

Market Failure, Human Capital, and Job Search Dynamics in South Africa: The Case of Duncan Village

Patrick Duff

David Fryer

Department of Economics and
Economic History
Rhodes University
D.Fryer@ru.ac.za

Abstract

This paper argues that the economic literature on unemployment and poverty in South Africa has under-explored potentially important feedback mechanisms which, because they serve to change the structure of labour markets and affect human capital trajectories, serve to endogenise labour market exclusion. Using a tailor-made database from Duncan Village, East London, this paper probes such processes, focussing around the question of job search. The evidence presented suggests that endogenous factors generating labour market exclusion are important in locking-in exclusion, and suggests that macro-micro linkages need to be further considered.

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**Development Policy
Research Unit**
Tel: +27 21 650 5705
Fax: +27 21 650 5711

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1. Introduction

There is significant consensus that unemployment and more generally, exclusion from the labour market, is the central socio-economic problem in South Africa. Joblessness is strongly implicated in such socio-economic problems as crime, poverty, alcoholism, HIV-AIDS, and even poor educational outcomes and low skill levels (see for example Borat *et al.*, 2001; Fryer and Vencatachellum, 2004; Natrass, 2003).

The literature flowing from household survey data has however focussed on *measuring* unemployment and its consequences. In doing this, it tends to treat unemployment as something that *happens* to individuals and communities. The framework of analysis has tended to be static. However, factors such as unemployment and poverty will have obvious feedback effects on the current capabilities of individuals, on the intergenerational transmission of capital (and especially human capital) and on social and market structure. Below critical threshold levels, such factors can generate market and coordination failures (Fryer and Vencatachellum, 2004). The distortions generated by unemployment can become endogenised in the sense that they become a *cause* of unemployment.

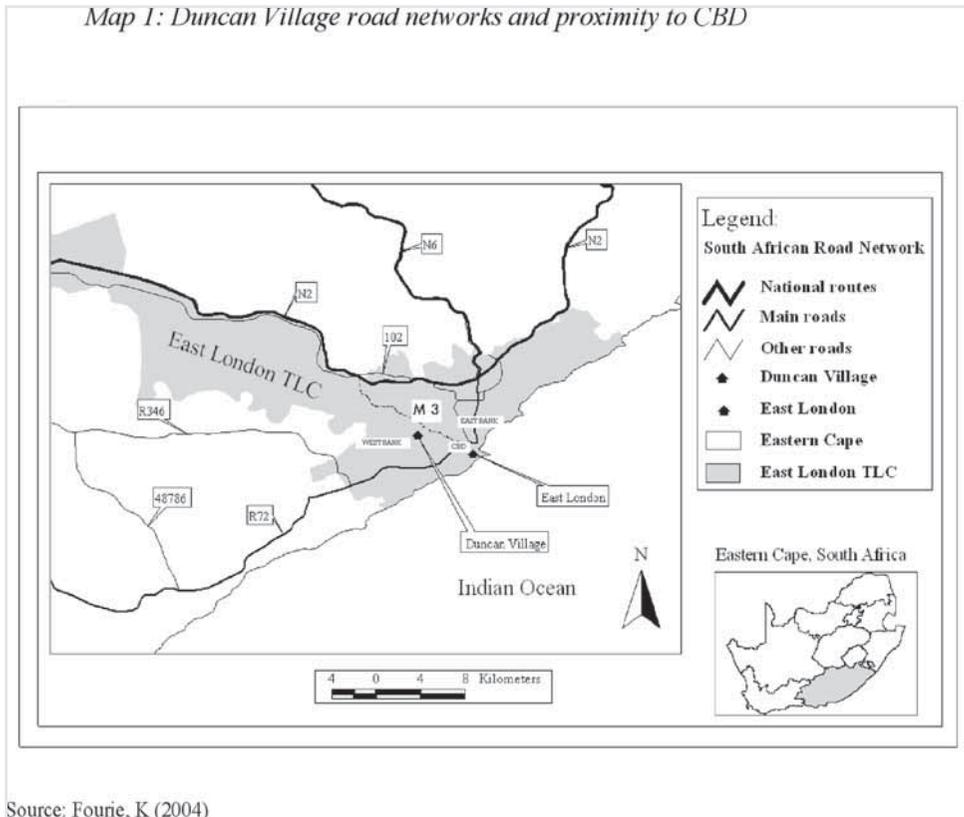
Job search plays an important role in these processes. Firstly, it is the interface between the social and the more narrowly economic spheres.¹ Secondly, job search is the external labour market, in the sense that it defines the way in which employees and employers locate each other. As such, it constitutes the information structure of the job market, and is one of the most important determinants of the structure of inclusion and exclusion. How job search influences the structure of exclusion, and how the pattern of exclusion shapes market structure and human capital trajectories, are the central questions that this paper addresses.

Job search has been explored in the South African literature.² However, partially for data reasons, the question of how job search (and more generally endogenous factors) contributes to the causes of unemployment has not been explored. Explanations of unemployment have focussed around factors 'exogenous' to local labour markets, highlighting low aggregate demand and in particular so-called 'imposed' distortions generated by trade unions and labour legislation (eg Lewis, 2002; Fedderke and

1 This relationship is explored by Godbout (1998) who describes *markets* as the *secondary sphere* of *sociability*. We might follow this and call a large proportion of social activity the 'secondary sphere of the economy'. A synthesis between the narrowly economic and the social would need to incorporate both of these insights.

2 For example, whether or not people search, and whether searching and non-searching unemployment are distinct states, has been taken as one of the key questions in the debate concerning the level of unemployment (e.g. Dinkelman and Pirouz, 2001; 2003; Kingdon and Knight, 2000; Borat *et al.* 2001).

Mariotti, 2002). The literature has not explored how such dynamics generate exclusion, whether such endogenous factors are important, and how they interact with exogenous factors.



In order to explore such issues, the paper makes use of a January 2004 survey of 160 households in Duncan Village,³ a poor, predominantly Xhosa township located within easy commuting distance of the East London CBD and the West Bank industrial area (see Map 1). Such a survey offers two advantages. First, because it was designed specifically to address such questions, it is able to provide much more detail on the dynamics of job search than existing databases. Secondly, Duncan Village was chosen because it has been well studied, particularly by urban anthropologists (see Bank, 2002), and hence local social and economic processes are quite well understood. Moreover, because of its proximity to the urban economy (and hence a mix of opportunities that is rich in comparison with rural areas and smaller towns) and its part in a process of ‘middling

3 For details of the survey methodology, see Duff and Fryer (2004b).

modernism',⁴ rates of participation and job search are high by South African standards, even though joblessness is extensive (See Table 1 on page 12).

