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Investigating chronic unemployment in South Africa,  
2008-2015

by

Hayley Innez Wakefield  
(3329909)

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Supervisors: Prof. Derek Yu & Dr Christie Swanepoel

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## DECLARATION

I, **Hayley Innez Wakefield**, hereby declare that the work on which this dissertation, entitled “*Investigating chronic unemployment in South Africa, 2008-2015*”, is my original work (except where acknowledgements indicate otherwise) and that neither the work documented, nor any part of it has been, is being or is to be submitted for another degree or examination in this or any other university. I authorise the University of the Western Cape to reproduce for the purpose of research either the entire or any portion of the contents in any manner whatsoever.

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## ABSTRACT

The South African economy is faced with a crisis of persistently high and rising unemployment rates. Although this is a cause for serious concern, the statistic captures a segment of the working-age population enduring recurrent spells of unemployment – a vulnerable group for consideration that these figures fail to uncover. The dilemma could be linked to the influx of previously disadvantaged groups (i.e. Africans and females) into the labour market since the dawn of democracy. Thus, the newly appointed South African government inherits an economy that had systematically disadvantaged most of the population, leading to an oversupply of labour, where highly-skilled labour appears to be more appealing in comparison to the relatively low-skilled labour offered by these persons.

Historically suppressed groups thus disproportionately bear the brunt of this unemployment, where some may have involuntarily remained rooted in unemployment for longer periods of time than those considered unemployed on a temporal basis. The importance of exploring and understanding the roles of some underlying forces is extremely crucial to wrestle this pressing issue in a South African context, when examining labour market dynamics.

This study therefore explores the nature and extent of chronic unemployment by examining the data of the first four available waves (2008, 2010/2011, 2012 and 2014/2015) of the National Income Dynamics Study (NIDS). The empirical findings reveal that those significantly more susceptible to chronic unemployment are: African individuals with either incomplete secondary education or at most a Matric qualification in tandem with an additional certificate/diploma, residing in traditional areas in less wealthy provinces (i.e. Free State and Mpumalanga). Furthermore, the results demonstrate that these chronically unemployed individuals are more likely to form part of the youth (25-44 years), be non-poor, with their household composition consisting of one to five household members where the minority enjoy wage employment whereas the majority endure spells of unemployment. Ultimately, they devote themselves to informal employment and occupations requiring semi-skilled and relatively unskilled labour in the community, social and personal services industry and on average earn R 3 342 per month in 2016 December prices.

**KEYWORDS:** Chronic unemployment; Transitory unemployment; Labour market

**JEL:** J00, J64

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## LIST OF ABBREVIATIONS

ASGISA	Accelerated and Shared Growth Initiative for South Africa
CAPS	Cape Area Panel Survey
CDF	Cumulative distribution function
CE	Chronically Employed
CES	Croatian Employment Service
CI	Chronically Inactive
CNEF	Cross-national equivalent file
CPI	Consumer Price Index
CPS	Current Population Survey
CSG	Child Support Grant
CSP	Community, social and personal
CU	Chronically Unemployed
EAM	Employment Agency of Montenegro
EICS	Employment Insurance Coverage Survey
ELMPS	Egypt Labor Market Panel Survey
EPWP	Expanded Public Works Programme
EQLS	European Quality of Life Survey
ETI	Employment Tax Incentive
ESS	European Social Survey
EU	European Union
EUROSTAT	European Statistical Office
GDP	Gross domestic product
GHS	General Household Survey
G7	Group of Seven
ILO	International Labour Organization
ILOSTAT	ILO Statistical Information System
INE	National Institute of Statistics
IMF	International Monetary Fund
KMP	Khayelitsha/Mitchell's Plain
LFS	Labour Force Survey
MFxs	Marginal fixed effects
NGO	Non-Governmental Organisation

