THE ROLE PLAYED BY PERSONAL CHARACTERISTICS AND CHOICE OF JOB SEARCH METHOD IN FINDING EMPLOYMENT IN SOUTH AFRICA

BY

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ABSTRACT

Unemployment in South Africa is high and has been for many years. There are certain characteristics that are shared between unemployed individuals. The search method that individuals use also impacts the possibility of finding employment. A link between the characteristics that affect employment and the characteristics that affect the job search method needs to be established. This dissertation examines two fundamental questions about unemployment in South Africa. Firstly what characteristics does a person possess that makes him more susceptible to unemployment? These characteristics include race, gender, location, educational attainment, and age. Secondly does the method of job search that an individual uses hamper his chances of employment and do the aforementioned characteristics dictate which method is used? The mismatch between a popular search method and a most successful one gives rise to individuals being unable to re-enter into the labour market and thus prolongs the length of unemployment. In analysing aspects of different search methods it is better to use those individuals who are actively searching therefore the narrow definition of unemployment has been adopted in this paper. The findings in the paper support the suggestion in the literature that the aforementioned characteristics do play an important role in employment status and the method of search that has been used. The dissertation makes use of probit regressions and analyses the marginal effects which determine who is more likely to be unemployed or use a certain job search method. The regressions show that a certain profile will be unemployed. It is found that an African female living in a non-urban area who is between 15 –30 and has some high school education is most likely to be unemployed than anyone else in South Africa. It is also found that certain methods of search are more popular among certain race groups than others. Most African and Coloured individuals use “enquiring at workplaces” as their most common form of search however they have higher unemployment rates than Indians and Whites who use “placed and answered adverts”. The latter two groups are also found to be more educated than the former two groups. It is important to realize that finding a job is matching an employer with an employee at a specific point in time. Therefore if they do not know what is available to them (and it is found that many individuals do not know of available jobs) then it will be difficult to match an employer with an employee especially if employer and employee are not using the same search method to find each other.

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Section 1: Introduction

Unemployment is a key variable in any economy. The performance of the labour market and sometimes the entire economic records of governments are judged by what happens to unemployment. This is because unemployment is associated with the loss of output – if the unemployed had jobs then domestic output would be higher. Individuals, however, are concerned with loss of income, loss of skill and work habits, which damage the chance of finding new work (Pissarides and Wadsworth, 1992: 58).

South Africa has experienced high unemployment rates in recent decades (Dinkelman and Pirouz, 2002; Klasen and Woolard, 2000; Wittenberg, 1999; Nattrass, 1999; Bhorat, 2002; Wilson, 1999; Van der Berg 1992, and Kingdon and Knight, 2000). One of the reasons for this high unemployment rate can be attributed to the way unemployment within a country is defined. There has been a vast literature that has arisen in the calculation of unemployment. There are two definitions for unemployment the narrow definition and the broad definition. When analysing these definitions it can be argued that countries unemployment is either overstated or understated. These definitions also distinguish between whether people are unemployed in the labour market or simply non-participants. Categorising people into groups of unemployed and non-participation is easy however what needs to be analysed is why non-participants are not actively seeking employment and who these individuals are (if there is any specific profile for unemployed individuals).

By definition, it is assumed that unemployed individuals are searching for employment. This however raises another interesting topic about how individuals go about searching for employment. A vast literature has arisen around search theory. The amount of effort an individual uses to find employment has an impact on him finding a job. Furthermore, the type of search method used also influences job search. The reason for this is quite clear because job search can be compared to a barter economic system. If an employer and job seeker do not use the same methods and same time frames

to find each other then search will not result in employment. Therefore it is important for a job seeker to use methods of search that potential employers use.

The paper begins with determining the extent of unemployment in South Africa. Both the broad and the narrow definition of unemployment are discussed so that a decision can be made about which definition to use for the empirical part of the paper. There are both positive and negative reasons for using each of the definitions. The broad definition is often used in developing countries as it highlights the discouraged worker effect which is not present when using the narrow definition. The discussion not only deals with the reasons why unemployed are discouraged from finding jobs but it also deals with the impact of unemployment on household formation (and vice versa) and alternative reasons why individuals are non-participants instead of being classified as unemployed.

An important reason why individuals are unemployed is because they are unable to find suitable employment or simply because they cannot find any employment. Search by individuals is an important facet of unemployment as this is what ultimately aligns job seekers with employers. If employers and job seekers do not search at the same time and using the same medium then they will not find each other and it will not result in employment and inevitably prolongs unemployment. This is discussed in section 2.3 along with other important search criteria which impacts on unemployment.

Although the main focus of this paper is the method of search that is used to find employment it is also important to analyse unemployment in South Africa in order to determine recurring factors and to address issues that are persisting in the labour market. Section 3 clearly looks at unemployment in depth looking at work from Bhorat and Leibbrandt (1996) and Statistics South Africa's Labour Force Survey (March 2003) to analyse whether there are trends that can be used as a cornerstone for the empirical part of the paper. Certain characteristics

of unemployed are found to be dominant among unemployed in South Africa including race, gender, education, etc.

The ground work of the paper lies in the first few sections and many questions are raised that can be highlighted in the methodology before the empirical work is to be done. Section 4 outlines the methodology that will be used in this paper. The proposed questions that have to be answered include:

- Who in South Africa are unemployed and which factors contribute to their unemployment? It is important to assess whether there are defining characteristics of those that are unemployed. These characteristics include gender, race, age, educational attainment, and location.

- How long have people been unemployed before they re-enter the labour market? How many people are unable to re-enter the job market (determined by the length of search) and how active are they in their job search?

- What type of skills and/or educational attainment do these individuals possess compared to the type of skills or educational attainment that is required for jobs?

- Who are looking for jobs and how do they go about searching for jobs? Which of the job search methods prove to be most effective? The relationship between the characteristics of those that are unemployed and the resources available to them provide some understanding as to what methods prove to be popular and which of these methods prove to be successful.

Some useful cross tabulations of various variables are tabulated in order to identify which characteristics prove to be the strongest among unemployed individuals and the different search methods that are available before any regressions are run. Therefore, the independent variables are tabulated

together with the dependent variables in order to identify any trends that are likely to surface when running the regressions. These cross tabulations do in fact tie up with what the literature posits and also corresponds to the regressions is section 6.

STATA was used to run regressions. The regressions that were used were probit models because the dependent variables that were used in the analysis were categorical variables and therefore OLS regression could not be used. The findings in this section are in line with the literature review. This section also pinpoints "stereotypical individuals" who are more likely to be unemployed given certain characteristics (including race, gender, education, location, and age) and also which methods of search individuals are likely to use given the aforementioned characteristics.

Finally, section 7 concludes the paper. It is found that in South Africa some methods of search are more effective than others. It also shows that personal characteristics that individuals possess play an enormous part in whether individuals are able to find work. The location in which people live also improves the chance of people finding (not finding) employment. The characteristics: race, gender, location, age, and educational attainment, play an important role in whether individuals are unemployed and which methods of search they use in order to find employment. South Africa has a diverse population and yet when analysing the unemployment statistics they do not represent the diversity of the population. The South African population is therefore unable to lift itself out of the downward spiral where some race groups are more likely to find work than others.

Section 2: Literature Review

The literature review will be broken down into three sections. The first section will discuss how unemployment is defined. The second section will answer the question "are people unemployed or non-participants in the labour market". The last section will focus on search theory and how this impacts on individuals finding employment.

Section 2.1: Unemployment Theory: Defining Unemployment

Individuals lie on a continuum between definitely not wanting to work and wanting to work very much. The unemployed are those who want a job and cannot find one at the prevailing wage rate while non-participants are those who do not want to work at the prevailing wage rate (Metcalf, 1992). Individuals fall into the categories of unemployed and non-participants by using the two definitions for unemployment, namely broad and narrow. The broad definition of unemployment includes all those who are not employed and are available to work, irrespective of search activities. The narrow definition of unemployment includes all those who have looked for work in a given period – usually the week or a month before the inquiry are deemed to be unemployed (Kingdon and Knight, 2000).

The definition of who is unemployed is vital to understanding what unemployment really is. Statistics South Africa (SSA) uses the following definition for unemployment:

1. any persons 15 years and older who
2. were not in paid or self-employment;
3. were available for paid employment or self-employment during the seven days preceding the interview;
4. took specific steps during the four weeks preceding the interview to find paid employment or self employment; or
5. had the desire to take up employment or self-employment.

The narrow definition of unemployment is defined by points 1 – 4. Therefore the individuals should have actively searched for a job in the month preceding the interview. If they did this then they would be unemployed using the narrow definition but if they did not actively search for a job in the month preceding the interview then they would be classified as unemployed using the broad definition. The broad definition on the other hand includes 1 – 3 and 5 above. Therefore if the individual has not actively searched for employment but would like to work they would be unemployed using the broad definition but not the narrow definition. According to Bhorat and Leibbrandt (1996) measure 4 captures the discouraged worker effect[1] (Bhorat and Leibbrandt, 1996: 145).

The International Labour Organisation (ILO) prefers the narrow definition but suggests that the time period should be reduced to a week in order to be effective (Wittenberg, 1999). Using this criterion, all those who have not searched for employment a week priory to the inquiry will be deemed non-participants. The shorter this time period the more non-participants will emerge. However if the time period is extended then some will fall into the category of being unemployed. The narrow definition is preferred because it is the common measure that is used internationally. The broad definition on the other hand tends to exaggerate the unemployment rate. It is suggested that the broad definition is more realistic for developing countries because people who live in rural areas are not able to actively search for employment as often as those living in urban areas (Barker, 2003). The choice of definition is also important when comparing unemployment statistics with other countries, because if a country uses the broad definition of unemployment then it will be unable to compare its unemployment rate to that of countries, which use the narrow definition.

SSA began using the broad definition of unemployment from 1987. In 1993 the broad definition represented South Africa's official unemployment rate. The apartheid government used the narrow definition of unemployment as its

[1] The Discouraged worker effect will be analysed in the following section of this paper. It is interesting to note that the SSA has a measure of whether individuals have the desire to be employed or if they are discouraged from working in its definition of employment.

national statistical measure of unemployment. This was criticised because of the high levels of unemployment that persisted in South Africa. There was also substantial criticism over ruling out those who wanted a job but who just have not looked for one in the period that was specified by authorities. Therefore South Africa states both the broad and the narrow definition of unemployment when compiling its unemployment statistics. However since 1998 Statistics South Africa has adopted the narrow definition as the official unemployment rate in South Africa (Dinkelman and Pirouz, 2002).

The reason why it is important to analyse both the broad and the narrow definition of unemployment is because calculations based on these two definitions of unemployment can vary dramatically. According Bhorat and Leibbrandt (1996) there is a significant difference between broad and narrow unemployment rate in 1995, which is large enough to alter the context within which unemployment policies are assessed and debated. The figures are 36.2% and 20.3% respectively (Bhorat and Leibbrandt, 1996: 145). Therefore it is unacceptable to only use the one definition and completely discount the other. It is important to realise the components that make up both of these definitions in order to make a learned judgement as to which definition would be more suited in South Africa given the countries history, the impact that the change in the definition of unemployment will have on the statistics and the definition that is used by other countries.

Section 2.2: Unemployed vs. Non-Participants

The most widespread popular theory about voluntary unemployment is that social security benefit levels close to potential earning levels deter individuals from seeking work (Hill, 1976). Klasen and Woolard (2000) find that South Africa does not adhere to this typical behaviour, which can be seen throughout Europe. Unemployment compensation systems in Europe contribute to the level of unemployment. South Africa, on the other hand, is experiencing one of the highest reported unemployment rates in the world with minimal unemployment compensation systems in place (Klasen and Woolard, 2000). It should also be

noted that South Africa's compensation system does not come close to potential earning levels as indicated by Hill. Unemployment, using the broad definition, has increased from 29.4% in 1993 to 37.6% in 1997 compared to 12.7% in 1993 to 22.9% in 1997 using the narrow definition of unemployment (Klasen and Woolard, 2000). In 1997 there is a 14.7 percentage point difference, which can be characterised as non-participants. The question that now has to be answered is why are people unable to take jobs and what is causing them to become discouraged from looking for a job?

Household formation appears to be an important reason for non-participants to remain unemployed. According to Klasen and Woolard (2000), there have been numerous studies to determine how the structure of households affects unemployment. One of the models concentrates on whether young males live with their parents or form their own households. The unemployed appear to have a lower propensity to set up their own households and therefore they live with their parents (Klasen and Woolard, 2000). It has also been found by Wittenberg (1999) that young unemployed delay marriage. Children who live with their parents are usually less economically active than those who live by themselves. It has also been found that young employed people tend to live in smaller households while young unemployed people tend to live in larger households for support (Wittenberg, 1999).

Although household formation has an impact on unemployment, unemployment also has an impact on household formation. It has also been found that unemployed persons attach themselves to other households, who have access to resources, for support (can be their extended family and in some rare cases people they don't even know) and these household structures adapt to accommodate the unemployed. However, it is very rare that the unemployed are household heads (Klasen and Woolard, 2000).

An interesting observation by Dinkelman and Pirouz (2002) is that those without jobs are more likely to live in larger, poorer households concentrated in rural areas. They also state that searchers are more likely to live with searchers,

while non-searchers live with other non-searchers. This suggests that job search strategy is often conditioned by household structure. Therefore it can be said that household structure may be an outcome of search behaviour, rather than a determinant of such behaviour (Dinkelman and Pirouz, 2002).

Due to South Africa's history, there is a distinct pattern of labour market activity between gender, race and location. Wittenberg (1999) finds that the African population group's transition into the workforce is slower than any other race group. There is a 100% employment rate of white males aged 25 whereas for African men their peak level is at the age of 30 and only 70% are employed.

It has also been found that people living in urban areas have a higher level of labour market participation if it is measured by employment and strict unemployment only. If the broad definition is used then urban people have higher employment rates and higher unemployment levels. Many rural people are unemployed when using the broad definition (Wittenberg, 1999). The unemployed migrate to areas where they can find support instead of areas where they can find jobs. In South Africa many move back to the homelands to find support where the prospects of finding a job are slim to none. This prolongs their unemployment indefinitely. There are only limited job opportunities in rural areas, which reduce the probability of finding a job. There are also search costs to travel to urban areas to find work. This could lead to non-participation.

Intuitively it would be expected that there is a relationship between education and employment or unemployment levels. The more skills people acquired increase their likelihood of finding a job and vice versa. Wittenberg (1999) argues that there is a counterintuitive relationship between unemployment and education: Some people with some (but incomplete) education have a higher unemployment rate than those with no education at all. However people who have reached Matric will actively search for jobs as opposed to those who do not have Matric. Labour market conditions may be prohibiting entry of young educated individuals because older less educated individuals are occupying the labour market. Firms have invested in these individuals over the years and they

have gained valuable experience and would therefore be an indisposable asset to the firm even though there are younger, more educated individuals seeking employment.

This analysis suggests that there is another way to enter the job market without adequate qualifications. The ILO has noted that South Africa uses informal methods of recruiting people. It is more important to know someone (have contacts) in the firm than go through the proper channels of finding a job in most firms.