The paper is structured as follows. Section 2 raises some theoretical issues and comments on the likely structure of exclusion in South Africa. Section 3 tests some of the hypotheses raised in Section 2 using the Duncan Village data. Section 4 concludes.

2. The likely structure of labour markets and exclusion in South Africa: theory and evidence

"In the beginning, so to speak, there were markets" (Oliver Williamson, 1981: 1547).

Various theoretical traditions have the potential to inform a study on job search. This section attempts to develop an eclectic approach (see Fullbrook, 2003), which accommodates the insights of market failure theory, human capital theory, and various 'non-economic' traditions, and to show that such an approach is relevant to the South African context.

2.1 Markets, market failure, and signals

In the economic literature, job search has been conceptualised in terms of the market failure tradition developed since Akerlof (1970).⁵ It is useful to spell out the main features of this approach because they provide a useful framework onto which the other elements of an eclectic approach can be grafted.

4 Bank contrasts the vibrant 'creolised' 'townsman' culture of settlements like Duncan Village, which can be thought of as a gateway to the modern urban economy, with townships like Mdantsane which is further from the East London CBD and in which there is "a largely undifferentiated landscape of poverty, boredom, and alienation" (Bank, 2002: 104-107). Although this aspect is not a focus of this particular paper, the evidence discussed in Section 3 strongly corroborates this view.

5 Studies on job search in this tradition include Montgomery (1991; 1993); Calvó-Armengol and Jackson (2004); and in the South African context, Fryer (1994; 1998); and Fryer and Stuart (2002).

Screpanti *et al.* (1995: 363) argue that the Coase theorem⁶ (Coase, 1960) is “rather stronger” than the first theorem of welfare economics. “[I]t has no need of any hypotheses of convexity, price-taking behaviour, and complete markets. The only thing that it requires is the absence of any barrier to bargaining.” Provided people can trade, the *optimus optimorum*, the ‘first best’, *will* be attained. Akerlof’s (1970) principle insight can be regarded as the antithesis of this. In the presence of information asymmetries, *impersonal* market relations (trade) *will* fail, and this failure will be complete. Akerlof’s argument is framed in terms of quality uncertainty, asymmetric information, and adverse selection. In this section it is argued that these considerations are likely to be important in the South African labour market.

Before considering market failure and responses to market failure, it is important to recognise that ‘markets’ will not fail in two circumstances. Firstly, there may be a *threshold* above which the adverse selection trap is avoided even for impersonal transactions. In other words, it may appear that information does not have to be *perfect* for markets to function. This may seem obvious given that some market transactions that actually work appear to be impersonal. However, Akerlof’s criticism is fundamental, and in purely *material* (as opposed to social) terms, the requirements for a market to work are prohibitive. Even with completely homogeneous products, the buyer needs to be reasonably skilled at judging quality, and needs to spend time checking the goods. As the size of the transaction increases, transaction costs mount. This is particularly the case because even with goods that nature provides in a fairly homogeneous state, moral hazard means that sellers have the incentive to adulterate them. For example, although maize is a fairly homogeneous product, sellers of grain are notorious for adding stones to or wetting grain to bulk it out. It might be relatively easy to check whether a small bag of grain is clean, but a dealer who wants to buy tons of the stuff may have a problem. Moreover, even if there is no difficulty with *quality* verification, the existence of *any* time lag between delivery and payment will generate dishonesty in the absence of any trust enforcing mechanisms. These considerations have been stressed in both the transactions cost (e.g. Williamson, 1979; 1981; 1985) and radical (e.g. Aoki, 2001) literatures.

Secondly, given the stringency of these ‘material’ conditions, market transactions may have important *personal* components (in the sense that they involve durable relationships) that facilitate trust and hence prevent failure. Indeed, functioning markets are almost

6 “Informally the Coase Theorem states that in presence of complete competitive markets and the absence of transactions costs, an efficient set of inputs to production and outputs from production will be chosen by agents regardless of how property rights over the inputs were assigned to the agents.” (http://economics.about.com/cs/economicsglossary/g/coase_theorem.htm)

always supported by *trust*.⁷ Contracts, enforceable through the law courts, are one way of enforcing trust, but using the law-courts is expensive and, in any case, it is very hard to write contracts that cover every possible contingency. In practice, therefore the 'glue' that holds the economy together is *informal* trust. Consider the following example: if you buy a loaf of bread from a supermarket chain (for example, Spar), you take it on trust that its quality will be of a certain standard. When you buy a tin of All Gold baked beans, you are taking it on trust that the tin does not merely contain water. Trust is essentially *social* because it involves a relationship between the buyer and seller. Spar knows that its relationship with its customers will be broken if it violates its self-imposed standards. Many sellers thus rely on *reputation* to generate a believable signal (Spence, 2002) regarding the quality of their wares. This is very important, because provided that there are several sellers, the fact that the market is not purely impersonal does not necessarily mean that it is not 'first best' in the neoclassical sense. Once a standard has arisen, and is enforced either by some authority or by the eagerness of sellers to maintain their reputation, customers may well be able to shop around freely for the best deal. Even though an individual may have a relationship with a particular store, that individual's exit option is fairly open, so that if that store's standards start to slip, or it tries to raise its price, the individual can exit that particular relationship and form another quite easily [i.e. Coasian insight holds; also the question of whether there has to be a "large" standard setting institution, whether this institution is "self sustaining" (ie profitable) or needs to be supported by government policy].

This consideration implies that *first* best may still be important even when markets are not *perfectly* competitive. Markets may remain *contestable* (Baumol and Willig, 1981; Tavares de Araujo, 1995; Fryer and Stuart, 2002) if entry and exit are reasonably easy. As the Coase theorem suggests, this conclusion holds even if the market is dominated by large firms (responding to technological externalities or 'making' the market) or if the commodity traded is subject to externalities. It is important to note that the distinguishing characteristic of first best 'institutions', even when supported by 'social capital', is that they are, in Fedderke *et al.*'s (1999) terminology, *transparent*. In other words, they have the property of public goods. *Any* customer can benefit from the quality signal Spar generates. *Any* worker with a 'credential' that is trustworthy can generate a plausible signal.

⁷ This insight is not restricted to heterodox economics (see for example Aoki, 2001; Stanfield, 1999), but has been shown to underlie orthodox thinking, whether Smithian (Hardt and Negri, 2001: 86), or of the 20th Century variety (Arrow, 1967).

2.2 Failure, closed signals, and incomplete signalling

While it might be the case that many markets do work in 'first best' fashion, it seems equally obvious that many do not, and therefore that 'first best' is not universal. Indeed, the 'open' signals described in the last subsection are a response to the failure of 'impersonal' market relationships, and nothing that was said in the last section to suggest that *all* market relationships will be capable of being supported by trust, or that the institutions that generate trust will necessarily emerge. Some market relationships with *fail* or be characterised by *dominance* by one or other of the parties because they are not contestable. The interesting question (which economic theory is just beginning to tackle) concerns exactly where the threshold between first best and other forms lies.