NIDS	National Income Dynamics Study
OAP	Old Age Pension
OECD	Organisation for Economic Co-operation and Development
OHS	October Household Survey
PSBH	Panel Study of Belgian Households
PSPPD	Programme to Support Pro-Poor Policy Development
QLFS	Quarterly Labour Force Survey
QNHS	Quarterly National Household Survey
SALDRU	Southern Africa Labour and Development Research Unit
SIPP	Survey of Income and Program Participation
StatsSA	Statistics South Africa
TU	Transitorily Unemployed
UI	Unemployment Insurance
UK	United Kingdom
U.S.	United States
WOTC	Work Opportunity Tax Credit





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## CHAPTER ONE: INTRODUCTION

### 1.1 Background and problem statement

Persistently high unemployment levels remain one of the most pressing socio-economic problems of the South African economy (Yu, 2012:3). Despite the recent upturn in the country's economic performance for the last three consecutive quarters of 2017<sup>1</sup>, the Statistics South Africa (StatsSA) (2018b) findings continue to reflect a shockingly high unemployment rate of 27.1% in the final quarter of 2018, which will require some doing to reverse. However, the statistic is a misleading one, provided that the labour market participation rate<sup>2</sup> revealed by StatsSA (2018b) amounts to 59.4%; implying that over 15 million working-aged persons are not looking for work. Hence, economic development is not sufficient to solve the unemployment crisis.

Furthermore, South Africa continues to be a dual economy with primarily one of the world's highest unemployment and inequality rates, perpetuating both inequality and exclusion (Anand, Kothari & Kumar, 2015; World Bank, 2018). According to StatsSA, the Gini coefficient measuring relative wealth reached 0.65 in 2014 appertaining to expenditure data and 0.69 based on income data; reserving a spot in the top 5% of the global distribution where the poorest 20% of the South African population consume under 3% of total expenditure, meanwhile the wealthiest 20% consume 65% (Anand *et al.*, 2015; World Bank, 2018). Thus, unemployment continues to be a major concern given that it causes damages on many fronts: "to the quality of life of the unemployed and their families; to businesses who want to recruit and retain good workers"; as well as to the general public, who shoulder the fiscal cost (Raikes & Davies, 2015:7), while too being the main ground for many other problems such as crime, violence, poverty and inequality, posing a formidable policy, social and economic challenge (Mayer, Gordhan, Manxeba, Hughes, Feley & Maroc, 2011:6; Barker, Yu & Roos, 2018; Arora & Ricci, 2006).

Aside from the fact that the Accelerated and Shared Growth Initiative for South Africa (ASGISA) intended to halve unemployment by 2014 through the removal of several constraints

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<sup>1</sup> According to Statistics South Africa – StatsSA – (2017b; 2017c), figures show a successive rise in real gross domestic product (based on the production method) by 2.5%, 2.3% and 3.1% for the second, third and fourth quarter of 2017, respectively.

<sup>2</sup> The proportion of the working-age populace who either enjoy wage employment or are unemployed (StatsSA, 2018b).

on faster output and employment growth (Leibbrandt, Woolard, McEwen & Koep, 2010:4), the transition between unemployment and employment for many South Africans remains “neither a smooth nor an immediately successful one” (Ingle & Mlatsheni, 2017:1). This is apparent in the disconcertingly high rate of unemployment that has proved to be an enduring feature of the South African labour market since the dawn of democracy. There is general consensus that this is a structural problem as there is a mismatch between the type labour supplied and that demanded in the labour market (Pauw, Oosthuizen & Van der Westhuizen, 2008:45) – this is rather an inherent feature of South Africa’s segregated economy that had systematically disadvantaged most of the population (Levinsohn, 2007). The unemployment statistics are therefore proof that South Africa’s growth trajectory in the 25 years since attaining democracy has not absorbed labour at the required scale and the lack of access to the labour market and wage income has deepened poverty and inequality (Mayer *et al.*, 2011:6).

With this in mind, the turning point stands as one of the past century’s most important political events, with policy changes to promote equality occurring in spheres such as education, health care and within the labour market (Beukes, Fransman, Murozvi & Yu, 2016:1). This encouraged many previously disadvantaged persons to become active labour market participants, thereby excessively increasing South Africa’s labour supply (Oosthuizen, 2006). Unfortunately, the extent of labour demand increase is too slow to absorb the labour force entrants and these additional entrants happen to be relatively unskilled, thus inflating South Africa’s unemployment rates. This implies that similar groups that may have been suppressed during the Apartheid era now disproportionately bear the brunt of this unemployment, and macroeconomic perceptions fail to explain why unemployment is concentrated among special groups in the workforce. Therefore, even though South Africa has made great strides in rectifying these imbalances of the past, this task has proven to be no easy feat.