"In recruiting production workers, most firms use informal methods. Thus, as their main method of recruitment, 41.4% relied on friends and relatives of existing workers; 26.2% used advertisements; 12.6% called upon former workers; 7.3% came from direct applicants, at the factory gate; 03% came from the "group's data base"" (Wittenberg, 1999: 33).

Berndt (1991) uses the analysis of screening to try to analyse how firms would hire labourers if education did not improve the productivity of wages. The screening hypothesis serves as a signal to employers about the qualification of the employees. The screening hypothesis argues in favour of educated individuals. However it does not take into account that the uneducated could be just as productive in the same job as the educated individual. Therefore degrees and diplomas are merely a signal for the potential to be more productive but this does not necessarily have to be the case. Therefore education plays a role in unemployment in any country.

Kingdon and Knight (2000) cite two possible reasons for the lack of job searching in South Africa among the unemployed namely 'the taste for unemployment hypothesis' and 'the discouraged worker hypothesis'.

The taste for unemployment hypothesis suggests that because income can be redistributed within households reduces the search efforts of those who are unemployed in the household. If the members of the household constantly support these individuals then they will have no incentive to look for a job. This

is usually the case with high-income households. According to Klasen and Woolard (2000) low income households (who rely on labour income and/or social grants) cannot withstand too much financial pressure from unemployed individuals. These unemployed individuals can push these households into poverty. Knight and Kingdon (2000) suggest that under the taste for unemployment hypothesis those individuals should be deemed as non-participants.

The discouraged worker hypothesis posits that job search of some individuals is hampered by poverty, cost of the search, long duration of unemployment, and unfavourable economic conditions. People may be discouraged from looking for jobs because of the high unemployment rate and the length of their unemployment. Wittenberg (1999) suggested (analysis of previous paragraph) that firms hire less than 10% of their staff from applications presented to the firm and this could further discourage workers from looking for jobs because the probability of being hired is very low (7%). However, to class these individuals, as non-participants would be misleading as their search is being hampered due to uncontrollable circumstances.

People who are unemployed usually live in the poorest income decile (41% of narrow unemployment) and become smaller as one moves to the higher income decile where unemployment is only 1.2% in the richest decile. This could discourage workers as they are constantly surrounded by other unemployed individuals and they live in harsh conditions. 49% of the broad unemployed and 38% of the narrow unemployed people live in households where income per capita is below the international poverty line of $1 a day while facing inferior access to necessary facilities (electricity, water). The non-searching unemployed are, on average, the most deprived among all economic activity groups (Bhorat and Leibbrandt, 1996).

To decide whether individuals are unemployed or non-participants the two definitions for unemployment, namely broad and narrow is used. All those who say that they are unemployed may not be unemployed when using the narrow

definition but may be unemployed using the broad definition. Although the ILO suggests the narrow definition should be used the time period may be too short (one week) and therefore the unemployment levels will be underestimated. South Africa has a high unemployment rate but also a high non-participation rate. Household formation is an important reason for non-participants to remain unemployed. This is because they have a lower propensity to set up their own households and therefore attach themselves to other households. Race and location also influences whether individuals are unemployed or simply non-participants. The relationship between education and employment or unemployment levels in South Africa is a bit blurred. The above analysis suggests that there is another way to enter the job market namely through informal methods of recruiting people. This can lead to the 'the discouraged worker hypothesis'. Under the discouraged worker hypothesis those people should be deemed unemployed because they do want to work and they do want to find jobs but they are discouraged from doing so due to uncontrollable circumstances whereas under 'the taste for unemployment hypothesis' those individuals should be deemed as non-participants because they rely on the redistribution of income within households and do not actively seek employment. The key to deciphering between those who are unemployed and those who are non-participants lies solely in the definition used to describe unemployment.

Section 2.3: Search Theory

"The rate of arrival of job offers will depend on the level of demand in a particular labour market in which the individual is searching. It must also be dependent on the level of effort with which the individual is searching the market" (Wadsworth, 1991). This section of the paper highlights the differences between employed individuals who are searching for a job compared to unemployed individuals who are searching for a job. It could be said that because employed individuals are also searching for jobs, they decrease the probability of unemployed individuals finding jobs. This is one of the problems regarding search methods that unemployed individuals have to face. Other

problems that affect search methods include the status of being employed or unemployed, age, unemployment insurance benefits, and level of educational attainment. The method of job search used also plays a significant part in them finding employment. These methods include, newspapers, Internet, word of mouth, recruitment agencies, direct contact, relying on friends or relatives etc. The problems that unemployed individuals face and the methods most commonly used by individuals to find employment will be discussed below.

There are two features of search markets. The one is uncertainty and the other is that search might not end up with a match. It is also important to realise that many workers may be looking for employment but there may not be sufficient vacancies for all these searchers and the vacancy may not suit the searchers qualifications. The search intensities differ between individuals and therefore the ideal candidate for the job may not be hired. Search can be seen as a form of investment because it takes time and it is costly. However the outcome of the search can lead to future benefits. Wittenberg (2002) suggests that workers should not take the first job and employers should not hire the first employee.

The probability of gaining employment is the product of a) receiving a job offer and b) accepting it. Employees have the choice to search for jobs and to accept or reject the offer. A distinction has to be made between those individuals that are searching and are currently unemployed with those that are searching and are currently employed. Workers can queue for jobs and firms hire the most productive applicant. As a result, an unemployed worker's ranking relative to other job seekers will influence his job finding rate. Therefore the individuals that are unemployed and searching can be pushed out of the labour market by those that are employed and searching (they have experience and contacts) especially if they are educated, employed and searching.

Search will only take place if it is profitable. However, in an environment of mass unemployed, as is evident in South Africa, it may be rational not to search at all. This may be the case if the possibility of finding a job is low and if the costs involved in finding the job is high. This could be a possible reason why

some individuals would be willing to work but do not consider it a worthwhile investment strategy. This also gives rise to the discouraged worker effect (Dinkelman and Pirouz, 2002).

The reasons why the unemployed are searching for jobs should be quite clear. However it is important to analyse why employed individuals are also searching because effectively they are hampering the chances of unemployed searchers from finding employment. The reasons why employed individuals search for employment include a) they are unhappy with their place in the labour market b) higher wages c) quality of jobs available and their characteristics d) other job attributes like working conditions and future wage prospects all influence the mobility and search behaviour of employees (Ophem, 1991).

Those that are employed and actively searching for jobs their entry into the job market causes congestion. This holds for the existing job applicants and for the firms because they are now dealing with excessive job applications. Since these new applicants are already employed, firms open new job vacancies that are attractive to them and the close vacancies of those that are quitting (these jobs would only be attractive to the unemployed). Despite the increase in the job vacancies the composition of these jobs has changed and they do not favour the unemployed. This and the congestion of the job search slow down the response of the unemployed while the jobs that are provided become more volatile. Yavas (1994) asserts that there are technological externalities in that the search effort of one agent may have an impact on another agent. It may affect the gains of search from another agent. Lindeboom et al (1994) suggests that someone who is employed has more contacts and is more likely to find a job than someone who is unemployed.

Pissarides (1994) explains that many people who quit their jobs usually do so because they have another job lined up for them and therefore do not experience any unemployment. It is also important to note that many employed workers are actively searching for a new job.

According to Pissarides (1994), the number of employed job seekers responds to the changes in economic conditions and they are usually those that are in short term jobs (part time). However, Wittenberg (2002) states that youth are more likely to be searching because of social pressure. If their friends do not find jobs then they might be discouraged from searching. However if everyone in their social circle all has jobs and they are finding it difficult to find a job they will still continue searching because they want to fit in with their friends. Donald (1991) agrees stating that youth have a high rate of voluntary job mobility. Mlatsheni and Rospabes (2001) assert that youth are more likely to leave their jobs than older employees. Therefore there is less incentive to hire youth. For this reason job tenure is important. Pissarides (1994) explains that tenure of jobs is important because the longer you stay at a company the more senior you can become and this helps to increase the wage rate that is obtained. Usually this is high enough to satisfy the worker and therefore he does not need to look elsewhere for a job.

Wittenberg (2002) cites Pissarides who says that capitalist won't want to create new vacancies if they know it is going to be difficult to dissolve the contract in future. They also prefer to hold on to employees even though their job is no longer profitable because it is difficult to find new employees and sometime jobs stand open for a long time while employers are screening suitable candidates.

Unemployment benefits and search activity play a role in the duration of unemployment. It can have a positive effect on employment and a negative effect on unemployment. According to Wadsworth (1991) those who are unemployed and actively seeking employment, their search efforts will be different from those who are claiming benefits. More benefits give more money with which to search. Therefore increasing the chance of becoming employed. However, insurance benefits also reduce search efforts because it acts like a safety net. As discussed earlier in this paper South Africa does not have great unemployment insurance benefits however it has one of the highest rates of unemployment.

Another critical factor that plays a part in finding employment is the educational attainment by workers. Identical workers may have the incentive to diversify by means of education, which in some cases can be above the social optimal level required. According to Moen (1999), a part of private gains to education is that it reduces the probability of being unemployed. However, there is also the problem that individuals may over-invest in human capital, which could make them over qualified for the positions that are available in the job market. Moen (1999) also suggests that unemployment leads to an under-investment in education. This is true because unemployed individuals do not have resources available to them to acquire additional education and furthermore they are unable to afford education because of their unemployment status.

Wittenberg (2002) explains that in South Africa education only makes a sharp difference for those with post matric qualifications. There is a relative lack of importance of education (below matric) in determining access to employment and this suggests that education is not the major screening process for unskilled and semi-skilled jobs. Matric decreases its value as a screening device and increases the importance of networks by the following ways: the quality of matric is likely to be highly variable between different individuals because the system has changed over time. And because so many people have matric it is difficult to sort through these individuals.

Wittenberg (2002) also suggests that education does not provide a sufficiently good signal about worker quality to potential employers. Therefore contacts are important for finding jobs. This could be used to explain why employers hire people through insider networks. This reasoning can be quite rational because if an employee recommends one of his friends for a job then the probability that the friend is lazy and won't get the job done is quite small. This is because if the friend does not work to his full potential then it will reflect badly on the worker. Secondly if the friend gets the job it is more than likely that he/she will work hard so as to not let the employee down because the employee recommended the friend as a favour.

If arrival of job offers are independent of education then a) high level of unemployment implies that human capital remains idle for a large portion of the time b) high unemployment rate weakens the workers bargaining power and reduces the share of return from education allocated to the worker (Moen: 1999).

Wittenberg (2002) suggests that there are basic search frictions, which prevents the worker and employer from finding each other. These include asymmetric information between the worker and employee (a potential worker may not read the newspaper in which the job is advertised), and screen costs involved, and contract need, which should be agreed upon by the employer and worker.

The success of any search method depends on whether both the employer and employee are using the same method. After all employers are searching for the perfect worker while employees are searching for an opportunity that best suits his/her qualifications and potential. The employer and employee can both be involved in extensive search activities but they will never meet unless they are both using the same search methods to find each other. Lindeboom et al (1994) suggest that employers and workers only meet if they use the same medium. They find that unemployed have more luck with recruitment agencies and employed and educated use advertisements. Low level of education would also use informal methods of job search like relying on word of mouth.

Middlemen play a very important part in the economy because they match employers with employees. The success of recruitment channels depends on the speed at which potential contracts results in a match and on the total number of job seekers and vacancies that use these channels. Speed is seen as a measure of the effectiveness of a search channel. Therefore using a recruitment channel decreases the search intensity of those in the market and improves welfare if search is very costly and inefficient but also decreases welfare when search costs are low and efficient (Yavas: 1994). Including a recruitment channel narrows the amount of buyers and sellers who search in the market. Sellers with high valuation and buyers with low valuation drop out of

the market. They now trade through the middleman who reduces their search intensities.

Wittenberg (2002) argues that workers should operate with a reservation wage policy which should not only cover the leisure that you are giving up but also the additional search which could land you a better job. However he also suggests that firms should operate on a reservation productivity policy to ensure that their workers are productive in the work place. Individuals and employers may search and never find each other if using different methods of search. Therefore it is important for individuals to assess which firms use which methods when recruiting individuals.

Section 3: Levels of unemployment in South Africa

Section 2.1 and 2.2 showed that individuals could be deemed as unemployed or non-participants depending on which definition of unemployment is used. The following section is going to look at the unemployment patterns within South Africa to try and understand any relationships between unemployment and certain characteristics that individuals possess. This is due to the fact that unemployment does not occur randomly in society and especially not in the South African society.

According to Nattrass (2000) the unemployment rate in South Africa has been high and has typically been rising throughout the 1990s. This statement holds true for both the broad and the narrow definition of unemployment. However the South African statistics have come under scrutiny from various authors. It was assumed that the South African unemployment statistics were overestimated. The over estimation of the statistics was first challenged by the ILO. However, after substantial work in the area by Klasen and Woolard (1999) who adjusted for problems regarding the definition of unemployment found that there is an insignificant difference in the statistics that have been reported. Therefore this posits that the statistics for South Africa are correct with only slight estimation errors. This is alarming though as South Africa's unemployment statistics are extremely high.

Nattrass (2000) asserts that conventional theory posits that unemployment occurs when wages are set above the market clearing level. Furthermore people who believe this hypothesis suggests that minimum wage legislation should be more flexible with a reduction in barriers to employing individuals. Union movements however do not support this view. They detest any suggestion that the minimum wage should not be implemented. Minimum wage theory is a moot topic and is beyond the scope of this paper. The only reason why it is suggested here is because undergraduate economics stress that when

minimum wages are implemented then there is subsequent reduction in employment[2].

Another reason for the high unemployment in South Africa could be due to the rapid growth of the labour force coupled with the slow growth that the country has been experiencing for many years now. The labour force has been increasing because of the high fertility rates in African countries. However this increase in the labour force will inevitably lead to unemployment if the country does not experience enough growth to spur employment. There is nothing that can be done now about this large labour force because they have all already been born. An individual is only eligible to be included in the labour force if he/she is older than 15 (as stated in the SSA definition of unemployment – above) and therefore policy to reduce the labour force will only come into effect in approximately 15 years time. There are many factors that can help the economy flourish. However, if one analyses the reasons for poor growth in South Africa and other African nations it can be concluded that to achieve growth will not happen instantaneously and that there are many key variables that play a role. The Millennium plan for African Recovery program (MAP) has been on the table for a while now with little positive results. However this issue's only relevance to this paper is that growth impacts the level of unemployment in South Africa and the point of discussing MAP is to disclose the fact that growth is needed to increase employment dramatically in South Africa (and other African Nations)[3] but is not predicted in the near future. However South Africa should strive towards increasing growth within the economy.

Van der Berg (1992) argues that a key reason for the high unemployment in South Africa can be attributed to the increasing growth in capital intensity. This has led to employers favour capital-intensive productivity because of low costs

[2] This is not necessarily true as evidence by Card and Krueger suggest that implementing minimum wage does not lead to a reduction in wages.