Consider the labour process. Although 'who you know' is often the dominant factor in getting a job, many jobs *are* filled "on merit".⁸ Signals generated by education, *curriculum vitae*, and other standard setting institutions, generate sufficient trust so that excessive quality variation and hence the adverse selection trap are avoided. The greater the range (in terms of reflecting different attributes) and reliability of signals generated by such standard setting institutions, the lower the degree of quality uncertainty.

On this point, it is instructive to consider the effect of education on the quality of labour (that is, its productivity). In countries with excellent education systems, workers with a particular level of education (say, nine years of education) will not only be on average more productive than their counterparts in countries with weak education systems, their quality will also be less variable. Nickell (1998), for example, shows that the German education system provides better and less variable education, especially for lower skilled workers, than its American and British counterparts. Just as importantly, the German system provides a *range* of standards, so that people of different aptitudes are accommodated. In particular, compared to the UK and the USA, it is particularly good at ensuring that *basic* skills are acquired by all. McIntosh and Vignoles (2001: 455) confirm that the UK and US perform far below the standards of countries like Germany and Sweden and, further, that there is "[c]lear evidence of a substantial wage return to such [basic] skills."⁹ In the absence of a range of standards, very large sheepskin effects are observed, where people who fall below a particular standard earn dramatically lower wages and/or

⁸ What evidence there is suggests that just under half of workers in developed countries get their jobs through first best 'market' channels of applications and agencies (Montgomery, 1991; Calvó-Armengol and Jackson, 2004).

⁹ (West) German men in the bottom wage decile appear to earn twice as much their American counterparts (Nickell, 1998: 309), and the difference is growing. Nickell (1998: 298) reports that real wages of bottom decile worker fell by over 1 per cent *per annum* and increased by over 2.5 per cent *per annum* in the 1980s in the USA and Germany respectively.

face much lower probabilities of finding work.¹⁰ Finally, it is important to note that there is a clear link to subsequent training. Thirty one per cent of US school leavers received no formal training after leaving school, and 46 per cent gained no further “certificate or degree”. In Germany comparable figures are 1 per cent and 20 per cent (Nickell, 1998: 311-2). As Nickell (1998: 313) puts it “... the training system cannot operate successfully without a schooling system that provides effective preparation.”

There is ample evidence both of considerable quality variation, and of a poor range of signals, associated with South African human capital. First, the current stock of human capital in South Africa is beset by problems of low and variable quality, particularly with respect to the cohort educated during late apartheid.¹¹ Chisholm’s (1992) comments about apartheid education – “Levels of illiteracy and innumeracy appear to have *risen* with higher numbers attending school” – lends support to the notion that there is abnormal quality *variation* in human capital in South Africa. This cohort is currently in its prime working years. There is also evidence of severe quality problems in the post-apartheid

10 Sheepskin effects are discontinuities in the returns to education (see Ferrer and Ridell, 2002). These sheepskin effects reflect some combination of two factors. Firstly, education may augment human capital in discrete packages. For example, individuals who pass a certain level, such as a high school diploma, may have acquired a package of complementary skills, whereas individuals who fail at this level may be missing key skills and cognitive abilities. Secondly, signals may exist only at discrete intervals (such as high school diploma level, bachelor’s degree, etc) and people who, for example have completed two years of university education may have access to no reliable signal, regardless of their skill level. McIntosh and Vignoles (2001: 469-70) find a significant return to basic skills (literacy and numeracy) even when education is controlled for. Thus, in the UK, the wage premium for simple numeracy is about 10%, with a premium of 6% remaining even when education is controlled for. Ferrer and Ridell (2002) survey the evidence from Canada and the USA, and find large sheepskins for completed high school education and completed tertiary degrees, particularly in the USA. These sheepskins tend to be larger amongst groups for which educational quality and signalling problems are likely to be greatest. Ashraf (1994: 287), for example, finds ‘enormous’ returns to college education for blacks in the USA. College-educated blacks earn approximately three times the incomes of blacks who did not complete secondary school.

11 Borat et al (2001:127-8) comment on literacy and numeracy test results for the 13 to 18 age group in 1993. Even whites do not do very well, but the performance of blacks is alarming. Numeracy skills for blacks were only about 40% of those of whites. Literacy skills were about 55% of those of whites. Pass rates do not lag behind as much. This implies that blacks with any particular level of education are on average less numerate and literate than their white peers. For blacks already in the labour market there is evidence that “normal” factors associated with lack of educational resources were further compromised by apartheid education. Chisholm (1992: 281) notes that 66% of the black adult population was functionally illiterate in 1992, with the highest number in the 16-34 age group—the “generation schooled by apartheid”.

education system.¹² Secondly, the South African education system at present provides *no* plausible signal below the level of matric (completed secondary education).¹³ Moreover, the system of education and training seemingly provides a limited range of non-academic (“technical” and “vocational”) post-school qualifications. In other words, apart from an elite, there is little in the way of a plausible signal *above* the level of matric, and this is quite likely related to the quality of the keystone secondary education system. This point is strikingly illustrated by the Duncan Village data and is returned to in Section 3.

When quality certainty associated with any particular public standard is high, or when standards do not exist for groups of workers, thresholds for ‘first best’ will not be achieved, and markets will fail unless alternative channels based on *personal* relationships are available. In the example of the South African labour market, there is evidence that for the majority of workers without at least 10 years of education, “formal”, first best market channels are not available. In the two samples discussed in Section 3, some individuals attain jobs through ‘formal’ channels and appear to be able to provide a plausible quality signal. However, the monopolisation of this channel by the relatively well-educated is very striking.

For the rest, it follows that unless they have access to alternative *social* channels of information (particularly referrals from friends and relatives), they are likely to face failure, because they will be unable to provide employers with a credible signal of their quality. Indicators of the extent of failure in the South African labour market are stark and well-known. These are discussed in Section 3, but it is worth noting here that, of the jobless, the majority is not even engaged in job search, and presumably the main reason for this is that the prospects of finding work are virtually (or in many cases, actually) zero. Finally, what indicators there are (discussed in Section 3) suggest that of those that do search, the vast majority (roughly three quarters) have no access to either ‘first best’ or social channels of information. Instead, they use the relatively unproductive *private* method of ‘going from place to place’. Apart from anything else (such as the ability to transmit a believable signal) such private search gains none of the economies of scale associated with ‘public’ and ‘social’ channels of information.

