available for young adults in our sample, who are mostly looking for their first job.

³An earlier cross-sectional analysis had shown much reduced labor supply among young men living in a three-generation household (Bertrand et al., 2003), but this can be partly explained by selection mechanisms, with unemployed youth moving into or remaining in a household with pension income (Edmonds et al., 2005).

⁴the disability grant was R820 per month in 2006, the old age grant was R960 per month in 2008 and the child support grant was R190.

⁵The Cape Area Panel Study Waves 1-2-3 were collected between 2002 and 2005 by the University of Cape Town and the University of Michigan, with funding provided by the US National Institute for Child Health and Human Development and the Andrew W. Mellon Foundation.

urban survey consists of four rounds over five years (2002-2006) and is a representative sample of youth aged 14 to 22 in 2002. Only the first three rounds are used in this analysis.

The data contains information on the occupation of young adults (enrolled, working, unemployed or inactive) in all waves. Detailed search information was collected in all periods, including notably job search status, reservation wages, costs, duration and methods of search. One rare feature of the data is the inclusion of variables measuring beliefs and expectations (expectations about the mean wage, employment probabilities, chances of having a good job, reservation wage, etc). Up to three young adults were intensively interviewed in every household and the survey also provides information on household members beside young adults (including their education, labour market status, wages and shocks such as the receipt of government grants).

Summary statistics are presented in tables 1 and 2. Non-searching unemployed individuals (the “discouraged” seekers) have almost one year less education than searchers; they also come from poorer households, had lower test score results on the ability test that was administered to all young respondents at the beginning of the survey. However, their estimates of the probability that they will be employed in three years is similar to that of searchers, as well as their average reservation wage. The proportion who have a social grant recipient in the household is also similar across the two groups. Unemployment spells are long: the average search duration for searchers is almost nine months.

Attrition While the panel structure of the data allows estimating changes in search intensity or status associated with changes in beliefs or nonwage income, attrition is an important concern. In the CAPS dataset, attrition between wave 1 and wave 3 was about 25%, mostly due to migration. In the third wave (2005), occupation information was not available for a third of the initial young adult sample. Attrition was higher among the unemployed than enrolled and working youth. It was particularly severe among discouraged job seekers and inactive respondents, half of which did not provide information on their occupation in 2005 (see table 2). Attrition was larger among Whites and Blacks than Coloureds. White graduates migrated to attend university and/or go abroad. Many Black youth migrate between Cape Town and other areas within its Eastern Cape hinterland. Such migratory patterns are likely to correlate with perceived returns to search and employment opportunities. This attrition problem was attenuated by information collected from other household members or neighbors about the current location and occupation of the young adult. After using this

information, data on the occupational status of respondents was missing for 16% of young adults by wave 2 and 24% by wave 3 (after three years). Among respondents for whom information on occupation in 2005 was missing, this information was provided by a member of the original household in one third of cases. 67% of those who refused to or could not respond in 2005 were inactive, i.e. were neither looking for work nor wanting work. They are mostly young females who were unemployed (whether searching or not) and no longer wanted to work as they had children and devoted to child-rearing (table 3).

3.2 Variable definitions: occupations, search intensity and subjective beliefs

Occupation classification Young adults are grouped into 5 mutually exclusive categories: enrolled in school, working, unemployed-searching, unemployed-discouraged (not searching but wanting to work) and inactive (not working, not enrolled, and not wanting to work). The unemployed are those who declared wanting to work, regardless of their job search status. This category corresponds to the broad definition of unemployment. It includes both those who actively searched for a job in the past 30 days (who are the only ones counted in the official definition of unemployment) and those who want to work but did not search for work in the past 30 days (the “discouraged” job seekers). Finally, “inactive” individuals are those who are neither enrolled in school nor working and do not want to work. They are mostly females engaged in household work and totally withdrawn from the labor market.

Measurement of search intensity A finer measurement of job search is provided by what young adults actually did to look for work in the past month. The responses were coded into 10 categories.⁶ As in Shimer (2004), search intensity is proxied by the number of search methods. This number ranges from 0 to 10, with searchers using 2 search methods on average. Educational attainment is an important determinant of the type and number of methods.