[3] The reason why African countries are mentioned here is because they too are experiencing high unemployment, high fertility, and low growth. Due to the conditions in these countries many individuals often migrate to other countries including South Africa in order to find a job or just better opportunities. Therefore a possible explanation for the high unemployment in South Africa is due to foreigners also being employed coupled with the unacceptable increase in job creation.

and therefore steered away from labour-intensive productivity because of the increasing costs attached to it.

The entire paper thus far has stressed the enormity of unemployment in South Africa and the above analysis has focused on a few key reasons for this high unemployment rate in South Africa. A striking feature of unemployment in South Africa that has to be addressed is the patterns that exist within certain groups. Examples of this can be seen where unemployment is higher for Africans than for any other racial group, unemployment is higher for women than men, unemployment is higher in rural than in urban areas, youth unemployment problem, unemployment given educational attainment, and wages. The following analysis is going to focus on the paper by Bhorat and Leibbrandt (1996) as their paper contains many vital statistics that are relevant to the issues discussed below and the Statistical Release of the March 2003 Labour Force Surveys (LFS).

When analysing the data from Bhorat and Leibbrandt (1996) it can be seen that African unemployment rate is extremely high (41.1%) which is in line with that of Bhorat, 2002; Kingdon and Knight, 2000; Nattrass, 1999; Van der Berg, 1992; Wilson, 1999; and Wittenberg, 1999. According the LFS this figure is 42.2% in 2003 (SSA, 2003)[4]. This fact highlights the severe conditions under the Apartheid regime because Africans constitute approximately 70% of the potential labour force but has an unemployment rate of 41% (Wilson, 1999: 8) but this figure is 49.1% in 2003. However, when using the narrow definition then this statistic drops to 25.8% in 1995 and to 32.1% in 2003. This suggests that many African's are discouraged from seeking employment. When analysing the Coloured and the Asian groups it can be seen using the broad definition of unemployment that both groups do not have a rate as high as African unemployment with statistics of 23.3% (28.1% in 2003) and 17.1% (25.5% in 2003) respectively. When analysing the narrow definition for these groups the statistics do not fall as drastically as can be seen with the African population

[4] All 2003 figures stated in this section are taken from the SSA Statistical Release of the March 2003 LFS.

coming in at 19.2% (22.1% in 2003) for Coloureds and 17.1% (22.5% in 2003) for Asians. Therefore the discouraged worker effect is not particularly dominant when assessing the Coloured and Asian unemployment rates. Whites are the least likely to be unemployed in South Africa. A reason for this can stem back to the discrimination practices of the Apartheid era. However there is a significant difference in unemployment rates between the races with whites only experiencing a level of unemployment of 6.4% (9.5% in 2003) using the broad definition and 4.1% (6.9% in 2003) using the narrow definition (Bhorat and Leibbrandt, 1996: 145).

It is also interesting to analyse the period in which individuals seek employment. Bhorat and Leibbrandt (1996) have analysed each race group and have used a periods in which they search for employment namely, less than six months, between six and twelve months, and more than twelve months. This is done in order to capture the amount of structurally unemployed individuals as opposed to the amount of cyclically unemployed. Those that are structurally unemployed tend to be unemployed for a longer period than those that are cyclically unemployed. Their results are interesting as they show that across all racial groups in South Africa the period of job search for all workers is extending for more than twelve months. The majority of white workers however fall into the less than six-month category. This indicates that although white workers are rarely unemployed if they are then for most of them it is not for an extended period as they are able to find work relatively easy (Bhorat and Leibbrandt, 1996: 146). Therefore due to the fact that 67.7% of all workers have been searching for a job for more than twelve months leads to the conclusion that many of these workers will be discouraged from further job search initiatives. Due to the extent of their job search gives them a reason to deter further job search and therefore could lead to these individuals not looking for a job in the month preceding the interview. If this is the case then these individuals will not be classified as unemployed using the narrow definition of unemployment and could therefore lead to unrealistic statistics. Therefore the discrepancy between the broad and the narrow definition of unemployment can be attributed to the

fact that most of the unemployed labour force has been searching for jobs for an extended period of time.

Bhorat and Leibbrandt also analyse the effects of female unemployment and their finding is consistent with other authors who posits that the unemployment rate for females is higher than the unemployment rate for males. The alarming fact is that the total unemployment rate for males is 14.4 percentage points lower than the unemployment rate for females, which are 26.2% (35.9%in 2003) and 40.6% (48.4% in 2003) respectively. However when analysing the female unemployment rates for the various race groups the statistics are even more alarming. Bhorat and Leibbrandt find that African females have a 50% (55.5% in 2003) unemployment rate which is more than 20% higher than that for Coloureds (27.8% in 1995 and 31.6% in 2003) and Asians (24.2% in 1995 and 32.9% in 2003). When the unemployment rate for African females is contrasted with that of the white females the discrepancy is enormous with unemployment for white females as a mere 9.2% and 11.1% in 2003. The unemployment for the males are not as alarming as the statistics for the females. Unemployment of African males is 33.6% (42.5% in 2003) with unemployment amongst Coloured only 13.9% (18% lower in 2003) lower. A reason why there is this discrepancy among females is that there is increase participation of White and Asian females in the workforce. Even though there is increased participation there is still an enormous amount of unemployment among the other race groups (Bhorat and Leibbrandt, 1996: 146).

Bhorat and Leibbrandt also look at the unemployment rate between rural and urban areas, level of education and previous occupation. Location has been separated into three categories namely, rural, urban and metropolitan. Rural unemployment is the highest (40%) of the three followed by urban and then metropolitan with 25.5% and 21.5% respectively. For all three categories Africans have the highest unemployment rates. This can feed into the argument of going home and sending money to families in homeland who are dependent on income from those who have jobs. People also move to places where there is security instead of moving to places where there are jobs and income. This is

not necessarily a good idea because this then just aggravates unemployment in rural areas as people move there but there are limited jobs available there and there is no jobs creation so unemployed staggers.

South Africa is also cited as having a youth unemployment problem. Bhorat and Leibbrandt (1996) find that a younger individual in South Africa has a higher probability of being unemployed for all the race groups. In their analysis Africans always have the higher unemployment rate. This was discussed earlier. However when looking at various age groups, especially the 16-24 age group, it can be seen that this group accounts for 53% of total unemployment. This can be coupled with the finding by Wittenberg (1999) who asserts that African men only reach their most active labour market years in their early 30s whereas white male reach this when they are in their mid-20s.

There is a clear link between educational attainment and the level of unemployment in South Africa. According to Bhorat and Leibbrandt (1996) the more education an individual possess the greater the probability of finding a job and receiving a higher wage than those without any formal education. Unemployment is the lowest in the group that has tertiary education and for the group as a whole the unemployment statistic is 0.36% (7.4% in 2003). Individuals who have no education account for 10.41% and the highest level of unemployment is for the group who are in the std. 6 –9s category (37.93%) (Bhorat and Leibbrandt, 1996: 149). Interestingly enough this group and even the group that has obtained its matric certificate have a higher unemployment rate than those individuals who do not have any formal education at all. This result can mean one of two things. These individuals who have finished matric should earn higher wages but they are not qualified for positions that earn such high wages and therefore it would be better to hire those who have no education because they are cheaper to maintain. The second reason could be that the economy does not have that many jobs for those who are partially educated. It is no secret that South Africa needs much more skilled labour. This is especially due to that fact that many skilled individuals leave the country, which has encouraged an enormous brain drain on the economy. Therefore

what might be needed are more individuals with tertiary education as opposed to those that only have secondary education. This can also be seen because the unemployment statistic of those with a tertiary education is only 0.36%, which constitutes an insignificant amount to the unemployment statistics in South Africa.

Given that there are unemployment discrepancies between the various levels of educational attainment by individuals it is also important to assess this information using race to understand whether there is still racial segregation and whether certain groups with the same qualification have a higher level of unemployment. Africans again by far have the highest level of unemployment for all educational levels. This is followed by Coloureds and the data between whites and Asians is mixed.

Wage income has contributed to inequality within South Africa. In the neo-classical theory of labour the supply of labour is a function of the real wage. This is because it assumes that the marginal cost of the effort exerted by an employee is equal to the marginal benefit of the effort by the employee. Wages should be sufficient in order to offset the cost of effort required to work. When extended to education and human capital it simply argues that people should be given sufficient incentive to study and obtain degrees. Therefore schooling is an investment. However there is also an opportunity cost involved with acquiring education in the form of forgone earnings. In order for individuals to forgo earnings they must be compensated accordingly i.e. with higher lifetime earnings. Labourers only enter into contracts with their employers when they are perceived to fulfil the duties that are required by the firm at the prevailing wage. Given the fact that higher educational attainment is preferable in order to increase the probability of finding a job and receiving a higher wage for the given job then how come is unemployment in South Africa so high, especially among the Africans?

Moll (1996) finds that only a small proportion of the budget was spent on African education as opposed to white education. Therefore students did not have all

the luxurious amenities to enable them to study and give them the incentive to further their studies. This led to a large amount of primary school dropouts who entered the labour force as educated workers (as opposed to those who had no formal education at all – uneducated). Due to this increase in supply of educated workers reduced the primary school wage differential. Therefore firms did not have to pay these educated workers more than the uneducated workers because if they were unsatisfied with them then they could just dip into the large pool of educated labourers who were seeking employment. Primary schooling lost its signalling ability for Africans because it stopped being distinguishable from those who were uneducated (Moll, 1996).

Moll finds that primary school returns fell from 8% in 1965 to 4% in 1970 and 3% by 1975 for Africans compared with 12% in 1965 and 7% in 1975 for coloureds and Asians combined (Moll, 1996: 193). A reason for these decreases in returns for the two groups could be because of the political turmoil at the time. It should be noted that historical events like the Soweto uprising occurred in 1975 when a peaceful march turned into a bloody riot. The reason for the march was to protest (by Africans) against being taught in Afrikaans. The irony of the situation is that today economists posit that Afrikaans as a Matric subject is not necessary to acquire a job and receive a good wage.

Africans dominated certain occupations. These are usually certain jobs that require unskilled labour. A reason for the magnetism towards these low paying in jobs is twofold. Firstly it is because they lack the education to pursue a different career path and secondly because they were forced into certain sectors of the economy due to apartheid (where certain jobs were reserved for certain race groups). A reason that this still exists today is because most people do not respond well to change and prefer to stick to what they know. Therefore if parents did not finish their education or have a certain job then children are more likely to follow in their footsteps. This is not to say that it will always be the case but it should be remembered that there is significant influence from family.

Another issue that has to be discussed is that of underemployment. Adjusting for underemployment should be taken into account when analysing the unemployment statistics in any country. This is due to the fact that many people in South Africa are employed for less than the recommended amount of hours but they are still employed and therefore this measure should be reflected into the statistics when measuring for unemployment. Nattrass (2000) cites Moll as arguing that people in Transkei can function most successfully when they are employed temporarily and work on a month to month basis while searching for better jobs. Therefore the limit of five hours that separate employed worker from those that are unemployed does not seem like a realistic measure of unemployment. This is due to the fact that full time job searchers are not more likely to produce a job than part time job search. Therefore if individuals are not working for many hours but they are still employed in a part time job then they should be categorised as underemployed and not unemployed (Nattrass, 2000).

This study has found that there are many South Africans that are unemployed. However it is also important to note how these individuals survive given the fact that they do not have any income and that South Africa has minimal unemployment compensation systems in place. Therefore the unemployed gain support from family members (or other members in the household) who earn income. Therefore it can be said that the employed provide a social safety net for those that are unemployed. The reason why this warrants attention is because unemployment in South Africa is high and because South Africa does not provide a supportive safety net to all the unemployed individuals in the country. According to Bhorat and Leibbrandt (1996) "it is the employed workers which provide the social safety net for the unemployed... Given the absence of a publicly funded welfare net in South Africa, workers provide accommodation, food and other help to the unemployed family members. In addition, employed workers, not the owners of capital, buy from the informal sector in the townships, use the taxis and support spaza shops. The wages of the employed workforce therefore sustain the informal sector and the unemployed." (Bhorat and Leibbrandt, 1996: 144). According to Wilson (1999), informal sector activity

must be underestimated and therefore individuals are not seen as having formal employment but they are able to receive income for their families.

This safety net that is provided by families of the unemployed is not excessive as Bhorat and Leibbrandt (1996) point out that only 71.4% of unemployed have access to at least one income earner. However this is a general level of unemployed individuals attached to income earners. However if one takes a closer look it is evident that approximately 30.2% of unemployed Africans live in households with no regular income earners. This is almost twice as much as that for the unemployed coloured individuals (15.6%). Therefore this indicates that Africans live in dire poverty, which is greater than the poverty experienced by any other racial group in South Africa (Bhorat and Leibbrandt, 1996: 153). Poverty and inequality are also linked. South Africa, next to Brazil, has the highest inequality in the world with a gini coefficient of 0.6. According to Wilson (1999) the gini coefficient shows that wage income is the most important component of inequality among the African population. Therefore given that South Africa has such a high level of unemployment indicates it plays an important role in the unequal distribution within the country (Wilson, 1999: 4). This unequal distribution is mainly between whites and Africans and this is clear given the above analysis that Africans are more disadvantaged than whites (given the Apartheid history) and have a higher unemployment rate too.

Crime has also increased in South Africa. According to Wilson (1999) crime is an inefficient and socially damaging method of redistribution of income and it harms the economy in many ways. One of the ways is that it deters both domestic and foreign investments, which are both essential for economic growth and therefore essential for job creation.

The figures in this section are for 1995 and 2003 and where put next to each other to assess the changes in unemployment in the past few years. It is interesting to note that unemployment has increase in all categories from 1995 to 2003. Therefore this reiterates the statement in the beginning of the paper that unemployment in South Africa is high and continues to rise.

Section 4: Methodology

In order to answer the research questions the Labour Force Survey Data 2003 (LFS) will be used. The dissertation will analyse the use and effectiveness of various job search methods available in South Africa. However due to the racial differences in South Africa the search methods that are used and available will vary among different individuals. These differences highlight the fact that there are more methods available to whites and Indians than their Coloured and African counterparts and thus it is essential to compare the use of each method and its effectiveness by each racial group and then compare the groups to find the most effective method that is used. After analysing the differences in use and effectiveness of the various job search methods the total differences among the racial groups will be decomposed into components that attribute to each method of search. The dissertation will analyse the differences in use of each job search method and how this affects the applicant with regards to job offers, and job acceptances based on each method that is available.

This dissertation will seek to answer the following questions:

- Who in South Africa are unemployed and which factors contribute to their unemployment?

  It is important to assess whether there are defining characteristics of those that are unemployed. These characteristics include gender, race, age, educational attainment, and location. South Africa has a unique history, which segregates different parts of the population, and this gives rise to racial inequality with Africans having higher unemployment rates than whites.

- How long have people been unemployed before they re-enter the labour market? How many people are unable to re-enter the job market (determined by the length of search) and how active are they in their job search?

- What type of skills and/or educational attainment do these individuals possess compared to the type of skills or educational attainment that is required for jobs?

  South Africa has an abundance of unskilled labour and a shortage of skilled labour in a market, which is characterised by low growth in demand for labour compared to a high population growth. The global economy is steering away from labour intensive industries and towards capital-intensive industries, which leave the unskilled in quite a predicament.