12 See Case and Yogo, 1999; Case and Deaton, 1999; Anderson et al. 2001; Financial Mail, 2003. An indicator is that in 2002 only 3 300 blacks passed higher grade matric (university entrance level) maths, compared to 17 000 higher grade matric passes produced by the minority white community. There is also evidence of significant variation in quality at the provincial level, between rural and urban area, and in particularly, between old “homeland” and old “white” areas (for example, Lemon, 2004).

13 Standardised testing at levels below matric was only introduced on an experimental basis in 2001. Early indicators are that (for example) Grade 3 students’ performance in reading and writing was poor (Financial Mail, 2003: 23).

What evidence there is of how people in work attained their jobs (discussed in Section 3) suggests that people who use this last method are least likely to find work and, if they find work, the work is likely to be in low paying jobs. This highlights one of the negative aspects of the use of systems of trust that are not 'public'. High ability workers *and* workers who can verify some minimal qualities through the use of networks are selected out of the market, and this reinforces the tendency for adverse selection to destroy the market for the remainder (see Montgomery, 1991: 1411-3). Thus those below both human capital and social capital thresholds are likely to be "doubly lemons", or "doubly outsiders".

2.3 Effects on market structure

Individuals with particular social characteristics (such as Black males in the USA), and living in areas with few employed people, are least likely to have connections who can put them in contact with potential employers. Patterns of exclusion are likely to become locked in, and assume distinct geographical and demographic (and particularly, racial) patterns. Initial variation is likely to be amplified through various feedback mechanisms. For example, market failure, leading to unemployment, feeds back to human capital through the depreciation of the skills and ethics of workers who experience prolonged un- or underemployment, and the subsequent perceptions of employers (so-called 'statistical discrimination') that groups of workers subject to high unemployment are less productive.¹⁴ This will evidently affect the structure of signals.

These problems are particularly relevant for youth unemployment, which means that *fundamental* social and cognitive skills may never be acquired (see Holzer, 1998, for evidence from the USA). For some idea of how serious joblessness is for young South Africans, note that in 1997, only 31 per cent and 20 per cent of males and females aged between 21 and 25 had *any* income-earning work, and the corresponding figures for the 26-30 age group were only 55 per cent and 33 per cent (OHS 1997 data cited by Fryer and Stuart, 2002). Moreover, there are likely to be intergenerational effects, particularly on the stocks of human capital, as both the incentive and ability to educate

14 Möller (1993) provides the most detailed account of this "depreciation" in South Africa. Also see Fryer (1998), and Dinkelman and Pirouz (2001) for South Africa, and Holzer (1998) for the USA. To recognize the importance of depreciation in our context, it is necessary to avoid the mistake of thinking that unskilled labour has no skills. Critical social and cognitive skills are highlighted by, for example, Holzer (1998: 230). Holzer (1998: 240) also explains the dynamics of statistical discrimination.

"Minorities [in the case of the USA] are hurt in the hiring process by employer perceptions of their weaknesses in cognitive skills and observable credentials. To some extent, these perceptions are ... accurate; despite recent gains, blacks and Hispanics continue to score lower than whites on tests measuring cognitive abilities... But employer perceptions may be overstated ... [and] may well reflect some degree of employer discrimination (whether pure or 'statistical')" (Holzer, 1998: 240).

children is undermined in poor areas where employment prospects are bleak.¹⁵ There are also strong links between the socioeconomic status of the community and the quality of schools (Kahlenberg and Wasow, 2003; Lemon, 2004). These issues are discussed in more detail in Section 3.

In summary, quality variation, exacerbated by high levels of unemployment, is likely to lead to measurable endogenous distortions at three levels. Firstly, 'first best' market signals can be regarded as the service of a kind of 'public' capital asset. This 'market capital' (see Fryer and Stuart, 2002) enhances *individuals'* ability to utilise their human capital fully, but depends on *collective* institutions to generate trust. Adverse selection is likely to lead to the destruction of certain markets, and hence to undermine the overall capital stocks of people who are reliant on such markets. Secondly, at the level of the individual, failure is likely to affect private capital stocks, and particularly stocks of human capital, and these effects are likely to be transmitted from generation to generation. Finally, social networks that form in response to these failures may be called 'social capital', and social capital yields informational returns in a similar manner to market capital. However, reliance on social groups of limited size is likely to provide individuals with a much smaller set of information, and hence a lower likelihood of using their human capital to the full. The feedback effects may therefore only be partially mitigated. Moreover, such social networks are by their nature exclusive: their existence exacerbates market failure, and hence the exclusion of groups that do not have social or market capital stocks.

3. Results

3.1 Employment, underemployment and unemployment

Table 1 shows unemployment rates and labour force participation rates for various surveys and according to different variants of the standard definition. It presents, in a nutshell, both the extent of the unemployment problem and the extent of the problem facing researchers trying to understand it. What is most interesting for this study is the range of possible unemployment rates. The difference between the 'strict' and 'expanded'

¹⁵ There are even more fundamental effects on individual ability. There are well-documented effects of poor environment on the development of young children (Brombenfener, 1974). For example, in a study of children in the USA, it was found that at five and half years, cared-for children had a mean IQ of 124 points while the uncared for had a mean IQ of 94 (see Montagu, 1999: 41). Massey (2004: 7) presents evidence that "long-term exposure to social disorder and violence because of segregation produces a high allostatic load among African Americans, which leads, in turn, to a variety of deleterious health and cognitive outcomes."

definitions has been a focal point in the literature in South Africa, and there have been several studies on the question of whether 'searching' and 'non-searching' unemployment are different states (Dinkelman and Pirouz, 2001; 2003; Kingdon and Knight, 2000; 2001). However, while the strict unemployment rate is the 'lowest plausible' rate (if the data is taken at face value), the expanded definition is by no means the highest plausible. The Machibisa (see Note (c) in Table 1 for an explanation) and Duncan Village surveys provide much more detailed information than the other surveys on the question of ambiguity (see for example, Anker et al., 1987). These suggest that the difference between the expanded and so-called highest plausible unemployment rate (which takes the 'expansion' to its logical conclusion) is at least comparable to the difference between the expanded and strict rates.¹⁶

Unemployment in Duncan Village appears to be very high, even by the strict definition, and even by South African standards. However, this indicates the limited meaningfulness of unemployment figures rather as much as anything else. High unemployment is a statistical artefact of the high levels of labour force participation in Duncan village, and does not reflect a proportionately higher degree of joblessness. This is almost certainly partially due to the proximity of Duncan Village to East London encouraging participation and making Duncan Village an attractive place for searchers.¹⁷

16 There is significant evidence that this is also the case in the national databases. For example, a pattern of the South African datasets is the number of blacks in the non-labour force category "not elsewhere classified". In OHS (1995) for example, this category contained approximately 1 500 000 blacks (Bhorat et al. 2001: 77). There were more such unclassified black women (990 000) than there were searching black women (810 000). There is at least some evidence to suggest that a significant number of such statistical nonentities are unemployed. Of the 1991 Census data Fryer (1998) comments: "For Blacks this [not elsewhere classified] category is 11% of the working age population. It is 5% for coloureds, 4% of Asians and only 1% for whites. This follows exactly the same ranking as unemployment rates, indicating that many of the 'unspecified' are probably discouraged workers."