⁶These include “Sought assistance from members of my household; sought assistance from friends or relatives who are not in household; contacted an employment agency or trade union; enquired at workplaces, factories, homes or other possible employers; placed or answered advertisement(s); looked in newspapers or on noticeboards or the internet; waited at a place where casual workers are hired; submitted/sent CV to employers; tried to start own business; other”. Some of these categories were recoded (grouped) to achieve a classification of search methods that is consistent across survey periods

Measurement of subjective beliefs In all periods, all young adults were asked about their monthly (as well as their weekly and daily) reservation wage:

- “*What is the absolute lowest monthly take-home wage that you would accept for any full-time work?*”

In waves 2 and 3, they were also asked questions about a “typical wage”:

- “*What do you think is a reasonable take-home monthly wage for a full-time job for a person of your age, with your education, and skills?*”

Subjective expectations about the probability of unemployment over the next few years were only elicited in the first wave. However, subjective probabilities of employment in the short- and medium-run were elicited in all periods:

- “*What do you think are the chances that you will be working in December/ in March next year/ in 3 years’ time?*”

Also, a more qualitative question was asked in all periods, about the probability of getting a well-paid job:

- “*What do you think are the chances that you will ever get a job that pays well?*”

4 Theoretical model

A suitable framework for this analysis is provided by the model of sequential search with variable search intensity of Benhabib and Bull (1983), which is extended to account for uncertainty about the wage distribution and credit constraints. Similar to Shimer (2004) and Pissarides (2000), search intensity increases with the returns to search, but rather than a representative agent general equilibrium model, the decisions of heterogeneous individuals are analysed in partial equilibrium to account for differences in search intensity and labor force participation.

4.1 Uncertainty over the wage distribution

Job offers w are assumed to be lognormally distributed with unknown mean μ and known⁷ variance σ^2 . Individuals therefore need to form expectations of the average wage for their

⁷The case of unknown variance is not considered. Note that expected income from search is larger when the variance of offers is larger (Burdett and Vishwanath, 1988).

skills level. These subjective expectations depend on information signals X_t , coming from the wage offers they observe during search and the wage offers accepted by members of their social network. Let $\tilde{\mu}_{i,t}^L$ denote these subjective expectations (conditional on the information signals received by individual i up to period $t-1$):

$$E_{it}(\mu|X_{t-1}, \dots, X_0) = \tilde{\mu}_{i,t}$$

$\tilde{\mu}_{i,t}$ is the individual's subjective expectation of the mean wage for the relevant education level ("typical" wage for someone with their age, education and skills) at time t . It is the prior mean of μ at time t , conditional on past information.

Let $\phi(\cdot; \tilde{\mu}_{i,t}, s)$ be the p.d.f. of w given beliefs about the mean wage $\tilde{\mu}_{i,t}$ and search intensity s . ϕ is increasing in s and $\tilde{\mu}_{i,t}$, as illustrated in figure 5. An increase in search intensity s raises the expected return to search both by increasing the variance of wage draws (the variance of the highest wage out of s offers) and because it increases the expected wage offer. Another reason why high search intensity can be valuable is driven by uncertainty over the wage distribution and learning, which can be considerable in high unemployment areas or families (Diagne, 2009). With higher search intensity and therefore more information, individuals can avoid dropping out due to overpessimism; they also avoid staying in frictional unemployment for too long due to overoptimism.

4.2 Search decision

Variable search intensity In every period, an individual with a job offer w has 3 choices: to accept and work at wage w , to search for one additional period with intensity s^* or to remain idle and get benefits b . Assume additionally that all individuals receive non-wage income g . Accordingly, the value of a wage offer w at time t is:

$$V_t(w) = \max \left[w + \beta V_{t+1}(w), b - cs_t^* + \beta \int_0^\infty V_{t+1}(\omega) \phi(\omega; \tilde{\mu}_{i,t}, s) d\omega, b + \beta V_{t+1}(b) \right] \quad (1)$$

Search intensity s_t^* is the optimal search intensity if searching; it is the amount of search s that maximises the second expression in equation (1). It is defined by the first order condition:

$$c = \beta \int_0^\infty \frac{\partial \phi(\cdot; \tilde{\mu}_{i,t}, s)}{\partial s} V_{t+1}(\omega) d\omega \quad (2)$$

Reservation wage If searching, the reservation wage is defined by the comparison between the first two terms of equation (1):

$$w_t^* = b - cs_t^* + \beta \left[\int_0^\infty V_{t+1}(\omega) \phi(\omega; \tilde{\mu}_{i,t}, s) d\omega - V_{t+1}(w_t^*) \right] \quad (3)$$

Learning during job search implies declining reservation wages (declining with unemployment duration) due to the selection process (Burdett and Vishwanath, 1988). This is because if an individual receives an offer higher than his reservation wage, he accepts and enters employment; whereas if he observes only low offers, he will update his expectation of mean wages downward.

Credit constraints With credit constraints, the choice of the optimal search intensity s may be limited by the following condition:

$$g + b - cs_t^* > 0 \quad (4)$$

4.3 Empirical implications

Increase in wage expectations An increase in the subjective expectation of the mean wage $\tilde{\mu}_{i,t}$ makes search more attractive relative to working (accepting an offer) and discouragement. It also raises optimal search intensity s_t^* and the reservation wage w_t^* . If this increase does not reflect the true distribution and the individual is overoptimistic, this increase in $\tilde{\mu}_{i,t}$ can extend the duration of frictional unemployment. Conversely, if the individual is overpessimistic, a low $\tilde{\mu}_{i,t}$ can lead to dropping out from search.