- Who are looking for jobs and how do they go about searching for jobs? Which of the job search methods prove to be most effective?

  There are various methods that can be used when looking for a job. However, not all these methods are available to all the unemployed. The relationship between the characteristics of those that are unemployed and the resources available to them provide some understanding as to what methods prove to be popular and which of these methods prove to be successful.

A dictionary file had to be written before the 2003 LFS could be read in STATA. The data was then sorted and analysed using various techniques and commands in STATA. A do file was also written which generated the variables that were used in section 5 and section 6. Once the data was ready then the analysis could take place. Firstly, the unemployment rate in South Africa was calculated using the formula in the LFS Metadata Set. Unemployment rates were then calculated for the different race groups and for gender. When calculating these unemployment rates, the narrow definition of unemployment was used. However, for race and gender the unemployment rate is given using both the narrow and the broad definition of unemployment to highlight the differences in the two rates when the two different definitions are used. Secondly, cross tabulations were performed to identify if there were certain characteristics that stood out more against unemployment and search methods than others. Finally, the probit method of regression was used to analyse the

probability of being unemployed or the probability of using a specific search method given the independent variables race, gender, age, location, and educational attainment. The do file ensured that all variables that were needed for the probit were categorical and that they were correctly stated in order to perform these regressions.

Section 5: Unemployment and Search Statistics:

This section of the paper looks at some unemployment statistics generated in STATA using the LFS 2003 survey data. Firstly this section aims to calculate the unemployment rate in South Africa and then showing this unemployment rate by race and then gender. This section goes on to look at cross tabulations that were also generated in STATA. These cross tabulations look at common variables such as race, gender, location, and educational attainment. These common variables are then tabulated together with other variables namely employment status, reasons for not working, length of unemployment, knowledge of available jobs, length of time searching for employment and search methods that are used when looking for employment. These cross tabulations provide useful information to analyse various statistics such as what percentage of Africans are unemployed compared to what percentage of unemployed individuals is made up of Africans. Given this information some inferences about what characteristics make people more susceptible to being unemployed and which methods of search would they use to combat this unemployment can be made.

Section 5.1: Unemployment statistics:

The official unemployment rate in South Africa – given the information in the 2003 LFS is 34.08%. This figure is 13.78% more than the unemployment rate in 1995[5]. This is a rather large increase in the unemployment rate.

[5] The unemployment figure produced by Bhorat and Leibbrandt for 1995 is 20.3% (Bhorat and Leibbrandt, 1996: 145).

SA Official employment status 2003- Narrow			
	Freq.	Percent	Cum.
Not economically active	49101	51.56	51.56
Employed	30411	31.93	83.49
Unemployed	15719	16.51	100
Total	100800	100	

Table 1a: South African employment status – Narrow Definition

SA Official employment status 2003 – Broad			
	Freq.	Percent	Cum.
Not economically active	38397	40.32	40.32
Employed	30411	31.93	72.25
Unemployed	26423	27.75	100
Total	100800	100	

Table 1b: South African employment status – Broad Definition

Table 1a shows the official employment status in South Africa using the narrow definition. It can be seen from this table that 51.56% of South Africans (between the age of 15-65) are not economically active while the other 48.44% are economically active. Of those that are economically active 31.93% are employed while 16.51% are unemployed. This percentage of unemployment differs from the unemployment rate. This states that 16.51% of all individuals who are eligible to work are unemployed. The unemployment rate (34.08%) is worked out by dividing the unemployed individuals (the 16.51%) by all those that are economically active.

Table 1b shows the official employment status in South Africa using the broad definition. It can be seen that the unemployment figure is more than when using the narrow definition. It can be argued that the broad definition overstates

unemployment because even though people may be unemployed they may not be willing to work or actively seeking employment. On the other hand it could be argued that using the broad definition is more accurate for developing countries because many people may not be actively seeking employment due to the discouraged worker effect or the high costs involved with searching for employment. However it is never certain that individuals who are unemployed and say that they want to work will actually take the job if the opportunity arises. When looking at the unemployment rate (46.11%) it can be seen that the broad definition states that unemployment is 11.24% more than the narrow definition. Even though the broad definition is more realistic for a developing country[6] the rest of the paper will use the narrow definition because then the results can be compared to other countries and because the narrow definition is the official unemployment rate in South Africa since 1998 (even though both definitions are stated).

The official unemployment rate can also be worked out for the different race groups using the same formula. It can be seen from table 2 that whites have the lowest unemployment rate, which is 34.29% less than Africans who have the highest unemployment rate. There is not a big different between coloured and Indians with their rates being quite similar. The second column shows the unemployment rate using the broad definition. The most striking feature that can be seen is that the unemployment rate for Indians does not vary significantly between the two definitions of unemployment. Therefore there are not many Indians/Asians who are unemployed and not actively searching for employment.

[6] A Probit using the broad definition and a cross tabulation of the employment status and race is attached in Appendix B. However the probit shows very similar results to the probit using the narrow definition i.e. Africans are more likely to be unemployed than the other three race groups, females are more likely to be unemployed than males etc. and therefore no further analysis using the broad definition is compiled.

	Official Unemployment Rate		
Race	Narrow Definition	Broad Definition	Difference between broad and Narrow / Non Participants
African	39.59%	53.16%	13.57%
Coloured	25.71%	33.21%	7.5%
Indian	24.53%	27.36%	2.83%
White	7.24%	10.37%	3.13%

Table 2: Official unemployment rate by race

When looking at unemployment rates by gender it can be seen that females have a higher unemployment rate. Table 3 shows that 50.76% of South African women (who are between 15-65) are broadly unemployed. This figure drops to 36.54% using the narrow definition. This shows that not all women who are unemployed are actively searching for work.

Gender	**Official Unemployment Rate**		
	Broad Definition	Narrow Definition	Difference between broad and Narrow
Male	40.07%	30.44%	9.63%
Female	50.76%	36.54%	14.22%

Table 3: Official unemployment rate by gender

From this first section it can be concluded that Africans have the highest unemployment rate and women have more than a 10% higher unemployment rate than men. These findings here are in line with the literature review in this paper. The percentages that have been calculated are similar to the trends analysed in South Africa although they seem more alarming. This allows us to make a more realistic prediction of what is happening in South Africa.

Section 5.2: The Effects that Race, Gender, Education and Location have on unemployment and search:

The analyses used in this section are cross tabulations using the row column function in STATA. Therefore the tables below will have two variables with their respective percentages to each other so that the columns add up to 100% and so do the rows. The variables that are going to be looked at are race, gender, location, and education. However, not all of these independent variables will always be used and in some cases only race will be looked at. These will be tabulated together with employment status, reasons for not working, length of unemployment, knowledge of available jobs, length of time searching for employment, and search methods that are used when looking for employment.

Table 4 below shows race tabulated together with employment status. It can be seen that the African race group makes up 78.09% of South Africa's population while coloureds account for 11.75%, Indians/Asians 2.39% and whites 7.78%. When looking at the labour market activity it can be seen that more than half of the African population is not economically active. This means that they are of working age but there are reasons why they choose not to work. These reasons include:

1. Scholar or student and prefers not to work
2. Housewife/homemaker and prefers not to work
3. Retired and prefers not to seek formal work
4. Illness, invalid, disabled or unable to work (handicapped)
5. Too young or too old to work
6. Recently retrenched
7. Other reason[7]

[7] This is taken from the LFS March 2003 Metadata set pages 36-37.

race	employment status: not econ active	employed	unemployed	Total
African	41128	19919	13292	74339
	55.32	26.79	17.88	100.00
	83.79	65.53	84.57	78.09
coloured	4408	5031	1747	11186
	39.41	44.98	15.62	100.00
	8.98	16.55	11.12	11.75
Indian/Asian	945	1000	326	2271
	41.61	44.03	14.35	100.00
	1.93	3.29	2.07	2.39
white	2604	4448	352	7404
	35.17	60.08	4.75	100.00
	5.31	14.63	2.24	7.78
Total	49085	30398	15717	95200
	51.56	31.93	16.51	100.00
	100.00	100.00	100.00	100.00

Table 4: cross tabulation – employment status and race

26.79% of all Africans in South Africa are employed while 17.88% of Africans are unemployed. Africans make up for 83.79% of all South Africans who are not economically active. In contrast, 60.08% of whites are employed while only 4.75% of whites are unemployed. The rest of the white population are not economically active. This amount is 35.17% which although is the lowest amongst the race groups is still quite high. The reason for this is that a large portion of the white population is educated and therefore the assumption is that they are still busy with their education and therefore they are not economically active yet. It is interesting to see that even though the African group is the biggest in South Africa they have the smallest percentage that are employed 26.79% but this accounts for 65.53% of all employed individuals. This reaffirms that Africans are the biggest race group in South Africa by far.

Table 5 below shows reasons why people are not working by race group. Having a job and starting at a definite date in the future is really small and insignificant for most groups but is almost 4% for white unemployed individuals. The coloured population have 3% as seasonal workers where there are no seasonal workers for the Indian and white race groups. This is interesting because Coloureds and Africans make up 47.79% and 52.21% of seasonal workers respectively. Even though only 4% of Coloureds in South Africa are seasonal workers means that this is not a common and large form of

employment. The main reason why individuals are not working is because they cannot find any work. This accounts for 80.28% of Africans, 75.33% of coloureds, 62.27% of Indian and 59.09% of whites. The second biggest reason for Africans and Coloureds is lacking skills or qualifications required for the job and for Whites and Indians it is not finding any suitable work (salary, location, working conditions etc.). 12.01% of Africans (and 8.99% of Coloureds) state that the reason for them not being employed is because of not having the relevant skills and qualifications. When looking at not finding anything suitable then it can be seen that the white race group (16.48%) and the Indian group (19.02%) have a higher percentage belonging to this category. The reason for this is because these two groups are fussier about working conditions because they are usually more educated and can have more choice in deciding where they want to work. The African and coloured group are less educated and therefore they usually take a job if they can get it. There are also financial constraints on these race groups because searching is costly. Therefore they would not refuse a job because of unsatisfactory working conditions and travelling etc. It is usually the case that Africans travel further to work than white and Indian.

Reasons why not working	race: African	coloured	Indian/As	white	Total
Has job starting in The future	79	31	5	14	129
	61.24	24.03	3.88	10.85	100.00
	0.59	1.77	1.53	3.98	0.82
Seasonal worker	59	54	0	0	113
	52.21	47.79	0.00	0.00	100.00
	0.44	3.09	0.00	0.00	0.72
Lack of skills/ Qualifications	1597	157	28	21	1803
	88.57	8.71	1.55	1.16	100.00
	12.01	8.99	8.59	5.97	11.47
Cannot find any work	10671	1316	203	208	12398
	86.07	10.61	1.64	1.68	100.00
	80.28	75.33	62.27	59.09	78.88
No suitable work - Something unsatisfactory	466	125	62	58	711
	65.54	17.58	8.72	8.16	100.00
	3.51	7.16	19.02	16.48	4.52
Contract worker	24	3	0	1	28
	85.71	10.71	0.00	3.57	100.00
	0.18	0.17	0.00	0.28	0.18
Recently retrenched	197	27	22	28	274
	71.90	9.85	8.03	10.22	100.00
	1.48	1.55	6.75	7.95	1.74
Other reason	199	34	6	22	261
	76.25	13.03	2.30	8.43	100.00
	1.50	1.95	1.84	6.25	1.66
Total	13292	1747	326	352	15717
	84.57	11.12	2.07	2.24	100.00
	100.00	100.00	100.00	100.00	100.00

Table 5: cross tabulation – reasons why individual are not working and race

The following cross tabulation looks at the length of unemployment and race for the category 1 week to less than 1 month it can be seen that coloureds have the highest percentage out of all the race groups. A relatively large percentage of Coloureds are unemployed for shorter periods of time. This could be because the skills that they have can be transferred to other jobs easily. A possible reason is that not many coloureds are educated and therefore they do not have field specific qualifications and can do a lot of different unskilled jobs (welder or bricklayer etc.). When looking at 1 year to more than 3 year categories then coloureds have the lowest percentage compared to other race groups. This shows that they are willing to accept any job as long as they are not unemployed. It is interesting to note that Africans only have the highest percentage in the more than 3 years category. This indicates that generally Africans are unemployed for long periods of time. They, like Coloureds, are not

well educated and the labour that they perform could be transferred easily from one job to another. However, they generally do not find employment as easily as coloureds. This could be due to the Apartheid regime and also because Africans are less educated than Coloureds. On a whole, this table does not show that the length of unemployment is necessarily race specific. All race groups have a similar trend. The longer individuals are unemployed for, the longer it will take for them to find employment as the discouraged worker effect could set in and they would then not be classified as narrowly unemployed anymore. Some individuals however continue to search for employment even after being unemployed for long periods of time. In this table it can be seen that the total number of individuals is only 5943 compared to the 15719 unemployed as stated in table 1. The reason why there are discrepancies in the total figures is because some individuals – when answering the questionnaire – answered the question by saying the question was not applicable to them or it was unspecified. When looking at table 6 it can be seen that length of unemployment did not apply to some individuals and therefore only 5943 out of 15719 said that this applied to them.

length of unemployment	race				
	African	coloured	Indian/As	white	Total
1 week - less than 1 month	97	87	3	6	193
	50.26	45.08	1.55	3.11	100.00
	2.08	8.94	2.61	3.05	3.25
1 month - less than 2 months	207	73	5	3	288
	71.88	25.35	1.74	1.04	100.00
	4.44	7.50	4.35	1.52	4.85
2 months - less than 3 months	195	84	2	9	290
	67.24	28.97	0.69	3.10	100.00
	4.19	8.63	1.74	4.57	4.88
3 months to less than 4 months	128	47	5	13	193
	66.32	24.35	2.59	6.74	100.00
	2.75	4.83	4.35	6.60	3.25
4 months - less than 5 months	106	45	3	7	161
	65.84	27.95	1.86	4.35	100.00
	2.28	4.62	2.61	3.55	2.71
5 months - less than 1 year	485	129	21	37	672
	72.17	19.20	3.13	5.51	100.00
	10.41	13.26	18.26	18.78	11.31
1 year - less than 2 years	748	146	26	42	962
	77.75	15.18	2.70	4.37	100.00
	16.06	15.01	22.61	21.32	16.19
2 years - less than 3 years	646	108	16	23	793
	81.46	13.62	2.02	2.90	100.00
	13.87	11.10	13.91	11.68	13.34
3 years or more	2028	253	34	56	2371
	85.53	10.67	1.43	2.36	100.00
	43.54	26.00	29.57	28.43	39.90
Don't know	18	1	0	1	20
	90.00	5.00	0.00	5.00	100.00
	0.39	0.10	0.00	0.51	0.34
Total	4658	973	115	197	5943
	78.38	16.37	1.94	3.31	100.00
	100.00	100.00	100.00	100.00	100.00