17 Indeed, a larger proportion of working age women have work in the Duncan Village sample than do, for example, women in the OHS 1997 sample. This is because, despite a much lower strict unemployment rate, labour force participation is proportionately even lower in the OHS 1997 sample. In the Duncan Village sample 70% of working age women participate, and of these 52% are unemployed (i.e. 48% are employed). This means that $0.7 \times (1 - 0.52) = 0.34$ (34%) of working age women have work. The figure for OHS (1997) is only 28% [$(1 - 0.26) \times 0.38$]. It is also not surprising that the proportion of women with work is low (lower for example than in the Grahamstown sample) given that jobless individuals migrate into Duncan Village to look for work.

Table 1: Unemployment (U) and labour force participation rates (LFP) (%): possible ranges within the standard definition

	Strict		Expanded		Highest plausible	
	U	LFP	U	LFP	U	LFP
Machibisa ^c women (1990)	24	63	33	72	47 ^b	75
Grahamstown ^c women (1996)	21	48	39 ^a	62		
men	21	58	36	71		
Duncan Village (2004) women	52	70	58	80	<u>76</u>	82
men	46	78	51	86	<u>72</u>	89
National SALDRU (1993) total	12		30			
OHS (1995) total	13		27			
OHS (1997) women	26	38	44	50		
men	18	57	29	67		
total	21	47	36	58		
OHS (1999) total	23		36			
LFS (2002 - September) total	31	57	42	68		

Source: Own calculations except OHS 1995 (Bhorat et al, 2001: 77); OHS 1997 & 1999 (Dinkelman and Pirouz, 2001: 28); LFS (Simkins, 2004: 260).

- Notes: a) Even when the expanded unemployment rate is less than double the strict rate, it is possible that the expansion has more than doubled the number classified as unemployed. The rate may not double because the expansion increases the denominator (the number classified as in the labour force) by the same number as it does the numerator.
- b) Highest plausible U: Machibisa: All cases that could be classified as unemployed within the spirit of the standard definition, including all part-time workers who want more work and "non labour force" women who present no "valid" non-labour force occupation; Duncan Village: All 'NLF' women who would accept an RDP job, located near the place of residence, paying R30 for a six hour day, plus all underemployed women who were both searching actively and would accept such an RDP job.
- c) The Grahamstown results are drawn from Grahamstown East, the "poor" side of Grahamstown, a small university city in the Eastern Cape Province (Fryer and Stuart, 2002). Machibisa is part of Edendale, a freehold township of Pietermaritzburg, a medium size city and administrative capital of Kwa-Zulu Natal (see Fryer, 1994 and Fryer and Vencatachellum, 2003).

In samples where there are high rates of discouragement and low labour force participation, the major source of ambiguity concerns whether non-searchers (whether classified as in the labour force or not) should be classified as unemployed. This is a vexed question,¹⁸ which also makes comparison between samples hazardous. However, in Duncan Village, ambiguity from this source is less significant than ambiguity on the employment side. It is thus largely the reclassification of 'underemployed' to 'unemployed' that accounts for the large difference between the 'highest plausible' and expanded rates in Duncan Village. Characterising some individuals who *have* work as 'unemployed' may seem nonsensical. However, a well-established extension of the Todaro model is in terms of job seekers engaging in survivalist activities (eg Squire, 1979; Berry and Sabot, 1978).

In the Duncan Village sample, it is telling that in many respects the underemployed (or at least those who are searching for a better job) are more similar to the unemployed than the employed. Table 2 shows that in all respects (except that a majority of the underemployed are male),¹⁹ the underemployed have characteristics that are more similar to the unemployed than the employed. Their earnings are very low (reflecting low wages and low hours), they tend to be younger, and they appear to have very low reservation wages, indicated by the large proportion that said they would take an RDP job.

18 For example, Kingdon and Knight (2000) argue that the non-searching unemployed (i.e. those who are not searching but are willing and available to take a job) are sufficiently similar to the searching unemployed, and should be classified as unemployed rather than non labour force. However, this begs the question of why labour force participation rates are low in South Africa. Even if 'non-participants' are engaged in 'activities' (such as education and as housewives), it seems likely that the main reason that many of these people do not work is joblessness. In other words, even the expanded definition classifies people as unemployed, even though such people do not work, and even though the reason for them not working is that there are no jobs. Consideration like this underlie the adjustment made in Table 1 (see Note b), and more generally call into question the validity of both the strict and expanded definition in a context of massive unemployment. These matters are discussed in more detail in Fryer and Stuart (2002).

19 This is due to the particular definition of underemployed used being based on 'search', which as discussed, has positive as well negative connotations. Other measures suggest that women are on average 'more underemployed' than men. For example, there are more self-employed women than men (Table 6) and the average "utilisation index" (see Note b in Table 2) for men is 80% for men compared to 73% for women.

Table 2: Characteristics of the various “pure” labour market categories, Duncan Village, 2004

	Strictly Unemployed	(Under)employed searchers with income	Employed (and not searching)
Total (n)	138	52	83
i. Potential earnings per week ^b	R525	R506	R777
ii. Actual earnings per week	R0	R188	R631
Utilisation index (=ii+i) ^b	0	37%	81%
Hours worked per week	0	34	44
Accept RDP job? ^c	89%	84%	17%
Education (years)	10	9	10
Gender (% male)	45%	54%	52%
Age	30	35	38

Source: Own calculations

- Note:
- ‘Ambiguous’ cases are omitted, because the aim is to get an idea of the typical individual in each category rather than the proportions in each category.
 - This is an estimate (by the respondents themselves) of what people are earning in jobs of the sort for which the respondents are best qualified. The extent to which current earnings fall below potential earnings is an indicator of the degree of under-utilisation of human capital (the “utilisation index”).
 - The percentage of those who answered “yes” to the following question: “If the RDP created jobs near your house at R30 for a six hour day, would you take such work?”

3.2 Job search

Note that Table 2 indicates that the unemployed are not on average less educated than the employed. This suggests that education is not a determinant of the likelihood of having a job in Duncan Village. This is partially a statistical artefact, stemming from the cohort of younger individuals having high education levels and entering the labour market at a time of very high unemployment.²⁰ Nevertheless, the fact that education is only weakly correlated to employment rates, and that many well-educated individuals do not have work, suggests that other factors determine access to jobs. The paper now turns to addressing this point directly by considering job search.