Increase in unemployment benefits or nonwage income An increase in unemployment benefits b has an ambiguous effect on search: it raises s_t^* , the optimal search intensity conditional on searching (from equation (2), because $V_{t+1}(\omega)$ increases with b ⁸), but it also makes unemployment (whether searching or not) more attractive relative to work. The increase in the optimal search intensity can be reinforced by credit constraints: the increase in b can relax the budget constraint of equation (4) and allow the individual to raise search intensity to the optimal level. The increase in unemployment benefits also raises the reser-

⁸See Benhabib and Bull (1983) for a proof.

vation wage and therefore can increase frictional unemployment.

Decrease in search costs A decrease in search costs leads to an increase in optimal search intensity and the reservation wage. It makes search more attractive relative to work and discouragement. If credit constraints are binding then the decrease in search costs can lead to beginning searching. This can increase frictional unemployment as the number of searchers increases; but for every searcher, the expected duration of unemployment decreases.

5 Empirical results

5.1 Empirical approach and identification issues

The empirical approach relies on estimating using OLS (or logistic regressions) , equations of the form:

$$y_{it} = \alpha_i + \nu_t + \beta \tilde{\mu}_{i,t-1} + \delta b_{it} + \epsilon_{it} \quad (5)$$

where y_{it} is an outcome (such as search status or search intensity), $\tilde{\mu}_{i,t}$ is the individual's stated subjective belief about the mean wage, b_{it} is an indicator of nonwage income (such as the receipt of a grant), ν_t is a year fixed effect and α_i is an individual fixed effect.

While the main specification is based on using fixed effects (estimating the effect of changes in beliefs on changes in search behavior), simple OLS results with controls for individual characteristics (such as race, age, gender and years of education) are also presented, replacing year fixed effects by z_{it} , a vector of time-varying individual characteristics in equation (5).

The regressors are lagged to account for the endogeneity introduced by the fact that individuals are learning about the wage distribution as they are searching. This mandates caution when interpreting the effect of changes in beliefs on occupation (work, search or drop out of the labor force). Indeed, individuals who are still searching at time t have only received low wage offers (below their reservation wage) in preceding periods and therefore are more likely to have updated downwards their beliefs about the mean wage by time t . This is related to the issue of the appropriate length of a period, which could be quite short, whereas the estimation relies on the sample periods, lasting one to two years.

5.2 Search

Table 4 shows raw and marginal effects for the logistic regression of the binary search decision (search/not search) as a function of beliefs. There is no significant effect of subjective beliefs about the wage distribution on the extensive margin of the search decision. This is true with and without individual fixed effects. This could be expected in a high unemployment and low nonwage income context, in which the probability of employment is likely to matter more to the search decision than wage expectations.

Likewise, the receipt of a grant (for example a household member who becomes a pensioner) and changes in household income have no significant effect on search (extensive margin). This is true when pensions or other types of grants are considered and is consistent with the low grant amounts. Most young adults who have become grant recipients themselves between the first and third wave of the CAPS survey received the child support grant. The positive (albeit nonsignificant) association between search and the receipt of a grant can be explained in our model by the increase in frictional unemployment that results when nonwage income raises the reservation wage. This hypothesis will be explored in table 7.

To account for the fact that young adults are actually faced with three options (work, search or “discouragement”) rather than two (search or not), a multinomial logit model was also estimated and the results presented in table 5. Consistent with learning during search, young adults who found a job revised upward their estimate of the mean wage and those who are still searching (and therefore have not observed high wages [higher than their reservation wage]) revised downward their wage expectations. However, variations in subjective wage expectations do not raise the likelihood of becoming “discouraged”. As in the basic logistic model of table 4, the receipt of a social grant reduces the likelihood of becoming discouraged. Consistent with the model, nonwage income (in the form of a pension in the household) reduces the likelihood of working and increases the likelihood of searching.

5.3 Search intensity

Table 6 presents OLS regression results of subjective wage expectations on search intensity. An increase in the subjective expectation of the mean wage (and therefore in expected returns to search) has a positive effect on search intensity, though only significant at the 10% level, raising by about 1 the number of search methods. This effect is large in light of the considerable measurement error introduced by proxying search intensity with the number

of search methods.

Using an even more subjective measure of wage expectations, changes in the respondent's estimate of his probability of finding a well-paid job do not have a significant effect on search intensity.