Table 6: cross tabulation – length of unemployment and race

Table 7 looks at the length of unemployment compared to gender. It can be seen for all the categories, except from 1 year or more that females have a lower percentage than men for the length of unemployment. The reason for this is because there were not many women in the labour force and therefore with the recent demand for women it enabled them to have a shortened length of unemployment. Before the labour market was not very open to women. Women generally had much longer unemployment periods than men. However it is only now recently that women are penetrating the labour market – feminisation of labour. This is the reason why there are so many women who have been

unemployed for such a long time period and that is why their percentage exceeds that of males in those categories (Casale and Posel 2002).

length of unemployment	Gender Male	Female	Total
1 week - less than 1 month	90	103	193
	46.63	53.37	100.00
	3.53	3.03	3.25
1 month - less than 2 months	153	135	288
	53.13	46.88	100.00
	6.00	3.98	4.84
2 months - less than 3 months	139	151	290
	47.93	52.07	100.00
	5.45	4.45	4.88
3 months to less than 4 months	91	102	193
	47.15	52.85	100.00
	3.57	3.00	3.25
4 months - less than 5 months	81	80	161
	50.31	49.69	100.00
	3.18	2.36	2.71
5 months - less than 1 year	294	378	672
	43.75	56.25	100.00
	11.53	11.13	11.30
1 year - less than 2 years	375	587	962
	38.98	61.02	100.00
	14.71	17.29	16.18
2 years - less than 3 years	309	484	793
	38.97	61.03	100.00
	12.12	14.25	13.34
3 years or more	1005	1368	2373
	42.35	57.65	100.00
	39.43	40.28	39.92
Don't know	12	8	20
	60.00	40.00	100.00
	0.47	0.24	0.34
Total	2549	3396	5945
	42.88	57.12	100.00
	100.00	100.00	100.00

Table 7: cross tabulation – length of unemployment and gender

The length of unemployment for urban and non-urban gives interesting results. The trend is quite similar with both these groups having similar percentages. However, when looking at the absolute numbers then it can be seen that non-urban unemployment is about twice that of urban unemployed. Therefore even though it seems that not much can be said about location with the length of unemployment this is untrue. The total number of non-urban is 4078 compared to 1879 urban. Therefore it can be said that there is unemployment among both urban and non-urban individuals. It is assumed that those who live in urban

areas might not find jobs because there is a large influx of people into the urban areas to look for work.

length of unemployment	urban/non-urban: non urban	urban	Total
1 week - less than 1 month	115	78	193
	59.59	40.41	100.00
	2.82	4.15	3.24
1 month - less than 2 months	199	89	288
	69.10	30.90	100.00
	4.88	4.74	4.83
2 months - less than 3 months	211	79	290
	72.76	27.24	100.00
	5.17	4.20	4.87
3 months to less than 4 months	129	65	194
	66.49	33.51	100.00
	3.16	3.46	3.26
4 months - less than 5 months	101	60	161
	62.73	37.27	100.00
	2.48	3.19	2.70
5 months - less than 1 year	467	206	673
	69.39	30.61	100.00
	11.45	10.96	11.30
1 year - less than 2 years	686	278	964
	71.16	28.84	100.00
	16.82	14.80	16.18
2 years - less than 3 years	558	236	794
	70.28	29.72	100.00
	13.68	12.56	13.33
3 years or more	1596	784	2380
	67.06	32.94	100.00
	39.14	41.72	39.95
Don't know	16	4	20
	80.00	20.00	100.00
	0.39	0.21	0.34
Total	4078	1879	5957
	68.46	31.54	100.00
	100.00	100.00	100.00

Table 8: cross tabulation – length of unemployment and location

Table 9 shows that most individuals do not have knowledge of available jobs. It shows that 49 out 15573 people have knowledge of available jobs. Of those that are unemployed in each race categories, whites had the most knowledge of available jobs (1.18%) and Africans had the least (0.27%). This could pose a serious problem because unemployed individuals do not know what is out there for them and thus it will increase their length of unemployment. When broken down into gender it can be seen that men have more knowledge of available jobs than females (0.36% and 0.29% respectively). When looking at location it

can be seen that non-urban individuals have more knowledge of available jobs than urban individuals (0.38% and 0.20% respectively). So a general characteristic that needs to be analysed is the fact that unemployed individuals do not have the knowledge of available jobs and therefore leads to the conclusion that the method that they are using to search for a job is incorrect and will not always lead to employment.

	Knowledge of available jobs		
race	Yes	No	Total
African	36	13163	13199
	0.27	99.73	100.00
	73.47	84.79	84.76
coloured	8	1708	1716
	0.47	99.53	100.00
	16.33	11.00	11.02
Indian/Asian	1	319	320
	0.31	99.69	100.00
	2.04	2.05	2.05
white	4	334	338
	1.18	98.82	100.00
	8.16	2.15	2.17
Total	49	15524	15573
	0.31	99.69	100.00
	100.00	100.00	100.00

Table 9: cross tabulation – knowledge of available jobs and race

When analysing the effect of different schooling levels then the results are as expected. Those with tertiary education have more knowledge than those with some other form of education. Those with high school education also have more knowledge than the other form of education. Those with primary school have less knowledge of available jobs than those with other education levels. This is, as one would expect. Tertiary education opens the door to more knowledge and more routes of finding employment. Whereas those who only have primary school will usually rely on friends or relatives and they would

enquire at work places and not check all available means of enquiring about jobs.

time seeking for employment	race				
	African	coloured	Indian/As	white	Total
Less than a month	613	233	13	23	882
	69.50	26.42	1.47	2.61	100.00
	4.67	13.69	4.13	6.82	5.70
1 month to less than 2 months	557	121	15	24	717
	77.68	16.88	2.09	3.35	100.00
	4.24	7.11	4.76	7.12	4.63
2 months to less than 3 months	580	124	24	30	758
	76.52	16.36	3.17	3.96	100.00
	4.42	7.29	7.62	8.90	4.90
3 months to less than 4 months	458	70	19	22	569
	80.49	12.30	3.34	3.87	100.00
	3.49	4.11	6.03	6.53	3.68
4 months to less than 6 months	538	91	23	11	663
	81.15	13.73	3.47	1.66	100.00
	4.10	5.35	7.30	3.26	4.28
6 months to less than 1 year	4747	628	139	160	5674
	83.66	11.07	2.45	2.82	100.00
	36.17	36.90	44.13	47.48	36.66
3 years or more	5533	421	82	67	6103
	90.66	6.90	1.34	1.10	100.00
	42.16	24.74	26.03	19.88	39.43
Don't know	99	14	0	0	113
	87.61	12.39	0.00	0.00	100.00
	0.75	0.82	0.00	0.00	0.73
Total	13125	1702	315	337	15479
	84.79	11.00	2.04	2.18	100.00
	100.00	100.00	100.00	100.00	100.00

Table 10: cross tabulation – time seeking for employment and race

An interesting factor to look at is the time that individuals actively spend looking for employment. The African race group has the lowest percentage in all categories until the 3 years or more category and then the percentage is almost

20% more than the next biggest group. Therefore it can be concluded that Africans have a longer search period than the other race groups, which is why the length of unemployment is so long. A possible reason for this is because many Africans provide unskilled labour and South Africa has an abundance of unskilled labourers. This inevitably prolongs their period of search. In the category 6 months to 1 year, whites have the largest percentage but in the category more than 3 years then they have the smallest percentage. Whites take a shorter time to seek for employment than Africans and the other race groups. It is interesting to see that coloureds seek for a shorter time period than Indians. This corresponds to their length of unemployment, which is not as long as some of the other groups (this was discussed earlier)

Looking at time seeking for employment and gender it was found that the results were similar for each category for the two sexes. Therefore it was not included because no substantial interpretation could be made. There were only slight differences between urban and non-urban categories compared to time seeking for employment and therefore it too was left out of this analysis.

Search methods appear to be a key factor in determining whether individuals find employment and the length of their unemployment. The different methods that are available will be analysed according to race to show which method is most common among which race group. Each race group will be analysed in detail to try to come to some conclusion about if these methods make them susceptible to finding employment or not.

Looking at the African race group, it can be seen that the most popular method that is used is enquiring at workplaces (63.52%). The second biggest is placing or answering adverts (13.84%). All the other methods that are used account for less than 10% of unemployed African individuals. The most popular method used by Coloureds is also enquiring at workplaces. This percentage (77.85%) is higher than that of African workers. All the other statistics are under 10% while the second most popular method use by coloureds is placed or answering adverts. For both the White and the Indian race group the most popular method

that is used is placed or answered adverts. The second most popular is enquiring at workplaces. However, this percentage is much lower than that of Africans and Coloureds. Whites also use agencies (10.68%) while Indians rely on relatives and friends more than any other race group.

	race				
search methods	African	coloured	Indian/As	white	Total
agency	642	75	16	36	769
	83.49	9.75	2.08	4.68	100.00
	4.89	4.38	5.08	10.68	4.96
work places	8341	1332	104	137	9914
	84.13	13.44	1.05	1.38	100.00
	63.52	77.85	33.02	40.65	63.98
placed/answered ads	1817	158	150	143	2268
	80.11	6.97	6.61	6.31	100.00
	13.84	9.23	47.62	42.43	14.64
relatives or friends	1163	82	30	11	1286
	90.44	6.38	2.33	0.86	100.00
	8.86	4.79	9.52	3.26	8.30
start own business	45	13	2	0	60
	75.00	21.67	3.33	0.00	100.00
	0.34	0.76	0.63	0.00	0.39
waited at street-side	1038	42	7	2	1089
	95.32	3.86	0.64	0.18	100.00
	7.90	2.45	2.22	0.59	7.03
other	79	9	5	8	101
	78.22	8.91	4.95	7.92	100.00
	0.60	0.53	1.59	2.37	0.65
don't know	7	0	1	0	8
	87.50	0.00	12.50	0.00	100.00
	0.05	0.00	0.32	0.00	0.05
Total	13132	1711	315	337	15495
	84.75	11.04	2.03	2.17	100.00
	100.00	100.00	100.00	100.00	100.00

Table 11: cross tabulation – search method and race

The most interesting things to note here is that most individuals in South Africa enquire at workplaces for jobs. This is the method that is most commonly used by those individuals who do not have a lot of education. Another striking observation is that whites and Indians use the method "placed or answered adverts". They use this method more than Africans and Coloureds. This is in line with the literature review in this paper that states that educated individuals use this method more than those individuals who are not as educated. 7.9% of unemployed Africans wait at the street side looking for employment while only 0.59% of whites use this method. This method is not very common among Indian and Coloured either with only 2.22% and 2.45% using this method respectively.

Both Urban and non-urban rely most on enquiring at workplaces, while urban individuals use this more than non-urban individuals, 69.23% and 61.15% respectively. The second most common method used by urban individuals is relying on relatives and friends (9.87%) and then they use placed or answered advert (8.10%). On the other hand, non-urban individuals use placed and answered adverts as the second most common method in finding a job. This accounts for 18.17% of non-urban individuals while relying on friends and relatives accounts for only 7.45%. It would be expected that non-urban individuals would rely on relatives and friends more than urban individuals but the figures are different to each other. The reason why urban individuals may rely more on friends and relatives is because there are vast amount of jobs and opportunities in urban areas and in order to penetrate this market it would be easier to use friends and relatives. Another interesting statistic is that non-urban individuals use employment agencies and trade unions more than urban individuals. The reason for this is other methods of search may be too costly. Urban individuals also wait on street sides more than non-urban individuals. This is because in urban areas people are more likely to hire people off the street to do odd jobs (gardening, cleaning etc.).

search methods	urban/non-urban: non urban	urban	Total
agency	588	181	769
	76.46	23.54	100.00
	5.84	3.34	4.96
work places	6162	3752	9914
	62.15	37.85	100.00
	61.15	69.23	63.97
placed/answered ads	1831	439	2270
	80.66	19.34	100.00
	18.17	8.10	14.65
relatives or friends	751	535	1286
	58.40	41.60	100.00
	7.45	9.87	8.30
start own business	32	28	60
	53.33	46.67	100.00
	0.32	0.52	0.39
waited at street-side	636	453	1089
	58.40	41.60	100.00
	6.31	8.36	7.03
other	74	27	101
	73.27	26.73	100.00
	0.73	0.50	0.65
don't know	3	5	8
	37.50	62.50	100.00
	0.03	0.09	0.05
Total	10077	5420	15497
	65.03	34.97	100.00
	100.00	100.00	100.00

Table 12: cross tabulation – search method and location

Table 13 shows the cross tabulation of search methods and education. The table includes all 3 educational levels so that the analysis can be made across these different educational levels. Each level is compared to having any other form of education. Therefore next to primary the other education includes high school and tertiary whereas other education relating to high school includes primary and tertiary. Other with regards to tertiary includes high school and primary school. In this analysis these different educational levels will be compared to each other knowing that this figure has been derived with using the other educational levels as well.

The most common search method that is used by those individuals who have primary school education is enquiring at workplaces. This accounts for 72.13%. The second most common method used is waiting at the street side (10.64%) followed closely by using friends and relatives (9.85%). It also shows that very few individuals with primary schooling use place and answered adverts as method to find a job (2.14%). However when looking at those with high school education and tertiary education then this figure rises to 6.25% and 51.47% respectively. This is in line with the literature review in this paper that states that educated individuals use this method more than those with education. Among high school individuals the most common search method that is used is enquiring at workplaces (69.45%). The second most commonly used method is using friends and relatives (10.74%) and then waiting at the street side accounts for 7.55%. The trend among those with tertiary education is somewhat different. The most commonly used method of search is placed and answered adverts, which are followed by enquiring at workplaces, which are 51.47% and 35.69% respectively. They use recruitment agencies and trade unions more than those with less education and this is only 7.4%. Only 3.37% of these individuals rely on friends and relatives to find employment. The other two categories also used waiting at the street side while only 1.2% of individuals with tertiary education use this method.

search methods	primary school - grade r to std 5			high school - std 6 to std 10			tertiary education - Degree/Diploma/NTC		
	other education	primary	Total	other education	high school	Total	other education	tertiary	Total
agency	662	91	753	630	136	766	685	68	753
	87.92	12.08	100	82.25	17.75	100	90.97	9.03	100
	5.23	4.23	5.08	5.03	4.67	4.96	4.93	7.4	5.08
work places	7894	1553	9447	7858	2023	9881	9119	328	9447
	83.56	16.44	100	79.53	20.47	100	96.53	3.47	100
	62.31	72.13	63.74	62.7	69.45	63.97	65.59	35.69	63.74
placed/answered adverts	2213	46	2259	2083	182	2265	1786	473	2259
	97.96	2.04	100	91.96	8.04	100	79.06	20.94	100
	17.47	2.14	15.24	16.62	6.25	14.66	12.85	51.47	15.24
relatives or friends	1011	212	1223	967	313	1280	1192	31	1223
	82.67	17.33	100	75.55	24.45	100	97.47	2.53	100
	7.98	9.85	8.25	7.72	10.74	8.29	8.57	3.37	8.25
start own business	46	8	54	46	14	60	51	3	54
	85.19	14.81	100	76.67	23.33	100	94.44	5.56	100
	0.36	0.37	0.36	0.37	0.48	0.39	0.37	0.33	0.36
waited at street-side	755	229	984	867	220	1087	973	11	984
	76.73	23.27	100	79.76	20.24	100	98.88	1.12	100
	5.96	10.64	6.64	6.92	7.55	7.04	7.00	1.2	6.64
other	82	13	95	77	23	100	90	5	95
	86.32	13.68	100	77.00	23	100	94.74	5.26	100
	0.65	0.6	0.64	0.61	0.79	0.65	0.65	0.54	0.64
don't know	6	1	7	5	2	7	7	0	7
	85.71	14.29	100	71.43	28.57	100	100	0	100
	0.05	0.05	0.05	0.04	0.07	0.05	0.05	0	0.05
Total	12669	2153	14822	12533	2913	15446	13903	919	14822
	85.47	14.53	100	81.14	18.86	100	93.8	6.2	100
	100	100	100	100	100	100	100	100	100

Table 13: cross tabulation – search method and education

Section 6: Modelling Unemployment and Search Methods:

In this section of the paper regressions, probits, are run to determine to what extent variables – race, gender, educational attainment, age, and location – influence the likelihood of an individual finding employment and whether these variables determine which search method will be used. The first part of this section will look at unemployment and the second part of this section will look at the various search methods available and used in South Africa,

Section 6.1: Description of Probit Regression:

When dependent variables are qualitative in nature estimation problems occur when representing this data by means of dummy variables. Probits are used to measure probabilities when both the dependent and independent variables are categorical variables. The dependent variable has two categories 0 being employed and 1 being unemployed. The independent variables also have categories e.g. race has four categories (African, Coloured, Indian, and White).