Table 3: Percentage of unemployed searchers using the various search modes

MODE	OHS (1995)	Grahamstown (1996) ^a	Machibisa (1990)	Duncan Village (2004)
Place to place (p-p)	80	52	78	60
Word of mouth (w-o-m)	8	35	14	18
Newspaper/agency (formal)	12	13	8	21

Sources: Own calculations, except Bhorat et al. (2001: 78) for OHS '95. See Table 1 for explanations of the Grahamstown and Machibisa data.

Note: a) OHS 1995, and Duncan Village 2004, males and females; Grahamstown and Machibisa, females only.
 b) In the Duncan Village survey, search method is defined using three questions: F6e-Have searched for work (or a better job, or more work) in the last six months? F7b-How did you search? F7c-What is the most important means of information about potential jobs? All of these questions are open ended and invited detailed responses. Where multiple methods of search are evident, F7c is reported. It should be noted that considerable ambiguity remains as to how to classify people using multiple search methods.

²⁰ Young and old in Duncan Village are differentiated by unemployment rates rather than by education attainments. The 'strict' unemployment rate was much higher for youths than for prime aged adults (61% for the 15-30 group, compared to 39% for the 31-50 group), whereas youths were only slightly better educated, with 36% (compared to 31% for the older group) having 12 or more years of education. However, for South Africa as a whole, there is a dramatic difference in the average educational attainments of young and old blacks (Anderson et al. 2001). That this does not show up in peri-urban areas like Duncan Village is partly because of migration and partly because of apartheid era disparities in education provision.

‘Place to place’ search is the dominant search mode amongst the strictly unemployed in all the samples reviewed in Table 3. This is consistent with what might be considered the ‘stylised facts’ about job search in South Africa (Bhorat *et al.* 2001; Dinkelman and Pirouz, 2001; Kingdon and Knight, 2000). However, there are two reasons why this does not give a good picture of the information structure of the labour market. Firstly, very large numbers (in some samples, half of the ‘expanded’ rate) do not search at all (see Table 1). Secondly, individuals who are effective in their search do not remain unemployed, and therefore select themselves out of a sample of the unemployed. If success correlates with the search mode in the manner hypothesised in Section 2, the sample of unemployed will contain a disproportionate number of ‘place to place’ searchers and the discouraged. A disproportionate number of the employed, on the other hand, will have found their jobs with the other modes. Table 4, which pools current searchers with currently employed people who used the various search modes, appears to confirm this. The results imply that the sample of currently searching unemployed would be a biased indicator of overall search activity, and that ‘word of mouth’ and ‘formal’ give better access to the labour market.²¹

Table 4: Employed who used search mode to get current job, compared to current searchers

MODE	Duncan Village 2004 (Males and Females)		Machibisa 1990 (Females only)	
	Searching	Employed	Searching	Employed
Place to place (p-p)	60	27	78	43
Word of mouth (w-m)	18	46	14	38
Newspaper/ agency (formal)	21	28	8	20

Source: Own calculations.

Note: In the case of how people obtained their current jobs, there was far less ambiguity than with current searchers, because people were able to identify the method that secured them the job.

²¹ An alternative explanation in terms of cohort effects can be ruled out in this case, because, as discussed below, ‘place to place’ searcher are not only more likely to be unemployed, they are also more likely to be in ‘bad’ jobs.

Table 5 elaborates on this hypothesis. Firstly, it is evident that in both the Machibisa and Duncan Village samples, 'formal' methods are the preserve of the well-educated. This is consistent with the notion that education is only a functional signal for those with at least matric education. This is further confirmed by the finding that, when asked about occupational aspirations for their children under 15 years old, parents in Duncan Village who responded *universally* cited occupations that required at least a matric (questions H2fi and H2fii). Of these, 85 per cent cited an occupation that required tertiary education. This could be argued to reflect unrealistic aspirations. On the other hand, it may reflect that opportunities for people without such qualifications are extremely poor, and (like the high rates of labour force participation) the more hopeful attitude of people in places like Duncan Village.

Note that although the average education of individuals using 'formal' methods in Duncan Village is almost 12 years, over 50 per cent of individuals using this search mode have not found work. This may be due to a cohort effect (discussed on Page 15). In Machibisa, women using this mode had lower average education levels (than their Duncan Village counterparts) and faced dramatically lower unemployment.

Even more relevant for this paper is the difference between the individuals using 'word of mouth' and 'place to place' search. The theory suggests that these individuals face failure in the labour market *per se*, and that their labour market performance depends on their ability to access information through social networks. The theory predicts that 'place to place' search, which relies on *individually gathered* information, and weak ability to signal trustworthiness, and thus is likely to be associated with adverse selection, will be associated with poorer labour market outcomes.

The data strongly support this expectation. Moreover, at this level of aggregation, the distinction between the two modes does not appear to be explained by educational differences. The difference in terms of the probability of finding work is dramatic in both surveys. In the Machibisa sample, using 'word of mouth' also has a significant positive effect on earnings, so that the expected return to this kind of social capital is *twice* that accruing to search based purely on private capital. In Duncan Village, the difference in the probability of getting work is so great that it overcomes what appears to be a slight wage disadvantage (an anomaly that is discussed below) compared to those who used private information.

Table 5: Indicators of differential access

Mode	% male	Mean education (years)		Expected wage ^b		Unemployment		Wage (employed) ^b	
	DV	DV	Mach	DV	Mach	DV	Mach	DV	Mach
p-p	76% ^a	10.1	6.6	R98	R30	76%	50%	R415	R61
w-m	51%	9.7	6.4	R256	R66	36%	17%	R399	R79
formal	46%	11.7	9.8	R439	R136	52%	19%	R894	R168

Source: Own calculations

- Notes:
- a) The percentages represent the share of the search group with the particular characteristic. Note that percentages do not add to 100% in columns.
 - b) "Wage" represents earnings per week. The expected wage is a rough indicator of the return to each search mode. It is calculated as the average over the whole group of employed and unemployed associated with that search mode.

Table 6 breaks the Duncan Village sample into males and females, and also considers the self-employed. It is notable that 'word of mouth' is the most frequent mode by which both males and females got their jobs (recall that 'place to place' is dominant amongst the searching unemployed). The expectation that 'place to place' search gives the weakest access to jobs is supported again, particularly for females. Moreover, the observation (Table 5) that wages are higher for those who got their jobs using 'place to place' appears at least partially to be due to aggregation. This mode is used disproportionately by females, who also earn lower wages. For females, weekly earnings seem to be significantly higher in jobs accessed through word of mouth (R352 per week) than through 'place to place' search (R229). (The apparent anomaly for men is discussed in the next paragraph.)