Again, the effect of wage expectations seems lower than the effect of income (household income or receiving a social grant). Individuals who have begun receiving a grant increase search intensity by about 1.6, a coefficient that is stable (though not always statistically significant at the 5% level) across specifications. Finally and also consistent with credit constraints limiting search intensity, an increase in household income has a similar (positive) effect on search intensity.

5.4 Reservation wage

Table 7 shows the effect of changes in labor market expectations on the reservation wage. As predicted by the model, an increase in the mean wage expectation raises the reservation wage, with an elasticity of 0.4. The receipt of a social grant is not associated with changes in the reservation wage, as these social grants (including the disability grant, the child support grant) represent nonwage income (received regardless of occupation in practice, with means tests that are not binding for the population considered) rather than actual unemployment insurance that might deter work. Like stated changes in wage expectations, an increase in the stated subjective probability of finding a well-paid job is also associated with a higher reservation wage (column 3).

However, having a new pension recipient in the household raises by 36% the reservation wage of young adults, suggesting that large transfers can lengthen the duration of unemployment.

6 Conclusion and policy implications

Unemployed individuals may not search for work (or may search with low intensity) either because (i) their search costs are too high relative to the expected gain from employment at their skills level or (ii) high search costs combined with credit constraint do not allow individuals who would otherwise gain from employment to search. The two hypotheses have differing implications in terms of policy. In both cases, a reduction in the cost of

search (for example by setting up job centers with services for job seekers) could reduce the number of discouraged workers and improve the efficiency of the job matching process. But training programs that raise skills levels or policies that discourage dropping out from high school would not be sufficient to avoid workers dropping out of search if credit constraint are binding. The empirical analysis of the search decisions of young adults in our sample suggest that an increase in their wage expectations does not raise the likelihood of search (extensive margin) but can increase search intensity conditional on searching. Also, social grants, and in particular the disability grant raise the likelihood that they will be searching and increase their level of search intensity. Finally, both increases in subjective wage expectations and the receipt of social grants raise the reservation wage, leading potentially to higher frictional unemployment. These findings suggest that young job seekers entering the labor market become “discouraged” and stop searching not so much because they expect low wages if they are employed (relative to gains from idleness) but because of high search costs, conjugated with credit constraints. They are therefore consistent with the second hypothesis.

While it reduces the official unemployment rate, discouragement is of concern to policy-makers as it can constitute a poverty trap if those who have withheld from the labor market find it difficult to resume search and find employment when labor market conditions improve. Appropriate policies in this context include a lowering of search costs through the creation of job centres providing information on employment opportunities and labor market conditions (notably wages). Social grants (that are not conditional on work status) can also alleviate credit constraints and thereby diminish the number of discouraged workers and raise search intensity. Nevertheless, they can have ambiguous effects on unemployment duration: while they raise search intensity, they also raise the reservation wage of workers and therefore can extend the duration of frictional unemployment and raise the official unemployment rate.

References

- Adda, Jerome and Russell Cooper (2003), *Dynamic economics: quantitative methods and applications*. The MIT Press.
- Ardington, Cally, Anne Case, and Victoria Hosegood (2009), “Labor supply responses to large social transfers: Longitudinal evidence from South Africa.” *American Economic Journal : applied economics*, 1.
- Benhabib, Jess and Clive Bull (1983), “Job search: the choice of intensity.” *The Journal of Political Economy*.
- Bertrand, Marianne, Sendhil Mullainathan, and Douglas Miller (2003), “Public policy and extended families: Evidence from pensions in South Africa.” *The World Bank Economic Review*, 17, 27–50.
- Burdett, Kenneth and Tara Vishwanath (1988), “Declining reservation wages and learning.” *The Review of Economic Studies*, 55, pp. 655–665.
- Diagne, Mame Fatou (2009), “Learning from siblings? family experience, young adults’ labor market expectations and human capital investment in South Africa.” Working Paper.
- Edmonds, Eric, Kristin Mammen, and Douglas Miller (2005), “Rearranging the family? household composition responses to large pension receipts.” *The Journal of Human Resources*, 40, 186–207.
- Lam, David, Jeremy Seekings, and Meredith Sparks (2006), “The Cape Area Panel Study: Overview and technical documentation for waves 1-2-3.”
- Magruder, Jeremy (2010), “Intergenerational networks, unemployment, and persistent inequality in South Africa.” *A EJ: Applied Economics*, 2, 62–85.
- McCall, J. J. (1970), “Economics of information and job search.” *The Quarterly Journal of Economics*, 84, pp. 113–126.
- Nattrass, Nicoli and Richard Walker (2005), “Unemployment and reservation wages in working-class Cape Town.” *South African Journal of Economics*, 73.
- Pissarides, Christopher A. (2000), *Equilibrium unemployment theory*. MIT Press.