Probit models are generalised linear models with a probit link. A probit is the inverse of the normal cumulative distribution function. Probits may be expressed in probabilities (Liao, 1994). This dissertation looks at the marginal effects rather than the probit coefficients. In the Probit regression model, the predicted values for the dependent variable will never be less than (or equal to) 0, or greater than (or equal to) 1, regardless of the values of the independent variables; it is, therefore, commonly used to analyse binary dependent or response variables (http://www.ru.ac.za/academic/departments/statistics/textbook/glosp.html#Probit Regression).

For the modelling in this paper, the dprobit command in STATA was used. The dprobit command estimates a probit model, but reports the change in the

probability for an infinitesimal change in each independent variable instead of the coefficient for each independent variable. This is called the marginal effect (partial derivative) and shows the ratio of a change in y to the change in x, when the change in x is infinitesimally small (Long, 1996). The marginal effect is the inverse of the standard normal cumulative distribution function. Therefore when looking at race it will give the percentage of the probability of one race being unemployed more/less than another race group. The marginal effect in the probits will be recognised as dF/dx in this dissertation.

The probit describes the probability of being unemployed as apposed to being employed controlling for certain variables. These variables are also categorical having one or more category[8]. An example of this is race. Race has 4 categories. 0 is African, 1 is Coloured, 2 is Indian, and 3 is White. When using a probit one category is left out and the other categories are compared to this base category. As Africans is 0 it will be omitted from the probit and the other three race groups will be given a probability of being unemployed compared to Africans being unemployed. Therefore even though Africans are omitted from the probit does not mean they are left out completely. It just means that it is the base category that the other variables are compared to.

Section 6.2: The Effects that Race, Gender, Location, Age and Education have on Unemployment:

Before analyzing which variables impact on search method it is important to see which variables make an impact on unemployment. The regression shows the probability of being unemployed for each variable and controls for the other independent variables. It is important to remember that the narrow definition of unemployment is being used and therefore the number of observations will be

[8] All the variables used in this section are categorical variables. They all have two or more categories. Explanations of these variables are included in Appendix C.

significantly less than if the broad definition was used. In table 14, unemployment is regressed against race, gender, location, education, and different age variables to find the effect of these variables on unemployment.

```
i.race            _Irace_0-3          (naturally coded; _Irace_0 omitted)
i.gend            _Igend_0-1          (naturally coded; _Igend_0 omitted)
i.locatn          _Ilocatn_0-1        (naturally coded; _Ilocatn_0 omitted)
i.agevar          _Iagevar_0-3        (naturally coded; _Iagevar_0 omitted)
i.education       _Ieducation_0-3     (naturally coded; _Ieducation_0 omitted)

Iteration 0:   log likelihood = -29434.917
Iteration 1:   log likelihood = -25248.305
Iteration 2:   log likelihood = -25079.713
Iteration 3:   log likelihood = -25076.828
Iteration 4:   log likelihood = -25076.826

Probit estimates                                  Number of obs =  45834
                                                  LR chi2(11)   =8716.18
                                                  Prob > chi2   = 0.0000
Log likelihood = -25076.826                       Pseudo R2     = 0.1481

------------------------------------------------------------------------------
unemploy |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
_Irace_1*|  -.1732035   .0050313   -29.37   0.000    .146725  -.183065 -.163342
_Irace_2*|  -.1653827   .0095622   -13.70   0.000    .028756  -.184124 -.146641
_Irace_3*|  -.2835208   .0045651   -36.86   0.000    .103918  -.292468 -.274573
_Igend_1*|  -.0642246    .004548   -14.03   0.000    .458873  -.073138 -.055311
_Iloca~1*|  -.0776138   .0048214   -15.77   0.000    .359646  -.087064 -.068164
_Iagev~1*|   .3152347   .0066896    45.78   0.000    .420758   .302123  .328346
_Iagev~2*|   .0752066    .007482    10.21   0.000     .29825   .060542  .089871
_Iagev~3*|  -.1054178   .0089202   -10.77   0.000    .101039  -.122901 -.087934
_Ieduc~1*|  -.0521808   .0097626    -5.13   0.000    .060828  -.071315 -.033046
_Ieduc~2*|  -.0282364   .0056234    -4.96   0.000    .234673  -.039258 -.017215
_Ieduc~3*|  -.1817624   .0058915   -25.43   0.000    .129794   -.19331 -.170215
---------+--------------------------------------------------------------------
  obs. P |   .3417768
 pred. P |   .3065495  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| are the test of the underlying coefficient being 0
```

Table 14: Probit using unemployment with race, gender, location, education, and age.

Each of these results will be interpreted below giving the significance of the findings and the significance of the overall probit.

All the variables in this regression are reliable because the probability of the Z-value is 0.000. This means that it is significant and therefore the null hypothesis can be accepted.

In race, Africans are omitted as they are the base category. Controlling for all the other independent variables, it can be seen that all three other race groups are less likely to be unemployed than Africans. Being Coloured reduces the probability of being unemployed by 17.32% compared to Africans. This is also true for the Indian group who are 16.53% less likely to be unemployed than Africans. The white group is the least likely to be unemployed compared to Africans with a probability of 28.35%. This finding reiterates what the literature posits that Africans are more likely to be unemployed than any other race group and that the white group is the least likely to be unemployed. The Indian percentage is similar to the percentage of the Coloured group. The Indian group usually shows a stronger tendency to shift towards the white group while the Coloured group is usually similar to the African group. However when looking at the cross tabulations that were done in the previous section it can be seen that Indians and Coloureds have similar unemployment levels. It should also be noted though that the Indian group is very small and only constitutes approximately 2.39% of South Africa's population.

With the gender variable, the base category that has been omitted is females. Males are 6.4% less likely to be unemployed than females. This is rather small implying that even though males are less likely to be unemployed than females the probability of this happening is not that great. The reason for males being less likely to be unemployed than females is because they dominated the labour market in the past. However, women have been playing a bigger role in the labour market and therefore the probability of being unemployed (compared to men) is not as large as it would have been a few years ago (Casale and Posel, 2002). This finding is similar to what the theory states and it can be concluded that males are less likely to be unemployed than females.

The omitted variable for location is non-urban. The marginal effect for this variable is 7.76%. This states that urban dwellers are less likely to be

unemployed than non-urban dwellers. This is because there are more jobs available in urban areas. Higher participation rates in urban areas could lead to higher unemployment if there are not enough jobs to satisfy the demand. These results suggest that the scarcity of jobs in rural areas outweighs the pressure put on employment in urban areas. In addition those that are unemployed in urban areas often migrate back to non-urban areas where they are able to find assistance. Another reason why non-urban unemployment is higher than urban unemployment is because unemployed individuals move back to rural areas to find support where the prospects of finding a job are slim to none and this just prolongs their unemployment indefinitely because there are only limited job opportunities in rural areas.

The education variable is broken down into four categories namely, having no education, primary schooling, high school, and tertiary education. The variable high school education has been omitted from this probit as the base category variable. The other three variables no education, primary, and tertiary are going to be compared to having high school education.

Individuals with no education are 5.21% less likely to unemployed compared to those with high school education. These individuals might prove to be more valuable to employers because they can be trained from a very young age and they are willing to take almost any job. These individuals usually do manual labour and will be cheaper to hire than those with Matric. Due to the high levels of unemployment and the vast amounts of unskilled labourers in South Africa, employers are always reassured that there will be someone else to take the individuals place. This keeps most employees loyal and because wages are low it is not very attractive to those who have matric.

Individuals with primary school education are 2.82% less likely to be unemployed compared to those individuals with high school education. The reason why

people with primary school education would be less likely to be unemployed compared to those with high school education is because these individuals would have been working for a long time and they would have gained valuable experience. They also do more manual labour and there is always demand for those individuals who do not have a large amount of skills because their labour is usually cheap and secondly if they prefer not to work then there are many individuals who are willing and able to fill their positions.

The tertiary variable is also as expected, as these individuals are 18.2% less likely to be unemployed than those with high school education. The reason for this is because they have more education and they are more likely to find employment.

Therefore it can be concluded that those individuals with high school education are worse off than any other individual in terms of finding employment in South Africa – even compared to those who have no education. The reason why individuals with high school education would be more likely to be unemployed than those with other forms of education is because there are many individuals who have a matric certificate so employers cannot distinguish between these individuals. It should also be remembered that the labour market is filled with older and less educated individuals (primary school individuals) and therefore prohibiting entry of young educated individuals. The reason why employers will not replace the older less educated individuals with younger, more educated individuals is because they have invested in those individuals over the years and they have gained valuable experience and are therefore an in disposable asset to the employer even though there are younger, more educated individuals seeking employment.

The age variable is also broken down into four different variables. The categories are Youth (15 – 30), Middle (31 – 40), Mid (41 – 50) and Old (51 – 65). Working

age in South Africa is 15 –65 and therefore all other ages have been omitted from this regression. For this regression, the age group mid is the base group and therefore omitted from the regression.

It is assumed that the younger the individual the more likely it is that he/she is unemployed. The reason for this assumption is that older individuals have been working for firms for a long time and therefore they have experience in their field and the firm spent a lot of money in training this individual. It would be more costly to screen younger individuals for the job and still retrench the older employees. It is found that youth are 32% more likely to be unemployed than those in the 41 –50 age category. This is inline with the assumption that youth unemployment in South Africa is high. The individuals between the ages of 31 – 40 are 7.52% more likely to be unemployed than those that are 41 –51. For the "old" variable the marginal effect is negative implying that they are 10.54% less likely to be unemployed than those in the base category. This indicates that the older individuals 51 – 65 are less likely to be unemployed than any other age group – even the base group. The reason for this is because people are reaching retirement age and usually have already settled into a particular job by the time they have reached 50. Therefore younger individuals are more likely to be unemployed than older individuals.

The regression is also significant overall with a LR chi2 value of 8716.18 and a probability of 0.000.

To pinpoint a stereotypical individual that is more likely to be unemployed than anyone else given the independent variables (race, gender, location, educational attainment, and age) would be: an African female living in a non-urban area who is between 15 –30 and has some high school education.

Section 6.3: Analysing Search Methods commonly used in South Africa:

The 5 different search methods that will be analysed in this section include:

1. using a recruitment agency or trade union to find employment
2. enquiring at workplaces to find employment
3. placed or answered adverts
4. seeking assistance from relatives or friends
5. waited at the street side

These methods have been sited in the March 2003 LFS. The other method that was also used is "start own business" however, when analyzing this it was found that not many individuals pursued this method in order to find employment. The results would be insignificantly small and therefore it was eliminated from this section. The tables for this section (15 – 19) have been attached in Appendix A.

In table 15, the search method agency – using a recruitment agency or trade union to find employment – is regressed against race, gender, location, education, age variables to find the effect of these variables on search method variable – agency – that is being analysed.

Overall, this regression is significant[9] with an LR chi2 of 94.02 and a probability of 0.0000. However the LR chi2 is rather small and when looking at the individual variables it can be seen that only 2 of them are significant namely the white race group and location.

The white group is 3.2% more likely to use recruitment agencies than the African race group. Even though this contrast to the findings of the literature review in

[9] There is a discrepancy between the number of observations in the following (search) tables and table 1. A possible reason why the number of observations in the search tables exceeds the number of observations for the unemployed, is because it includes on the job search. Therefore the number of those searching is more than the number of unemployed.

this paper (which stated that unemployed and uneducated individuals used this method of search) it is correct in assuming that the white group uses this method more than the African group. The reason for this is that in the following regressions it is found that Africans use "enquire at workplaces" as their medium of job search. Therefore it is likely that whites use this method more than Africans although only by 3.2%. Urban individuals are 2.5% less likely to use this form of search method than non-urban individuals. The reason why non-urban individuals make use of this method more than urban individuals is because search is costly and it would be easier to register with a recruitment agency. Using this method, individuals only have to incur costs in traveling to interviews and it reduces the cost of going to workplaces to enquire about vacancies.

The following variables do not have a significant Z-statistic but it is interesting to look at these variables as well.

The Coloured and Indian are less likely to use recruitment agencies or trade unions when compared to Africans. Males are more likely to use this method of search compared to females. Those with no education are more likely to use this method of search than those with high school education. Those with Primary school and tertiary education are less likely to use this form of search method than those with high school. The literature posits that those with less education use this method of search. When looking at the age variables it shows that all the age variables are less likely to use this method of search than those who are between 41 – 50.

However, even though the results in this regression yield significant results, the variables themselves are insignificant. Some of these results are contrary with the literature and some are similar. The reason why this discrepancy exists is because this method of search is not common in South Africa. When looking at the cross tabulations it can be seen that only 4.96% of those unemployed

individuals use recruitment agencies or trade unions in order to find employment. This figure is even less than that for those who wait at the street side for employment.

In table 16, the search method – enquiring at workplaces to find employment – is regressed against race, gender, location, education, and age variables to find the effect of these variables on the search method variable – enquiring at workplaces – that is being analysed.

Overall, this regression is significant with an LR chi2 of 831.99 and a probability of 0.0000. When looking at the individual variables it can be seen that only 5 of them are not significant namely the gender category, the no education category, and all three age categories.

Looking at the individual variables all three race variables are significant. The Coloured group is 14.64% more likely to use this method of search than their African counterparts. This can be seen when looking at the cross tabulations of the previous section. Enquiring at workplaces is the most popular method of search by Coloureds in South Africa. The Indian race group is least likely to use this method of search (26.09%) compared to the African group. The method of search preferred by Indians is "placed or answered adverts". Similarly the white group is also less likely to use this method than the African group (15.32%) as they too, like the Indian group, prefer "placed or answered adverts". Therefore it can be affirmed that Coloureds and Africans use this method of search more than the other two groups. It should also be noted that Africans and Coloureds are not as educated as whites and Indians and therefore one would then expect that the education variables will show that those with less education use this method more than those who are well educated.