Table 6: How did you get your job? Duncan Village, 2004

	SE	female			p-p	male		
		w-o-m	formal			w-o-m	formal	p-p
% of employed		51%	34%	15%		42%	23%	36%
% of self-employed and employed	36%	33%	22%	9%	18%	34%	18%	29%
Education	9.3	9.5	12.2	7.7	9.3	9.9	11.2	10.9
Age	34	36	36	38	33	38	39	37
UE rate ^a		42%	56%	87%		29%	45%	68%
Weekly earnings:								
i. current	R245	R352	R1020	R229	R476	R445	R748	R474
ii. potential ^b	R336	R524	R1060	R594	R1029	R448	R769	R691
Utilisation index (i÷ii)	73%	67%	96%	39%	46%	99%	97%	69%
searching now?	48%	33%	0%	0%	83%	32%	17%	11%
RDP? ^b	78%	44%	0%	50%	80%	39%	25%	56%
Total (n)	23	21	14	6	12	22	12	19

Source: Own calculations

Notes: a) Unemployment rate, calculated for sample of earners and unemployed using that category. All other figures for earners only.

b) Defined as in Table 2.

Table 6 also demonstrates that search mode correlates with other labour market indicators in a manner that is consistent with theory. Firstly, underutilisation of human capital is worse for 'place to place' search for both men and women. In the case of men, the anomaly of slightly higher wages received by those who accessed their jobs through 'place to place' search, does not appear to be due to better signalling. Such men appear to achieve poor jobs relative to their human capital.

Secondly, it is notable that a large number of people *with some work* indicated a willingness to accept RDP work. Once again the pattern is indicative of a correlation between job quality and search mode, with the 'place to place' categories demonstrating the highest likelihood amongst the employed (as opposed to self-employed) of accepting an RDP job. It is also noteworthy that the self-employed of both sexes are even more likely to accept such a job than the 'place to place' category.

Finally, how people got their jobs (and whether they are employed or self employed) correlates with whether or not people are currently searching (for a better job). Although word of mouth is associated with a *higher* search probability than ‘place to place’, this may be explicable in terms of individuals who got their jobs through social networks having better market information. However, it is intriguing that people who have work and are searching for a better job seemingly use ‘place to place’ *search* more than ‘word of mouth’ (see Table 7). Note that the fact that the ‘underemployed’ are similar to the unemployed in this regard seems to support the hypothesis that the distinction between the unemployed and underemployed is blurred.

Table 7: Current search activity

	Without work		Searching while working	
	Female	Male	Female	Male
formal	25%	17%	8%	27%
p-p	55%	69%	52%	58%
w-o-m	21%	14%	40%	15%
number (n)	73	59	25	26

Source: Own calculations

Table 8 refers to the characteristics of the strictly unemployed, broken down by gender. Most of the patterns that have emerged in the analysis are confirmed here. The dominance of ‘place to place’ is affirmed for both genders, but it is clear that for women, other modes are relatively more important compared to men once again. ‘Place to place’ search appears to be associated with failure. The most telling statistic is the proportion of individuals who have been searching for more than a year.²² ‘Place to place’ searchers have a dramatically higher probability than word of mouth. Although the shorter search spells may not necessarily indicate successful transitions between unemployment and

²² In OHS 1997, for instance, 67% of the unemployed had been unemployed for one year or more, and of these, more than half had been unemployed for more than three years (Kingdon and Knight: 2000: 6). The picture was broadly the same in LFS September 2002 (Simkins, 2004: 362). As these authors note, these figures are likely to be underestimates because they record uncompleted spells of unemployment, and this reservation applies to the Duncan Village data reported here. The Duncan Village dataset does contain information on completed spells, but this is yet to be analysed.

work, all of the evidence suggests that word of mouth delivers jobs more frequently and more quickly.²³

The gender comparison between 'place to place' and word of mouth is less straightforward. As with the employed, the indicators are that males using 'place to place' search have better prospects than males using word of mouth. On average, they have higher education, higher reservation wages, and higher 'potential earnings'. What is really dramatic is the very low number of males using 'word of mouth'. This is particularly interesting because even though it delivered jobs with slightly lower wages, word of mouth was *the* most important mode through which males accessed jobs (see Table 6). The fact that there are so few unemployed word of mouth males is not exclusively due to males with social connections finding jobs quickly and thus selecting themselves out of the sample, leaving a small remaining group of 'lemons' whose social connections are useless and whose prospects of finding work are minimal. The male 'word of mouth' unemployed had been searching on average for *less* time than other males. Moreover, in the pooled sample (employed and unemployed) more women (46 per cent of the pooled sample) are associated with word of mouth search than males (33 per cent).

What seems to be indicated is that women simply have more access to social networks that provide access to jobs. The question is therefore why more searchers (and particularly men) do not use word of mouth. The answer is probably that they cannot: it is not a question of people *choosing* different search modes. If a job searcher can generate a signal which employers trust using formal methods, that searcher will do so. If they cannot generate signals they use social networks, which are by nature exclusive, but are also by nature likely to provide a very limited set of information about jobs. For example a worker may know about a job in *his* firm, and may transmit this information to *one* social connection. The connection will therefore have information about *one* job, compared to a person who looks at the vacancy column in the newspapers and has a range of jobs to apply for. Of course when jobs are scarce this may not translate to great choice for jobseekers, because of rationing. However, it may be that the better quality of information through 'formal' signals gives employers better choice than when they use relatively narrow social networks.

23 The possibility that unemployed individuals drop into and out of the labour force, and that individuals' accounts of their own pasts may be biased in significant ways, has not been considered in much detail in the South African case and probably cannot be explored with available datasets. These effects are significant in the US (see Clark and Summers, 1979; Akerlof and Main, 1981; Akerlof and Yellen, 1985) and are likely to be highly so in South Africa. However, it seems unlikely that the relatively low unemployment duration of those using word of mouth is entirely accounted for by this kind of effect. As Table 5 indicates, there is evidence that word of mouth provides better access to jobs.

Table 8: Strictly unemployed: characteristics by search mode. Duncan Village, 2004

	female			male		
	w-o-m	formal	p-p	w-o-m	formal	p-p
% of strictly unemployed	21%	25%	55%	14%	17%	69%
Education (years completed)	10.2	11.3	9.4	7.7	12.0	10.1
Age	30	32	30	30	27	32
% searching more than a year	23%	56%	66%	40%	43%	68%
Weekly earnings:						
<i>reservation wage</i>	R486	R498	R258	R223	R568	R285
<i>potential earnings</i>	R636	R855	R322	R329	R766	R468
RDP?	85%	61%	97%	100%	75%	98%
Total (n)	15	18	40	8	10	41

Source: Own calculations.