Shimer, Robert (2004), "Search intensity." Working paper.

Figure 1: Unemployment and labor force participation in South Africa

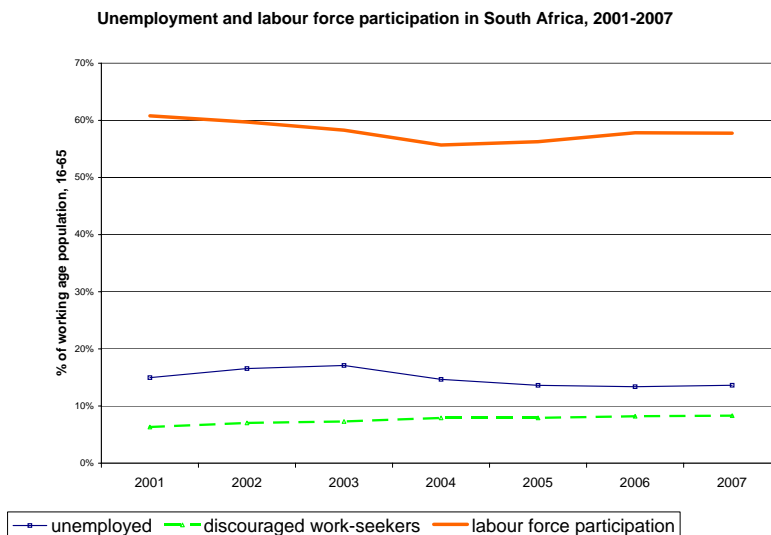


Figure 2: Stated reasons why not looking for work

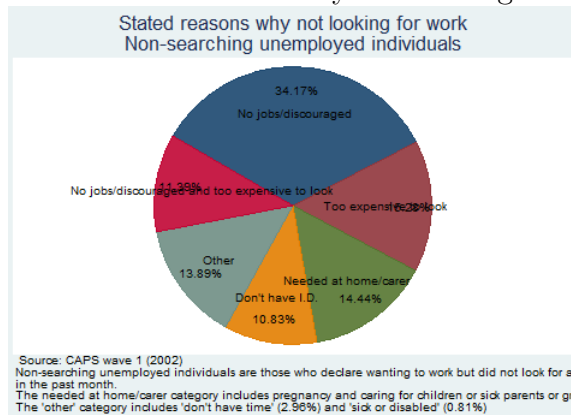


Figure 3: Stated best job search method among unemployed individuals