What is more, some individuals, particularly those growing up in wealthier households, hold idealistic expectations in terms of employment prospects and their reservation wage, thus spending a great deal of time looking for a job that meets their expectations (Roberts, 2011; Yu, 2013b). Some individuals may have remained rooted in unemployment for longer periods of time than others who may have only been considered unemployed on a temporal basis, but this would be for reasons other than the aforementioned. Not only that, job-seekers do not have perfect knowledge or quite enough network to acquire information on employment opportunities, as well as the necessary means and “mobility to seek work or relocate closer to

the places where job opportunities exist” (Yu, 2013b:3; Fourie, 2012b; O’Connell, McGuinness & Kelly; 2012). These adverse effects may cumulate in the course of time and act separately or jointly to undermine and ‘scar’ the social and economic lives of individuals.

Another key point to take note of is that some individuals may often lack non-technical skills, i.e. communication skills, self-presentation and emotional intelligence (Pauw *et al.*, 2008; Yu, 2013b). If not addressed with a sense of urgency, the situation is expected to increase levels of frustration and impatience among these job-seekers. Moreover, the situation will contribute to a cycle of chronic unemployment and poverty; these persons are liable to become parents of children who will also be raised in a context of poverty and at the same time contribute to social instability.

Other studies<sup>3</sup> document that unemployment often intensifies parental stress, which in turn impairs children’s future outcomes (Zedlewski & Nichols, 2012). This, however, is not the focus of the investigation. The study rather focuses on some underlying forces that determine labour market outcomes in the South African context. This is crucial, as it would aid in wrestling this pressing issue in South Africa. More importantly, to identify reasons as to why these individuals may remain trapped in unemployment, who are more prone to chronic unemployment and those factors associated with the likelihood of chronic joblessness.

Given the unique context in South Africa, the following research questions should be addressed: Are the chronically unemployed individuals distinctly different from chronically employed and transitory unemployed individuals? What are the characteristics of those individuals identified as chronically unemployed and how do these characteristics differ from the chronically employed group? Do those chronically employed individuals fair better than those chronically unemployed persons? What are the levels and trends that arise from making use of longitudinal data on chronic and transitory unemployment, as well as chronic employment? Why are some people trapped in unemployment?

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<sup>3</sup> A study conducted by Oreopoulos, Page & Stevens (2008) is an example of this. They propose that joblessness does not only lead to a massive, long lasting reduction in the monetary resources of families, but also imposes non-monetary costs (i.e. stress and residential mobility) on relatives or household members, affecting children’s long-run outcomes.

## 1.2 Objectives of the study

The general objective of the study is to make use of a balanced panel dataset, which comprises of the first four available waves (2008, 2010/2011, 2012 and 2014/2015) of the National Income Dynamics Study (NIDS), to examine labour market dynamics over the 2008-2015 period. The more specific objectives include:

- Examining the distinction between chronic and transitory unemployment.
- Investigating the labour profile of individuals who are chronically unemployed, transiently unemployed and chronically employed.
- Identifying who of the South African populace is more susceptible to chronic unemployment.
- Determining those indicators associated with the likelihood of chronic unemployment.
- Drawing a comparison between the position of the chronically employed and those who have spells of unemployment (i.e. chronically and transitory unemployed).
- Exploring the reasons as to why certain individuals find themselves being classified as chronically unemployed.