The location variable shows that those individuals who are living in urban areas are 7.47% more likely to use enquiring at work places as the method of search than those individuals living in non-urban areas. This is in compliance with the literature because individuals who live in non-urban areas will not be able to travel to workplaces to enquire about employment. The reason for this is because travel costs are expensive and therefore it would be preferable for them to use recruitment agencies than this method of search. Those living in urban areas have a better chance of traveling to workplaces to enquire about employment.

Only two education variables are significant namely the primary school variable and the tertiary variable. From this regression it can be seen that the more education that individuals possess the less likely they are to use this form of search method. Those with primary school education are 6.59% more likely to use this method of search than those with high school education. When analyzing the tertiary variable it can be confirmed that the more education an individual has the less likely they are to enquire at work places. Those with tertiary education are 25.43% less likely to use this method than those with high school education.

Therefore to pinpoint a stereotypical individual that is more likely to use this method of search (enquiring at workplaces) than anyone else given the independent variables (race, gender, location, educational attainment, and age) would be: a Coloured male living in an urban area and who has some primary school education. This stereotypical person is just hypothesized given the information that has just been derived from the probit. Given the fact that controlling for all other independent variables, certain characteristics are more likely to appear than others and thus the stereotypical person is born. It should also be remembered that when looking at the cross tabulations, this form of search method proved to be popular (top 3) among all race groups.

In table 17, the search method – placed or answered adverts– is regressed against race, gender, location, education, and age variables to find the effect of these variables on the search method variable – placed or answered adverts – that is being analysed.

Overall, this regression is significant with an LR chi2 of 2043.03 and a probability of 0.0000. When looking at the individual variables it can be seen that only 1 of them is not significant namely the age category - old.

The Coloured group is 4.12% less likely to use this method of search than their African counterparts. The Indian race group is most likely to use placed or answered adverts compared to the African group (23.23%). The white group is 14.70% more likely to use this method than the African group. Therefore it can be affirmed that Indians and Whites use this method of search more than the other two groups. This is what has been discussed in the literature review earlier in this paper. Indians and Whites are more likely to use placed or answered adverts because they are more educated than Coloureds and Africans[10]. This method, according to the literature review above, is predominantly used by educated individuals.

With the youth category and the middle category it can be seen that they are more likely to use this form of search than those that are in the mid category with probabilities of 6.26% and 3.27% respectively. Therefore younger individuals are more likely to search by answering and placing ads than those who are older.

Individuals living in urban areas are 6.97% less likely to use this method of search than those living in non-urban areas. The reason why those living in non-

[10] It has been stated previously in this section that whites and Indians use "placed or answered adverts" while Coloureds and Africans use "enquiring at workplaces" as their form of search method.

urban areas are more likely to use placed or answered adverts as their method of search is because it would be more costly to them to enquire at workplaces the way those living in urban areas do. Therefore they have to place or answer adverts in order to get an interview. This also reduces their search costs because they don't have to travel out to workplaces, which could be costly if living in a non-urban area.

The education variables show that the more education an individual possesses, the more likely they are to use this method of search. Those with no education are 10.86% less likely to use this method of search than those with high school education. The primary variable shows that they are 11.91% less likely to use this method of search than those with high school education. Individuals who do not have a lot of education generally do not tend to use this method of search. When looking at the tertiary variable this hypothesis is confirmed. The tertiary variable shows that they are 27.60% more likely to use placed or answered adverts than those who have high school education. This is what was stated above in the literature review and what was found earlier in this section. Those who have are more educated use this form of search method.

Therefore to pinpoint a stereotypical individual that is more likely to use this method of search (placed or answered advert) than anyone else given the independent variables (race, gender, location, educational attainment, and age) would be: an Indian female living in a non-urban area and who has tertiary education. However it is not common for Indians to live in non-urban areas. The reason why non-urban dwellers are more likely to use this method than urban dwellers is because the Indian and the white population in South Africa are very small. Therefore the urban will not show up just for such a small segment of the population. The most important characteristics of individuals using this method are race (Indian and White) and education (tertiary).

In table 18, the search method – seeking assistance from relatives or friends– is regressed against race, gender, location, education, and age variables to find the effect of these variables on the search method variable – seeking assistance from relatives or friends – that is being analysed.

Overall, this regression is significant with an LR chi2 of 140.56 and a probability of 0.0000. When looking at the individual variables it can be seen that 6 of them are not significant namely the Indian category, no education, primary school category and all three age categories.

The Coloured group is 3.44% less likely to use seeking assistance from relatives or friends than their African counterparts. The Indian race group is 1.59% more likely to use this method of search compared to the African group but the variable is not significant and the null hypothesis is rejected. The white group is also less likely to use this method than the African group. Therefore the African group is more likely to use this method of search than the other two race groups. Africans go so far as to travel to the homelands to seek assistance from family members. Even though the statistic is insignificant, the finding is correct that Indians do use friends and relatives to help with their search.

The gender variable states that males are 1.67% less likely to seek assistance from relatives and friends. A reason for this is because females are generally more willing to ask for help than males are. The location variable shows that urban dwellers are 1.62% more likely to use relatives and friends than non-urban dwellers. The reason for this is the same as was discussed above. Those living in urban areas often go back to the rural areas for assistance. They move to the urban areas in order to find employment but when they are unable to find work then they head off to the homelands where they can find assistance from family or friends until they are back on their feet.

The tertiary variable shows that they are 5% less likely to use this method of search than those individuals who have high school education. Intuitively one assumes that the more education someone possesses, the less likely they are to use this method of search.

Therefore to pinpoint a stereotypical individual that is more likely to use this method of search (seeking assistance from relatives or friends) than anyone else given the independent variables (race, gender, location, educational attainment, and age) would be: an African female living in an urban area and who has some high school education. However, Indians females would also use this method of search but because the Z-statistic was insignificant, this conclusion cannot be proved even though the cross tabulations also confirm that Indians seek assistance from relatives and friends. The interesting attribute is that those using this method have some form of high school education. However, it should be remembered that there are many individuals who have high school education and that employers cannot distinguish between them and this is why they need assistance from relatives or friends to find employment.

In table 19, the search method – waited at the street side– is regressed against race, gender, location, education, and age variables to find the effect of these variables on the search method variable – waited at the street side– that is being analysed.

Overall, this regression is significant with an LR chi2 of 359.47 and a probability of 0.0000. When looking at the individual variables it can be seen that the location variable and two age variables are not significant.

Whites are the least likely (5.61%) to use this method of search. Similarly Indians and Coloureds are both also less likely to use this method than Africans with 4.62% and 4.23% respectively. This is as expected with Africans using waited at the street side more than any other race group.

The gender shows that males are 2.23% more likely to use this method of search than females. However, it can be seen that females are also starting to take to the streets to find employment. However, this is still a male dominated form of search.

The location variable is not significant but shows that urban dwellers are more likely to use this method of search than those in non-urban areas. This is as expected. In urban areas it is more likely for people to pick up people off the road to work for them than it is in non-urban areas.

The more education an individual has the less likely they are to use waited at the street side as a method of search. Those with tertiary education are least likely to use this method to find employment than those with any other form of education. The primary school variable shows that they use this method more than those with high school education (2.79%). Similarly those with no education use waited at the street side 9.45% more than those with high school education. Intuitively one would expect that those with no education and primary schooling would use this method the most and those with tertiary education would use this method the least.

Only the old category is significant and shows that older individuals are less likely to use this method of search than the mid category. It cannot be said for certain that one age group uses waited at the street side more than the other. However, it seems like the 41 – 50 group (middle) use this method *slightly* more than the other groups.

Therefore to pinpoint a stereotypical individual that is more likely to use this method of search (waiting at the street side) than anyone else given the independent variables (race, gender, location, educational attainment, and age)

would be: an African male living in an urban area who is between the age of 41 – 50, and who has some primary school education.

This section has looked at what characteristics individuals' posses to make them more likely to be unemployed and that makes them more likely to use a certain form of search method. Most of the findings are inline with the literature review that was discussed earlier in the paper.

It was found that certain people were more likely to be unemployed given certain characteristics that they possess. It was not surprising to find that Africans are more likely to be unemployed than any other race group. This stems from the Apartheid system that plagued South Africa for many years. It was also found that females are more likely to be unemployed than males. This is another unsurprising fact because women have not be dominant in the workforce until fairly recently with the feminisation of labour. An interesting fact that was found is that those individuals with high school education are more likely to be unemployed than those with any other – or no education. So many individuals have matric that it is beginning to lose its signalling power. Therefore employers have to look at other characteristics besides education – if high school – when hiring employees. It has also been found that those individuals living in non-urban areas are more likely to be unemployed. Besides the fact that there are fewer jobs in non-urban areas individuals also migrate back to the homelands for support if they are unable to find work in urban areas. Due to the fact that there are not many prospects in non-urban areas, the unemployment there begins to rise. The age variables that were looked at also showed something that is not very surprising and that is that youth are more likely to be unemployed.

This section also looked at the search methods that are available to find employment and analysed who was more likely to use which methods. It was found that "enquiring at workplaces" is very common among Coloureds and

Africans. However, Whites and Indians are more likely to use "placed and answered adverts". When looking at these different methods, other variables such as education, location, age and gender played an important part in the decision of which method to use to find a job. The "enquiring at workplaces" method is popular among Coloureds and Africans. However, it is also found that they have little education and that they are usually male. Therefore it can be said that even though this method might be popular it is not necessarily successful. Conversely when looking at the "placed or answered adverts" it can be seen that educated Whites and Indians use this method. They, on the other hand generally find this method of job search to be fruitful. Therefore it is assumed that "placed or answered adverts" is a successful method of job search. However how true can this statement really be? It is crucial to understand why education plays such an important role in job search. There is a clear relationship between education and method of job search that is used. In the above analysis it has been stated that certain race groups use certain methods of search given their level of education. However, what needs to be addressed is the fact that some individuals may not have the literacy level or the proper tools at their disposal to use some of the search methods that are available. Therefore to align job seekers and employers might be difficult given this barrier. On the other hand it also explains why unskilled workers use methods like "enquiring at workplaces" because they might not have the literacy competency to use methods like newspapers or the internet. It is therefore important to stress the fact that even though some search methods might have effective results (e.g. like "placed or answered adverts" for Whites and Indians) this search method is also biased toward these two groups and it is also geared towards skilled labour (and those who can read).

The most important fact that has to be considered is that individuals use the method of search that is most likely to be used by their prospective employer. This is because if employers and job seekers do not search for each other at the

same time and using the same search medium then it will not result in a match and will not result in employment. If individuals do not change their method of job search and align it with the methods used by employers then their search might prove to be worthless and prolong search activity. Knowledge of what is available should also help with the way individuals search the labour market. This section has analysed five different search methods and the results are similar to what was discussed in the literature review.

Section 7: Conclusion

Unemployment plagues most societies, some worse than others. This results in lower output than is potentially possible. In South Africa unemployment also intensifies the already serious income inequality. Unemployment affects people in serious ways and is correlated with poverty, inequality, economic growth, social well-being, crime and deterioration of the economic climate within a country. This is illustrated very well by Barker "unemployment has grave consequences for any country. It not only affects an individual's dignity and self respect and erodes his or her standard of living, but also affects society as a whole, because of high crime rates and frustration leading to unrest and lawlessness. Knowledge and skills that are acquired at great cost are lost quickly through disuse." (Barker, 2003: 200).

Unemployment in South Africa has a distinctive face. Many individuals who are unemployed have similar characteristics. The probit regressions suggest that a certain profile will be unemployed. Therefore an African female living in a non-urban area who is between 15 –30 and has some high school education is more likely to be unemployed than anyone else in South Africa.

The search methods that are used in South Africa also play a role in finding employment. Although most African and Coloured individuals use "enquiring at workplaces" as their most common form of search they are the ones that have higher unemployment rates than Indians and Whites. The latter 2 groups are also found to be more educated than the former 2 groups. This also impacts on finding a job. The most important fact to realize is that finding a job is matching an employer with an employee at a specific point in time. Enquiring at workplaces when there are no vacancies will not get anyone a job. Therefore employers have to be matched with employees at a specific point in time. This is similar to bartering. Therefore "placing and answering adverts" would prove to be more

effective in this sense. Indeed, it was discovered with the cross tabulations that many individuals do not know what jobs there are available to them. Therefore if they do not know what is available then it will be difficult to match an employer with an employee. Even though a search method is popular does not necessarily mean that it is successful.

In order to solve the problem of unemployment in South Africa it is important to know what sort of people have jobs, what sort of people are looking for jobs, and what sort of people are not looking for jobs. This will then result in a clear distinction of voluntary and involuntary unemployment, which should then be analysed in the South African context (Wilson, 1999). People should also be made aware of alternative search methods that are available to them. Job creation is also essential and so is economic growth, which is the primary factor that will boost employment. It is also vital that individuals are trained according to the requirements of future jobs e.g. technicians, computer programmers etc.

South Africa has to address the issue of unemployment. An important aspect to alleviate this unemployment and dire poverty that South Africans live in is to escalate the job creation process. However, the issue of unemployment cannot be solved alone but rather needs to be addressed with other key issues, namely investment, growth, inequality and most of all the importance of the government. Many African countries fail to provide adequate infrastructure and service delivery because they are relied upon for job creation. Therefore the task at hand should not be shifted upon the government to create jobs but to rather attract foreign investment, which should lead to adequate scope for job creation in South Africa.