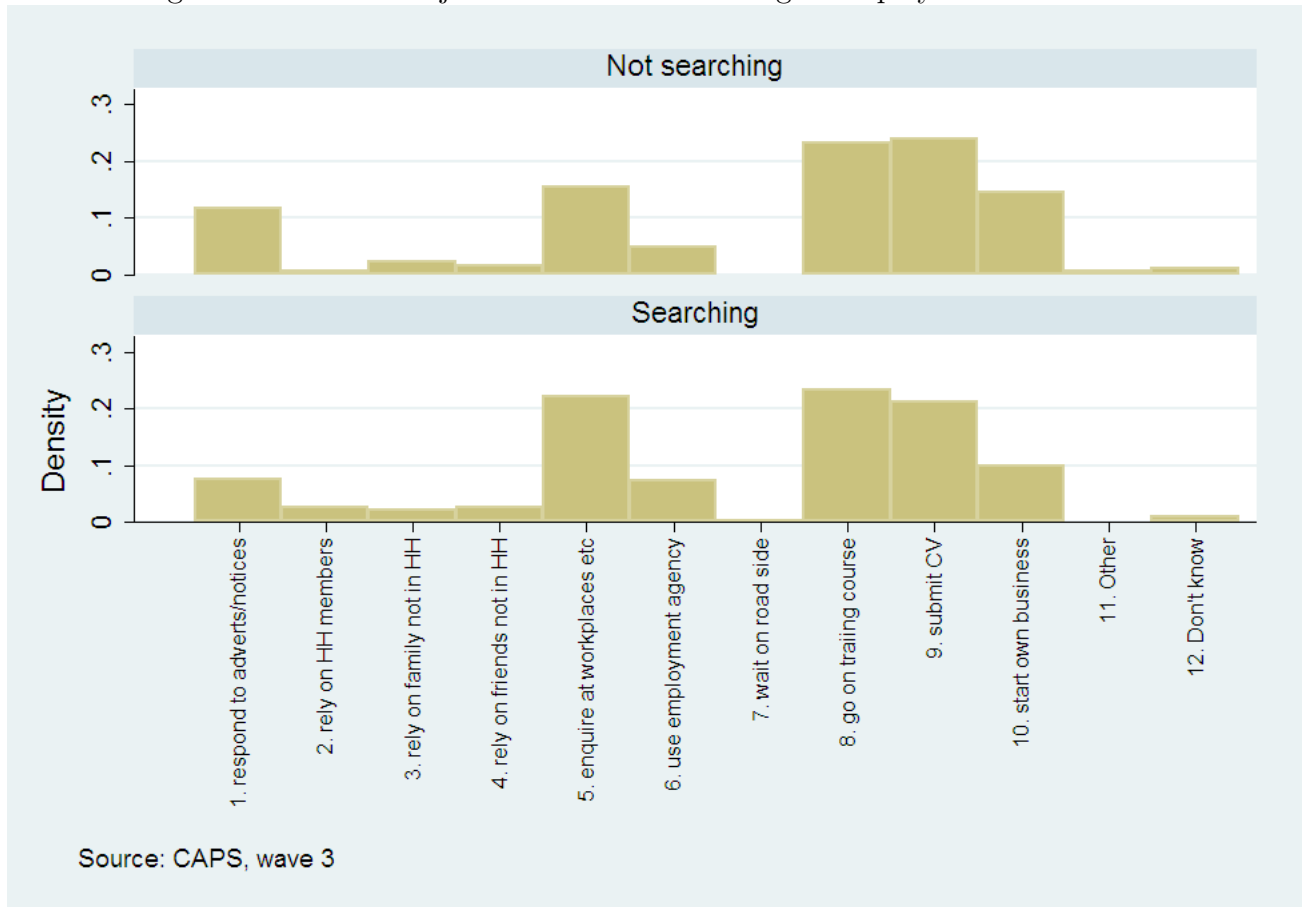


Figure 4: Views about search methods and actual search behavior of the unemployed (searching or discouraged seekers)

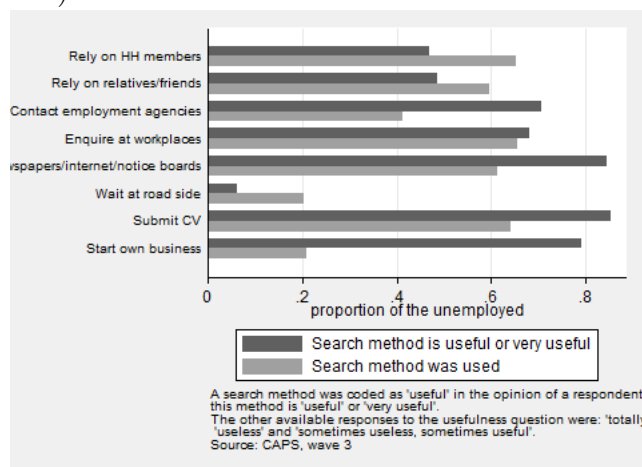


Figure 5: Simulated distribution of wage draws with variable search intensity

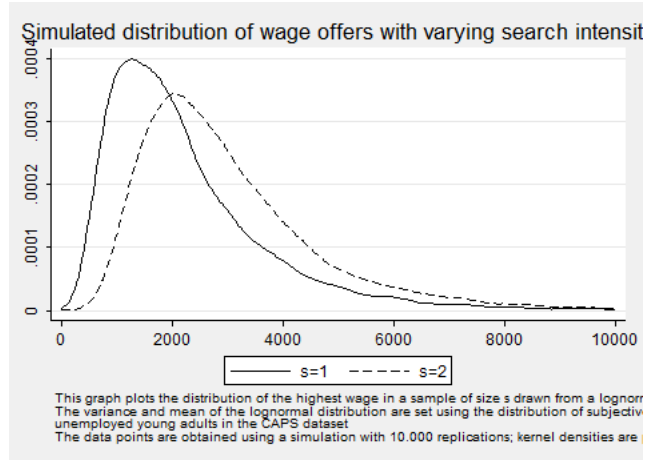


Table 1: Descriptive statistics (wave 1: 2002)