## 1.3 Relevance

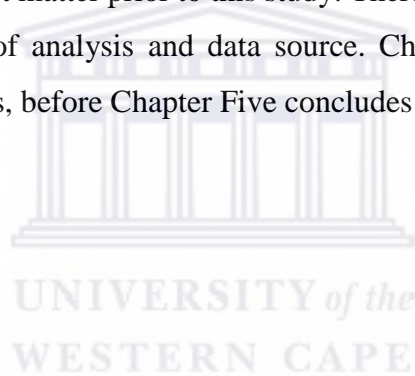
The unemployment rate fails to uncover the extent to which it may be the same persons who remain persistently unemployed, as opposed to labour market churning. Simply put, South Africa's unemployment statistic fails to give any indication of the degree of movement within its labour market. A multitude of overwhelming ramifications accompanies chronic unemployment and perhaps, one of the most terrifying aspects of long-duration unemployment is the near inescapability thereof. This study therefore explores the nature and extent of chronic unemployment by examining patterns of persistence of unemployment, employment, inactivity and movements between these states with special emphasis given to the chronically (un)employed and transitory unemployed groups.

There is a plethora of studies concentrating on unemployment that utilise cross-sectional data. This involves data obtained from labour surveys, such as the October Household Surveys (OHSs), Labour Force Surveys (LFSs) and Quarterly Labour Force Surveys (QLFSs). Contrastingly, very few local studies extensively examine the labour market dynamics of unemployed individuals with the use of NIDS panel data. In terms of cross-sectional data, the results should be treated with caution (especially those using OHS 1995), given that they are

not fully comparable<sup>4</sup> (Yu, 2013a). Although the LFS may have allowed individuals to report their period of unemployment and job-seeking duration, one cannot rely on these questions to investigate labour market dynamics. Also, drawing comparisons between merely two surveys, makes it impossible to capture the possible fluctuations of unemployment during the years between specific labour surveys. Furthermore, different individuals took part in each OHS, LFS and QLFS, making it impossible to track an individual's labour market status over a long period. This is only made possible by using the NIDS panel data.

#### **1.4 Outline of the study**

The study is structured as follows: Chapter One provides background to the study at hand, along with the problem statement, presents the research objectives, rationale of the study and outline thereof. Chapter Two then sets the context of the existing situation in the South Africa's labour market by reviewing the key concepts, theories, perceptions, ideas, as well as empirical studies conducted on the subject matter prior to this study. Thereafter, Chapter Three provides a discussion on the methods of analysis and data source. Chapter Four then presents and discusses the empirical findings, before Chapter Five concludes the study.



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<sup>4</sup> The sampling technique and methodology carried out in the OHS1995 to derive labour status is unknown. Additionally, comparisons cannot be drawn between the OHSs and LFSs, as the methodologies utilised to derive labour market status differ across these labour surveys. Lastly, the reliability of post-stratification design weights is of a concern, given that estimates of the mid-year population may not be reliable, discrepant and of poor quality, thus resulting in temporal inconsistencies even at the aggregate level (Yu, 2013a).



## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Introduction

This chapter provides an overview of four main components: conceptual framework, theoretical framework, review of past empirical studies and causes of chronic joblessness. The conceptual framework (Section 2.2) examines the definition of unemployment utilised in South Africa, along with some explanations of other key concepts relating to unemployment frequently used throughout the study. This is followed by the theoretical literature (Section 2.3), which explains as far as possible why some individuals could be chronically unemployed by means of various perspectives and theories. The past empirical studies (Section 2.4) conducted on the subject in question are then reviewed. This section first reviews the local studies on chronic or long-term unemployment that made use of cross-sectional data and panel data, followed by international literature. Section 2.5 unpacks the root causes of chronic unemployment in South Africa, before Section 2.6 concludes the chapter. In this literature review, the terms *chronic unemployed*, *chronically unemployed*, *chronic unemployment*, *chronic joblessness*, *long-term unemployment*, *persistently unemployed*, and *persistent unemployment* are used interchangeably.

### 2.2 Conceptual framework

#### 2.2.1 Defining unemployment

Unemployment is an economic condition marked by the fact that individuals actively seeking employment remain idle (Mohr, 2011). Barker (2007) elaborates on this by signifying that these persons are deemed unemployed as soon as they join the ranks of joblessness. However, they are still willing and able to supply their labour services in the labour market. These explanations exclude discouraged work-seekers who may be prepared to work at the prevailing wage, but have concluded the job search, as they perceive the likelihood of obtaining employment to be extremely slim (Mafiri, 2002). Hence, the unemployed become despondent to find employment. Also, some may purposely be categorised as ‘unemployed’ for reasons such as age, full-time study or even a marked preference for leisure (Mohr, 2011). Thus, unemployed persons typically differentiate between the ‘searching’ and ‘non-searching’ (also referred to as ‘discouraged’) unemployed (Nattrass, 2002).