Note: Calculations and definitions as in Table 2

3.3 Feedback effects

There is evidence of dramatic underutilisation of human capital, represented not only by unemployment, but also by underemployment reflected in disparities between the work people do and the kind for which they are 'best qualified'. This is likely to have a number of effects on the accumulation of human capital, as discussed in Section 2. For example, the prevalence of underemployment is likely to undermine on-the-job training both directly and because it undermines the private return to such investments. Not surprisingly, there is evidence that returns to experience are nil.

Apart from the effect on the individual's own human capital, on social capital, and on the ability of the market to process information, there are likely to be other feedback effects on the stocks of human, social, and market capital. One such effect that has already been inferred is that the market *per se* will collapse in the presence of high unemployment and human capital quality variation, and 'open' market transactions will be replaced with the use of 'closed' social groups which reinforce the exclusion of individuals who can generate neither formally nor socially constructed signals. Another feedback effect that can be explored with the Duncan Village database is the intergenerational one. It is well established in the development literature that at the household level, there may be strong substitution effects (returns to education affecting the incentive to acquire human capital) and income (wealth) effects on the demand for education. Glewwe and

Jacoby (2004) find significant wealth and substitution effects on the demand for education in Vietnam. Thomas *et al.* (2004: 71) find dramatic effects on household spending on education²⁴ associated with Indonesia's crisis in 1997/98. It is possible that families faced with chronic rather than transitory poverty (as in the case of unemployed households in South Africa) may respond differently. However, there is some evidence in South Africa that these income effects are important (Fryer and Vencatachellum, 2004), and moreover, that returns to human capital are very low (Hertz, 2003), particularly for primary and incomplete secondary education. This undermines the incentive to keep children at school, and, even where enrolment is high, to engage in expenditures that are complementary to the acquisition of human capital (Fryer and Vencatachellum, 2004).

A rough indicator of possible intergenerational effects is provided by Table 9, which shows the educational attainments and labour market outcomes of young individuals²⁵ from different kinds of households.

Although the sample size of Type I youths (living in a household with an unemployed head) is small, the results are nevertheless striking, and it is suggestive that Type II youths are intermediate between the two categories for all the educational measures. Evidently, there are dramatically more Type III youths still attending school. It is therefore not surprising to find that the average level of education is much higher for Type III youths. However, the margin by which their average education exceeds those of Type I youths is remarkable. As might be expected (but is not reported in Table 9) Type I youths predominantly used 'place to place' (only one individual used formal search), whereas the majority of Type III youths used formal search.

24 Thomas *et al.* (2004) argue that a typical response to a crisis in household income in a poor family was to take the youngest children out of school, presumably because larger investments already sunk into older children would be lost if these were taken out of school (Thomas *et al.* 2004: 81). The effects of young children falling several years behind, or even receiving lower complementary investments in the crucial years (see Footnote 15 above) can have permanent effects on human capital trajectories.

25 The database provides detailed information on children still at school and, in particular, of the factors that determine whether adults are committed to their children's education. However this has not yet been analysed.

Table 9: Characteristics of youths (15-25) in household with employed and unemployed heads

	Type I youths Unemployed head	Type II youths Underemployed head	Type III youths Employed Head
still at school or in tertiary education	20%	37%	49%
of those who have left school:			
<i>completed matric</i>	5%	18%	71%
<i>average years education</i>	8.8	9.6	11.2
<i>employed</i>	0%	36%	18%
<i>searching</i>	55%	68%	60%
Total (n)	20	35	43

Source: Own calculations

However, it is noteworthy that the better educational attainments and (presumably) ability to search, do not translate into access to jobs. Although the situation for Type I youths is worse (none of them were employed), only 18 per cent of Type III youths had any work (somewhat more Type II youths had jobs but the proportion is still small). This is consistent with the pattern reported in Table 5, and is suggestive of a very significant shortage of jobs, that is worst for youth and that cuts across human capital and search modes. The fact that even people with matrics seem unable to get jobs suggests that the degree of labour market slack and underutilisation is very high.

4. Conclusions

The results presented in this paper are based on simple cross tabulations, and still have to be tested with multivariate analysis. Certain key variables that may offer further explanation of job search across gender and generation have not yet been included. Moreover, the sample is a relatively small one and is drawn from one small peri-urban area. For these reasons, the results should be treated with some caution.

Nevertheless, the results are suggestive. Firstly, they support the notion that unemployment is a complex phenomenon in South Africa, and *both* its measurement and diagnosis need to take into account this complexity. Secondly, the detailed results from the Duncan Village survey support an explanation in terms of endogenous distortions stratifying the

labour market and generating feedback mechanisms consistent with the theory set out in Section 2. This is consistent with the view that unemployment may have a significant endogenous component.

It is important to emphasise that simplistic solutions based on this evidence are to be avoided. It might appear, for example, that because inability to search effectively seems such an important factor in exclusion, creating signalling institutions (such as job centres) would help people to find jobs. However, the problem seems to be that there are *no* jobs, and this is attested by the very high unemployment rates even amongst those who do use formal channels. Similarly, it would certainly appear that the lack of variety of signals (and hence, for example, the overwhelming importance of attaining at least matric) is one of the core problems. However, as Fryer and Vencatachellum (2004) show, it seems unlikely that changing the structure of education without addressing levels of poverty and joblessness, and the structure of labour demand, would be effective. Poverty and joblessness undermine human capital formation and contribute to endogenous market failure, and hence could undermine such policies. Moreover, the apparent lack of demand for intermediate skilled workers in South Africa suggests that even policies that improved human capital and signalling outcomes would be ineffective unless the structure of labour demand adjusted.

Finally, these considerations suggest that, while the paper has highlighted the potential importance of *endogenous* factors operating at the household, community, and local labour market level, this does not mean that 'macro' issues are unimportant. On the contrary, because joblessness created by macro problems becomes 'locked in' by such factors, the urgency of discovering policies to create jobs is re-emphasised. In other words it may well be that the solution to unemployment remains the simple one of how to create jobs. The argument of this paper is that the structure of exclusion is to an important extent caused by the overarching macroeconomic problem of mass unemployment, and it follows that microeconomic problems (such as those discussed in this paper) could melt away in the face of sustained job creation. However, as yet, the extent to which local factors are likely to undermine job creation policies is unknown. Before any judgement can be made about the appropriate mix between macroeconomic and microeconomic policy, the endogenous feedback mechanisms need to be better understood. The paper suggests that both theoretical development and disaggregated statistical approaches that take into account actual labour market processes are required. suggests that both theoretical development and disaggregated statistical approaches that take into account actual labour market processes are required. suggests that both theoretical development

and disaggregated statistical approaches that take into account actual labour market processes are required.

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