	Enrolled	Work	Search	Discouraged	Inactive	Total
Age	16.89 (2.197)	20.08 (1.600)	19.83 (1.788)	19.16 (2.082)	18.96 (2.191)	17.87 (2.480)
Years of education	9.039 (2.040)	10.34 (2.233)	9.566 (2.379)	8.793 (2.286)	9.079 (2.226)	9.238 (2.178)
Per capita household income(Rs)	1255.6 (1832.0)	1307.1 (1556.6)	588.3 (727.9)	484.1 (617.9)	450.4 (561.3)	1095.9 (1634.4)
Ability (test score)	0.0999 (1.001)	0.144 (0.954)	-0.200 (0.926)	-0.498 (0.932)	-0.459 (0.898)	0.00167 (0.999)
Searched in past 30 days	0.0918 (0.289)	0.313 (0.464)	1 (0)	0 (0)	0 (0)	0.199 (0.400)
Probability of working in three years	0.495 (0.345)	0.753 (0.264)	0.688 (0.271)	0.610 (0.304)	0.439 (0.323)	0.554 (0.339)
Reservation wage (Rs)	1425.9 (1905.5)	1539.0 (1093.1)	1095.6 (788.4)	1013.3 (855.8)	1107.5 (1003.8)	1356.8 (1625.9)
Subjective prob. of finding a well-paid job	0.625 (0.290)	0.651 (0.246)	0.574 (0.243)	0.541 (0.260)	0.620 (0.316)	0.616 (0.281)
Social grant recipient	0.0154 (0.123)	0.0304 (0.172)	0.0450 (0.207)	0.0814 (0.274)	0.0594 (0.237)	0.0277 (0.164)
Any grant recipient in household	0.380 (0.712)	0.331 (0.671)	0.425 (0.718)	0.482 (0.779)	0.488 (0.820)	0.392 (0.719)
Pension recipient in household	0.137 (0.382)	0.134 (0.400)	0.152 (0.419)	0.172 (0.422)	0.132 (0.339)	0.141 (0.390)
Search duration (days)	7.941 (48.49)	69.59 (185.8)	267.3 (297.8)	0 (0)	0 (0)	40.68 (144.5)
Search intensity (Number of search methods)	0.303 (0.661)	1.361 (1.061)	2.044 (1.169)	0.637 (0.885)	0.341 (0.774)	0.641 (0.996)
Observations	3064	598	475	400	205	4742

mean coefficients; sd in parentheses

Discouraged workers are individuals who want to work but did not search in the past 30 days.

Inactive individuals did not search and do not report wanting to work

Table 2: Descriptive statistics (wave 3: 2005)

	Enrolled	Work	Search	Discouraged	Inactive	Total
Searched in past 30 days	0.377 (0.485)	0.294 (0.456)	1 (0)	0 (0)	0 (0)	0.472 (0.499)
Probability of working in three years	0.639 (0.314)	0.765 (0.220)	0.719 (0.232)	0.717 (0.234)	0.700 (0.169)	0.701 (0.272)
Typical wage (Rs)	3017.9 (3243.2)	3011.3 (2290.1)	2283.9 (1831.1)	2033.2 (922.4)	2857.1 (1676.2)	2856.5 (2641.7)
Reservation wage (Rs)	5105.8 (5927.2)	3510.0 (4111.3)	2478.5 (2537.5)	2573.6 (3426.0)	2858.3 (2006.6)	4019.4 (4912.4)
Subjective prob. of finding a well-paid job	0.678 (0.248)	0.643 (0.247)	0.562 (0.230)	0.583 (0.249)	0.517 (0.200)	0.643 (0.248)
Social grant recipient	0.0261 (0.160)	0.0859 (0.280)	0.140 (0.347)	0.191 (0.394)	0.154 (0.376)	0.0738 (0.262)
Any grant recipient in household	0.559 (0.833)	0.517 (0.802)	0.765 (0.898)	0.628 (0.885)	0.500 (0.730)	0.574 (0.836)
Pension recipient in household	0.195 (0.458)	0.203 (0.477)	0.237 (0.528)	0.161 (0.425)	0.313 (0.479)	0.202 (0.473)
Search duration (days)	16.03 (94.73)	46.71 (191.2)	344.3 (386.5)	0 (0)	0 (0)	69.95 (221.4)
Search intensity (Number of search methods)	0.329 (1.212)	0.556 (1.666)	4.354 (2.099)	0 (0)	0 (0)	0.925 (2.016)
Observations	1335	1188	413	180	16	3132

mean coefficients; sd in parentheses

Discouraged workers are individuals who want to work but did not search in the past 30 days.

Inactive individuals did not search and do not report wanting to work

Table 3: Occupational transitions and attrition, 2002-2005

Occupation in 2002	Occupation in 2005							total (%)	N(2002)
	enrolled	working	unemployed searching	unemployed discouraged	inactive	attrited			
enrolled	41.2	17.9	7.0	3.4	0.2	30.3	100	3,064	
working	5.4	52.7	8.5	2.7	0.3	30.4	100	598	
unemployed searching	3.6	37.1	13.3	5.7	0.8	39.6	100	475	
unemployed discouraged	2.8	25.3	12.8	6.8	0.8	51.8	100	400	
unemployed inactive	5.9	19.0	15.1	3.4	0.5	56.1	100	205	

Source: CAPS young adult sample, waves 1-3.

The unemployed are defined as neither working nor enrolled but wanting work, regardless of job search status. Inactive individuals are those who are neither working, nor enrolled, nor unemployed (do not declare wanting to work).