Moreover, the unemployment rate is obtained by expressing the overall number of unemployed persons as a proportion of the total labour force or economically active population<sup>5</sup>, which comprises of both the employed and unemployed (Mohr, 2011; Laing, 2011). The magnitude of the workforce varies, depending on the unemployment definition utilised, thereby affecting the calculation of the unemployment rate (Nattrass, 2002). Furthermore, StatsSA (2018b) adopts the revised definition<sup>6</sup> of the official unemployment rate, suggesting that unemployed persons are usually aged between 15 and 65 years and who:

- (a) have not engaged in wage employment in the reference week; **yet**
- (b) active in terms of seeking employment or have tried to find some form of self-employment in the four weeks leading up to the survey interview; **and**
- (c) available for employment, i.e. capable of starting a job or starting up a business in the reference week; **or**
- (d) have not been proactive in the pursuit of a job over the past four weeks, but have set a date to embark on a business venture, while too being available.

The official unemployment rate is therefore calculated as the proportion of the economically active population that is unemployed, in accordance with the aforementioned definition. Thus, individuals included in an economy's unemployment statistics find themselves in a situation where they are eager to work, but cannot find a job or are temporarily laid off.

Against the backdrop of different definitions of unemployment, the South African approach is typically twofold: the strict (narrow) and the expanded (broad) definition. According to Mohr (2011), the strict definition was devised by the International Labour Organization (ILO) and commonly utilised in international comparisons of unemployment in developed countries, whilst the expanded definition is best suited for developing countries, which was applied from 1994 to 1998, to officially estimate the level of unemployment in South Africa.<sup>7</sup>

Conversely, it was in 1998 when StatsSA reverted to employing the narrow concept as the official definition, even though the broad concept may be considered a more accurate reflection

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<sup>5</sup> The economically active population consists of those between the ages of 15 and 65 years who are employed and unemployed in the reference week; thus the amount of persons deemed economically active is equivalent to the size of the labour force.

<sup>6</sup> Sub-section 2.2.2 explains this in greater detail.

<sup>7</sup> For example, the average rate of unemployment of Organisation for Economic Co-Operation and Development (OECD) countries for the fourth quarter of 2018, hovers around 5%, while in Japan it is 2.43% and in South Africa it is 27.83% (OECD, 2019).

of joblessness in the South African context (Brynard, 2011). The narrow definition is therefore more commonly utilised and relates to a job search test (Brynard, 2011). More specifically, the strict definition entails unemployed persons who:

- (a) have not engaged in wage employment during the reference week,
- (b) were prepared to avail themselves to the opportunity of wage employment during the seven days leading up to the survey interview, **and**
- (c) actively searched for a job or attempted to start up a business in the four weeks preceding the survey interview (Mohr, 2011).

The broad definition, on the other hand, ignores the condition to have taken steps to find work (criterion (c) above). In other words, whereas individuals had to have taken the necessary steps recently to find a job, the expanded definition only requires the desire to find employment (Mohr, 2011). Furthermore, broad unemployment takes into account those individuals who do not search for work during the four-week reference period, but instead they report to be available for work after accepting an offer of a job they wish to pursue (Brynard, 2011). Therefore, this definition includes unemployed persons who might be termed “discouraged job-seekers” (Ichou, 2007). These persons are also referred to as the non-searching unemployed in the South African economy and reside in more remote areas with higher unemployment rates. They comprise of the poorest of the poor, which suggests that they are not voluntarily unemployed.