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Section 9: Appendices

Section 9.1: Appendix A – Probits for search methods in Section 6.3

```
i.race            _Irace_0-3          (naturally coded; _Irace_0 omitted)
i.gend            _Igend_0-1          (naturally coded; _Igend_0 omitted)
i.locatn          _Ilocatn_0-1        (naturally coded; _Ilocatn_0 omitted)
i.agevar          _Iagevar_0-3        (naturally coded; _Iagevar_0 omitted)
i.education       _Ieducation_0-3     (naturally coded; _Ieducation_0 omitted)

Iteration 0:   log likelihood = -3149.6649
Iteration 1:   log likelihood = -3103.6342
Iteration 2:   log likelihood = -3102.6567
Iteration 3:   log likelihood = -3102.6544
Iteration 4:   log likelihood = -3102.6544

Probit estimates                                  Number of obs =  16058
                                                  LR chi2(11)   =  94.02
                                                  Prob > chi2   = 0.0000
Log likelihood = -3102.6544                       Pseudo R2     = 0.0149

------------------------------------------------------------------------------
  agency |      dF/dx    Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
_Irace_1*|  -.0098923     .004801    -1.91   0.056   .109852  -.019302 -.000483
_Irace_2*|  -.0116588    .0093508    -1.11   0.266   .021796  -.029986  .006668
_Irace_3*|   .0317094    .0132105     2.88   0.004   .024225   .005817  .057601
_Igend_1*|   .0003237    .0033963     0.10   0.924   .410574  -.006333   .00698
_Iloca~1*|  -.0250616    .0033659    -6.92   0.000    .35023  -.031659 -.018465
_Iagev~1*|  -.0061875    .0058251    -1.08   0.281   .635758  -.017605   .00523
_Iagev~2*|  -.0051251    .0059105    -0.85   0.398   .227924   -.01671  .006459
_Iagev~3*|  -.0215098    .0074317    -2.28   0.023   .035185  -.036076 -.006944
_Ieduc~1*|  -.0231581    .0069387    -2.56   0.010   .041412  -.036758 -.009559
_Ieduc~2*|   .0008758    .0043586     0.20   0.840   .216964  -.007667  .009418
_Ieduc~3*|   .0160064    .0077826     2.27   0.023   .060842   .000753   .03126
---------+--------------------------------------------------------------------
  obs. P |   .0491967
 pred. P |   .0468605  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| are the test of the underlying coefficient being 0
```

Table 15: Probit using search method (agency/ trade union) with race, gender, location, education, and age.

```
i.race            _Irace_0-3          (naturally coded; _Irace_0 omitted)
i.gend            _Igend_0-1          (naturally coded; _Igend_0 omitted)
i.locatn          _Ilocatn_0-1        (naturally coded; _Ilocatn_0 omitted)
i.agevar          _Iagevar_0-3        (naturally coded; _Iagevar_0 omitted)
i.education       _Ieducation_0-3     (naturally coded; _Ieducation_0 omitted)

Iteration 0:   log likelihood = -10515.456
Iteration 1:   log likelihood = -10100.427
Iteration 2:   log likelihood = -10099.459
Iteration 3:   log likelihood = -10099.459

Probit estimates                                  Number of obs =  16058
                                                  LR chi2(11)   = 831.99
                                                  Prob > chi2   = 0.0000
Log likelihood = -10099.459                       Pseudo R2     = 0.0396

------------------------------------------------------------------------------
searchwp |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
_Irace_1*|    .146399   .0110741    11.93   0.000   .109852   .124694  .168104
_Irace_2*|   -.260808    .027232    -9.36   0.000   .021796  -.314182 -.207434
_Irace_3*|  -.1531795   .0266154    -5.87   0.000   .024225  -.205345 -.101014
_Igend_1*|   .0135643   .0078613     1.72   0.085   .410574  -.001844  .028972
_Iloca~1*|   .0747229   .0081983     8.98   0.000    .35023   .058655  .090791
_Iagev~1*|  -.0139687   .0135163    -1.03   0.302   .635758   -.04046  .012523
_Iagev~2*|  -.0091595   .0148601    -0.62   0.537   .227924  -.038285  .019966
_Iagev~3*|   .0423923   .0234553     1.77   0.078   .035185  -.003579  .088364
_Ieduc~1*|   .0208299   .0201399     1.02   0.306   .041412  -.018644  .060303
_Ieduc~2*|   .0659578   .0096589     6.67   0.000   .216964   .047027  .084889
_Ieduc~3*|  -.2542779   .0168018   -14.93   0.000   .060842  -.287209 -.221347
---------+--------------------------------------------------------------------
  obs. P |   .6375016
 pred. P |   .6414512  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| are the test of the underlying coefficient being 0
```

Table 16: Probit using search method (enquiring at workplaces) with race, gender, location, education, and age.

```
i.race             _Irace_0-3          (naturally coded; _Irace_0 omitted)
i.gend             _Igend_0-1          (naturally coded; _Igend_0 omitted)
i.locatn           _Ilocatn_0-1        (naturally coded; _Ilocatn_0 omitted)
i.education        _Ieducation_0-3     (naturally coded; _Ieducation_0 omitted)
i.agevar           _Iagevar_0-3        (naturally coded; _Iagevar_0 omitted)

Iteration 0:   log likelihood = -6774.4916
Iteration 1:   log likelihood = -5807.6626
Iteration 2:   log likelihood = -5755.6715
Iteration 3:   log likelihood = -5753.0194
Iteration 4:   log likelihood = -5752.9763
Iteration 5:   log likelihood = -5752.9762

Probit estimates                                  Number of obs   =      16058
                                                  LR chi2(11)     =    2043.03
                                                  Prob > chi2     =     0.0000
Log likelihood = -5752.9762                       Pseudo R2       =     0.1508

------------------------------------------------------------------------------
   searchads |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    _Irace_1 |  -.2477949   .0460689    -5.38   0.000    -.3380884   -.1575015
    _Irace_2 |   .8301834   .0701028    11.84   0.000     .6927844    .9675824
    _Irace_3 |   .5806805    .067919     8.55   0.000     .4475618    .7137992
    _Igend_1 |  -.0701654   .0271361    -2.59   0.010    -.1233511   -.0169796
  _Ilocatn_1 |  -.3990771   .0311796   -12.80   0.000     -.460188   -.3379662
_Ieducatio~1 |  -1.140288   .1574473    -7.24   0.000    -1.448879   -.8316968
_Ieducatio~2 |  -.8499818   .0496387   -17.12   0.000    -.9472719   -.7526916
_Ieducatio~3 |   .9687137   .0433424    22.35   0.000     .8837642    1.053663
  _Iagevar_1 |   .3530751   .0562969     6.27   0.000     .2427352    .4634151
  _Iagevar_2 |   .1651548     .06117     2.70   0.007     .0452638    .2850459
  _Iagevar_3 |    .139455   .1031946     1.35   0.177    -.0628028    .3417128
       _cons |   -1.15927     .05691   -20.37   0.000    -1.270812   -1.047729
```

Table 17: Probit using search method (placed or answered adverts) with race, gender, location, education, and age.

```
i.race            _Irace_0-3          (naturally coded; _Irace_0 omitted)
i.gend            _Igend_0-1          (naturally coded; _Igend_0 omitted)
i.locatn          _Ilocatn_0-1        (naturally coded; _Ilocatn_0 omitted)
i.agevar          _Iagevar_0-3        (naturally coded; _Iagevar_0 omitted)
i.education       _Ieducation_0-3     (naturally coded; _Ieducation_0 omitted)

Iteration 0:   log likelihood = -4603.2141
Iteration 1:   log likelihood = -4534.2637
Iteration 2:   log likelihood = -4532.9397
Iteration 3:   log likelihood = -4532.9364

Probit estimates                                  Number of obs =  16058
                                                  LR chi2(11)   = 140.56
                                                  Prob > chi2   = 0.0000
Log likelihood = -4532.9364                       Pseudo R2     = 0.0153

------------------------------------------------------------------------------
searchrf |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
_Irace_1*|  -.0344253   .0057567    -5.06   0.000   .109852  -.045708 -.023142
_Irace_2*|   .0158797   .0162212     1.04   0.297   .021796  -.015913  .047673
_Irace_3*|  -.0394881   .0109604    -2.76   0.006   .024225   -.06097 -.018006
_Igend_1*|  -.0167211   .0042999    -3.83   0.000   .410574  -.025149 -.008293
_Iloca~1*|   .0162409   .0047656     3.48   0.000    .35023   .006901  .025581
_Iagev~1*|  -.0185746   .0075262    -2.53   0.012   .635758  -.033326 -.003824
_Iagev~2*|   .0003216   .0077787     0.04   0.967   .227924  -.014924  .015568
_Iagev~3*|   .0011429   .0128584     0.09   0.929   .035185  -.024059  .026345
_Ieduc~1*|  -.0042806   .0103926    -0.40   0.686   .041412   -.02465  .016089
_Ieduc~2*|   .0090901   .0055664     1.67   0.095   .216964   -.00182      .02
_Ieduc~3*|  -.0500723   .0063673    -5.58   0.000   .060842  -.062552 -.037593
---------+--------------------------------------------------------------------
  obs. P |   .0832607
 pred. P |   .0798681  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| are the test of the underlying coefficient being 0
```

Table 18: Probit using search method (seeking help from relatives or friends) with race, gender, location, education, and age.

```
i.race            _Irace_0-3          (naturally coded; _Irace_0 omitted)
i.gend            _Igend_0-1          (naturally coded; _Igend_0 omitted)
i.locatn          _Ilocatn_0-1        (naturally coded; _Ilocatn_0 omitted)
i.agevar          _Iagevar_0-3        (naturally coded; _Iagevar_0 omitted)
i.education       _Ieducation_0-3     (naturally coded; _Ieducation_0 omitted)

Iteration 0:   log likelihood = -4026.0618
Iteration 1:   log likelihood = -3858.4591
Iteration 2:   log likelihood = -3846.9834
Iteration 3:   log likelihood = -3846.3422
Iteration 4:   log likelihood = -3846.3278
Iteration 5:   log likelihood = -3846.3278

Probit estimates                                  Number of obs =  16058
                                                  LR chi2(11)   = 359.47
                                                  Prob > chi2   = 0.0000
Log likelihood = -3846.3278                       Pseudo R2     = 0.0446

------------------------------------------------------------------------------
searc~as |      dF/dx    Std. Err.       z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
_Irace_1*|  -.0462855   .0037965    -8.22   0.000   .109852  -.053727 -.038844
_Irace_2*|  -.0423274   .0072976    -3.41   0.001   .021796   -.05663 -.028024
_Irace_3*|  -.0561922   .0045067    -3.92   0.000   .024225  -.065025 -.047359
_Igend_1*|   .0223295   .0038742     5.92   0.000   .410574   .014736  .029923
_Iloca~1*|   .0034348   .0038715     0.89   0.372    .35023  -.004153  .011023
_Iagev~1*|  -.0083341   .0061472    -1.38   0.169   .635758  -.020382  .003714
_Iagev~2*|    -.00238   .0063656    -0.37   0.711   .227924  -.014856  .010096
_Iagev~3*|  -.0308618      .0068    -3.41   0.001   .035185   -.04419 -.017534
_Ieduc~1*|   .0945235   .0150297     8.42   0.000   .041412   .065066  .123981
_Ieduc~2*|   .0278902   .0052351     5.83   0.000   .216964   .01763   .038151
_Ieduc~3*|  -.0503795   .0044563    -6.01   0.000   .060842  -.059114 -.041645
---------+--------------------------------------------------------------------
  obs. P |   .0688753
 pred. P |   .0587885  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| are the test of the underlying coefficient being 0
```

Table 19: Probit using search method (waited at the street side) with race, gender, location, education, and age.

Section 9.2: Appendix B – The Broad Definition of Unemployment

```
i.race            _Irace_0-3          (naturally coded; _Irace_0 omitted)
i.gend            _Igend_0-1          (naturally coded; _Igend_0 omitted)
i.locatn          _Ilocatn_0-1        (naturally coded; _Ilocatn_0 omitted)
i.agevar          _Iagevar_0-3        (naturally coded; _Iagevar_0 omitted)
i.education       _Ieducation_0-3     (naturally coded; _Ieducation_0 omitted)

Iteration 0:   log likelihood = -56003.779
Iteration 1:   log likelihood = -53325.719
Iteration 2:   log likelihood = -53225.505
Iteration 3:   log likelihood =  -53224.72
Iteration 4:   log likelihood =  -53224.72

Probit estimates                                  Number of obs   =      94785
                                                  LR chi2(11)     =    5558.12
                                                  Prob > chi2     =     0.0000
Log likelihood =  -53224.72                       Pseudo R2       =     0.0496

------------------------------------------------------------------------------
       Broad |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    _Irace_1 |   -.291787   .0145004   -20.12   0.000    -.3202072   -.2633668
    _Irace_2 |  -.4910536   .0326698   -15.03   0.000    -.5550852   -.4270219
    _Irace_3 |  -.9287513   .0238415   -38.96   0.000    -.9754798   -.8820227
    _Igend_1 |  -.1817458   .0090791   -20.02   0.000    -.1995404   -.1639511
  _Ilocatn_1 |  -.1022506   .0095058   -10.76   0.000    -.1208816   -.0836196
  _Iagevar_1 |   .1869948   .0149622    12.50   0.000     .1576694    .2163202
  _Iagevar_2 |   .2503293   .0166974    14.99   0.000      .217603    .2830556
  _Iagevar_3 |  -.5107367   .0216042   -23.64   0.000    -.5530802   -.4683932
_Ieducatio~1 |  -.0462742   .0205149    -2.26   0.004    -.0864827   -.0060656
_Ieducatio~2 |  -.0480963   .0108726    -4.42   0.000    -.0694062   -.0267864
_Ieducatio~3 |  -.3003934   .0202471   -14.84   0.000     -.340077   -.2607098
       _cons |  -.4565548   .0157091   -29.06   0.000    -.4873441   -.4257655
------------------------------------------------------------------------------
```

Table 20: Probit using the broad definition of unemployment with race, gender, location, age and education

Race	Expanded employment status: not econ	employed	unemployed	Total
African	35100	20307	23045	78452
	44.74	25.88	29.37	100.00
	80.89	65.70	87.09	77.86
coloured	4142	5051	2511	11704
	35.39	43.16	21.45	100.00
	9.55	16.34	9.49	11.62
Indian/Asian	989	1006	379	2374
	41.66	42.38	15.96	100.00
	2.28	3.25	1.43	2.36
white	3161	4546	526	8233
	38.39	55.22	6.39	100.00
	7.28	14.71	1.99	8.17
Total	43392	30910	26461	100763
	43.06	30.68	26.26	100.00
	100.00	100.00	100.00	100.00

Table 21: cross tabulation – employment status (broad) and race

Section 9.3: Appendix C – A Description of the Variables created for Section 6.

⇒ unemploy – employment status where 0 = employed and 1 = unemployed.

⇒ race – the four racial groups in South Africa. 0 = African, 1= Coloured, 2 = Indian/Asian, 3 = White.

⇒ gend – gender. 0 = females, 1= males.

⇒ locatn – location which is broken down into 0 = non-urban and 1 urban.

⇒ youth – age group (15 – 30). 0 = 31 – 65 and 1 = 15 - 30

⇒ middle – age group (31 – 40). 0 = 15 – 30 & 41 – 65 and 1 = 31 – 40.

⇒ mid – age group (41 – 50). 0 = 15 – 40 & 51 – 65 and 1= 41 – 50.

⇒ old – age group (51-65). 0 = 15 – 50 and 1 = 51 – 65.

⇒ Agevar – the age variables as listed above. Mid =0, youth =1, middle = 2 and old = 3.

⇒ noedu – education category. 0 = having education and 1 = no education.

⇒ primary – education category. 0 =no education, high & tertiary education and 1 = primary education (grade r to standard 5).

⇒ high – education category. 0 = no education, primary & tertiary education and 1 = high school (standard 6 – standard 10).

⇒ tertiary – education category. 0 = no education, primary and high school education and 1 = tertiary education (degree/diploma/NTC)

⇒ education – the education variables listed above. 0 = high school, 1 = noedu, 2 = primary, and 3 = tertiary.

- ⇒ agency – search category. 0 = all other search categories and 1 = using a recruitment agency or trade unions.
- ⇒ searchwp – search category. 0 = all other search categories and 1 = enquiring at workplaces.
- ⇒ searchads – search category. 0 = all other search categories and 1 = placed or answered adverts.
- ⇒ searchrf – search category. 0 = all other search categories and 1 = relying on relatives or friends.
- ⇒ searchwas – search category. 0 = all other search categories and 1 = waited at the street side.