Table 4: Job search decision

	(1)	(2)	(3)	(4)
	Search	Marginal effects	Search	Marginal effects
Expectation of typical wage (log)	-0.369 (0.393)	-0.0238 (0.0348)	-0.252* (0.134)	-0.0630* (0.0336)
Pension recipient in household	0.874 (0.762)	0.0565 (0.154)	0.141 (0.150)	0.0352 (0.0376)
Per capita household income (log)			0.0421 (0.0811)	0.0105 (0.0203)
Black (d)			-0.539*** (0.156)	-0.134*** (0.0383)
Age			0.0709** (0.0326)	0.0177** (0.00814)
Male (d)			0.800*** (0.142)	0.197*** (0.0338)
Years of education			0.0832** (0.0371)	0.0208** (0.00926)
Observations	108	108	939	939
Pseudo R^2	0.035	0.035	0.041	0.041
Indiv. fixed effects	Yes	Yes	No	No

Marginal effects; Standard errors in parentheses

Logistic regression coefficient. In all columns, the dependent variable equals 1 if the individual looked for work in the past 30 days and 0 if he/she is a nonsearcher. The sample includes non-White unemployed young adults in waves 2(2004) and 3(2005) of the CAPS dataset. The typical wage is a subjective estimate of the mean wage. (d) for discrete change of dummy variable from 0 to 1

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Search : Multinomial logit model

	Work	Search	Discouraged
Expectation of typical wage (log)	0.208*** (0.0453)	-0.183*** (0.0408)	-0.0252 (0.0370)
Pension recipient in household	-0.114** (0.0551)	0.0733* (0.0439)	0.0412 (0.0422)
Search intensity (t-1)	0.0156 (0.0113)	0.00683 (0.0103)	-0.0224** (0.0102)
Black (d)	-0.155*** (0.0431)	0.0344 (0.0410)	0.121*** (0.0371)
Male (d)	0.146*** (0.0438)	0.0384 (0.0418)	-0.185*** (0.0395)
Years of education	0.0263** (0.0110)	0.00373 (0.0105)	-0.0300*** (0.00968)
Observations	585	585	585
Pseudo R^2	0.079	0.079	0.079
Probability of outcome	0.433	0.318	0.249

Marginal effects; Standard errors in parentheses

The sample includes non-White unemployed young adults in waves 2(2004) and 3(2005) of the CAPS dataset. The typical wage is a subjective estimate of the mean wage.

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Search intensity

	(1)	(2)	(3)
	All	HS dropouts	All
Expectation of typical wage (log)	0.999* (0.512)	1.284* (0.641)	
Social grant recipient	1.739 (1.226)	1.625 (1.292)	1.608** (0.686)
Per capita household income (log)	0.942** (0.433)	0.849 (0.642)	0.447** (0.208)
Subjective prob. of finding a well-paid job			-0.524 (0.585)
Constant	-9.356* (5.470)	-10.83 (7.417)	0.583 (1.347)
Observations	765	513	1672
R^2	0.130	0.172	0.037
F	2.840	2.072	3.694
Indiv. fixed effects	Yes	Yes	Yes

Standard errors in parentheses

The dependent variable, search intensity, is measured as the number of search methods used during job search. The sample includes non-White unemployed young adults who have looked for work in the past 30 days in waves 1(2002), 2(2004) and 3(2005) of the CAPS dataset.

The typical wage is a subjective estimate of the mean wage.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Subjective beliefs and reservation wage

	(1)	(2)	(3)	(4)
Expectation of typical wage (log)	0.421*** (0.114)	0.416*** (0.113)		0.432*** (0.0527)
Subjective prob. of finding a well-paid job			0.302** (0.151)	
Probability of working in three years				
Social grant recipient	-0.0710 (0.209)	-0.0288 (0.206)	0.271 (0.183)	-0.0281 (0.0936)
Per capita household income (log)	0.0740 (0.0684)		0.126* (0.0690)	0.0391 (0.0304)
Pension recipient in household		0.361** (0.169)		
Black				0.279*** (0.0651)
Age				-0.00149 (0.0152)
Male				0.0711 (0.0595)
Years of education				0.0658*** (0.0151)
Constant	3.860*** (0.942)	4.264*** (0.853)	6.085*** (0.420)	3.218*** (0.464)
Observations	668	668	1747	553
R^2	0.081	0.098	0.026	0.231
Indiv. fixed effects	Yes	Yes	Yes	No

Standard errors in parentheses

Ordinary Least Squares regression coefficients.

In all columns, the dependent variable is the log of the respondent's stated reservation wage.

The sample includes non-White unemployed young adults in waves 1(2002), 2(2004) and 3(2005) of the CAPS dataset. The typical wage is a subjective estimate of the mean wage.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$