### 2.2.2 The changing dimensions of measuring unemployment

The methodology employed to differentiate unemployed persons is non-available in OHS 1994-1995 and varies strikingly between OHS 1996 and LFS 2000a (Yu, 2013a).<sup>8</sup> Nonetheless, a more consistent approach is applied in the LFS 2000b-2007b. The question pertaining to reasons for non-employment over the seven days preceding the survey interview is utilised to distinguish the unemployed<sup>9</sup> in the latter surveys. Those individuals considered part of the economically active population who are not deemed employed, nevertheless declare that they are in search of a job by the time the survey takes place, would also be classified as unemployed based on the narrow definition if the following reasons for not working over the last seven days resonate with them: “lack of skills, seasonal worker, cannot find suitable work, contract worker, recently retrenched”, provided that these three conditions hold true (Yu, 2013a:706):

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<sup>8</sup> The entire explanation provided in Table A.1 in the Appendix follows that of Yu (2013a).

<sup>9</sup> Refer to criteria (a), (b) and (c) in Sub-sub-section 2.2.1.1 above.

- (a) they intend to take up employment if offered a job;
- (b) based on the assumption that the job offer is accepted, they are prepared to take on the job within two weeks; **and**
- (c) have been proactive in terms of their search for employment over the last four weeks (i.e. registering at employment agencies, posting or responding to advertisements).

If individuals simply meet the first and the second requirement, they are instantly classed as unemployed based on the broad definition.

The methodology adopted in the LFS 2000a is generally similar to that of the LFS 2000b-2007b, with the exception of two issues (Yu, 2013a). First, criterion (b) above changes from ‘within two weeks’ to ‘within one week’. Second, the answers of respondents to the question on reasons for absence from work in the last seven days, despite enjoying wage employment, are considered. For example, if the respondents answer any of the following: “problems with transport, off-season activity, unrest (violence) or reduction in economic activity” (Yu, 2013a:706) – while too declaring that they are willing to take up employment if being offered a job, they could very well be categorised as unemployed.

In OHS 1996-1999, criterion (b) mentioned above is not applied to distinguish the unemployed under the broad definition. Even though criterion (b) is still used to identify the unemployed under the narrow definition in these surveys, persons interviewed must declare that they are able to start working within one week (as in LFS 2000a) rather than two weeks (as in LFS 2000b-2007b) before being classified as unemployed. Instead, the responses to the question pertaining to respondents’ reasons for employment absence in the last seven days are used to distinguish those who are unemployed. Overall, the analysis above provides an indication of the “incomparability of the labour market status derivation methodology between the OHSs and LFSs” (Yu, 2013a:706).

The International Monetary Fund (IMF) proposed an evaluation of the LFS, during the year 2005, leading to the reconsideration of the labour market status derivation methodology with the release of the QLFS. Persons who are not defined as employed are distinguished as narrow unemployed in the QLFS if condition (a), (b), (c) and (d) in Sub-section 2.2.1 holds as true. In the QLFS, discouraged workers are identified more strictly. These respondents need to provide a main reason as to why they have failed to attain employment or establish a business over the

last four weeks. The rest of them who are not deemed employed nor unemployed under the narrow definition, are classified as discouraged work-seekers if their answers for not attempting to find work or start a business venture include one of the following: “no jobs available in the area, unable to find work requiring his/her skills or lost hope of finding any kind of work” (Yu, 2013a:707) – and they state that they are fit to start a new job (if offered suitable employment) or establish a business within one week. The other remaining respondents are defined as inactive.

### 2.2.3 Voluntary and involuntary unemployment

Though several definitions of ‘voluntary’ and ‘involuntary’ unemployment are entrenched in economics literature, a simple distinction is frequently applied. Voluntary unemployment is attributed to an individual’s decision, proposing his/her unwillingness or indifference to employment at the going wage (Patil, 2015; Laing, 2011). Conversely, involuntary unemployment exists due to the socio-economic environment in which individuals operate, where this environment encompasses the market structure, government intervention and the level of aggregate demand (Patil, 2015). Laing (2011:176) further defines involuntary unemployment as the strict desire to work at the going wage.

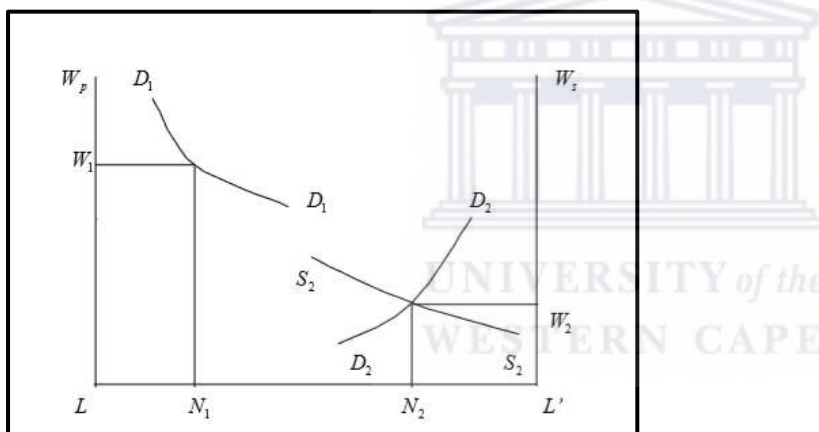
When comparing the non-searching unemployed (voluntary or discouraged work-seekers) and the searching unemployed (involuntary work-seekers), it can be deduced that those who are non-searchers are more deprived than those in search of a job, thus facing a greater incentive to secure employment, are unhappier and confronted with greater discouragement regarding the prospects of finding employment and higher costs of job search (Fourie, 2012a; Fourie 2012b). Their lack of job search is not the outcome of preferences, but rather of constraints. They are called discouraged work-seekers and key discouragement factors involve a low likelihood of finding a job, poverty, lack of transportation and facilities, high cost of searching and many more (Fourie, 2012a).

Despite the ease of distinguishing between these terms, the notion that one can judge whether unemployment is either voluntary or involuntary has been questioned (Kingdon & Knight, 2000:1). The argument is illustrated in Figure 2.1. For this part of the explanation, the formal and informal sector would be referred to as the primary and secondary sector, respectively. To simplify things, the total labour force is constant and equivalent to  $LL'$  on the horizontal axis. Assuming that all workers are willing to exert their efforts in the primary sector; the demand

for this sectoral employment is denoted as  $D_1$  and considered a function of the primary sector wage, set at  $W_1$  by efficiency wages or union bargaining. Thus, primary sector employment is the  $LN_1$  distance along the horizontal line, while the rest ( $N_1L'$ ) avail themselves of the opportunity to engage in secondary economic activities.

The curve  $D_2$  illustrates the demand for labour in the secondary sector as a function of the wage, in that particular sector. With the secondary sector labour market being a competitive one, it allows the wage to adjust to clear the market, resulting in  $N_2L'$  workers being hired at wage  $W_2$ . This leads to  $N_1N_2$  number of workers categorised as unemployed, who are willing to operate in the primary sector at the going wage of  $W_1$  but fail to obtain employment. Also, these persons are unwilling to supply their labour services in the secondary sector at the going wage,  $W_2$ .

Figure 2.1: The formal and informal sector of the labour market



Source: Kingdon & Knight (2000:31).

The formal sector labour market is therefore regulated and non-clearing, as a result of efficiency wage setting or union-bargained wage setting, whilst the informal sector is deemed competitive and market clearing (Fourie, 2012b). It is for this reason that they are classified as both voluntary and involuntary unemployed in the segmented labour market, given that a different labour market exists for the involuntary and voluntary unemployed. These individuals' unwillingness to work is supposedly voluntary and barriers to entry implies that "the available set of options is so limited as to render unemployment involuntary for the purpose of forming value judgments and making policies" (Kingdon & Knight, 2004:394).



There are a few common types of voluntary and involuntary unemployment. Economists differentiate between at least four types of unemployment: frictional, cyclical, seasonal and structural unemployment. It is of utmost importance to draw a distinction between these different types of unemployment, as this aids in understanding the possible reasons for their persistence and in the provision of methods on how to address them effectively. Frictional unemployment is considered voluntary, while cyclical, seasonal and structural unemployment are largely involuntary. These types of involuntary unemployment include workers who are dismissed from jobs due to an economic crisis, industrial decline, company liquidation or even organisational restructuring, amongst others (Patil, 2015:91). Table 2.1 below provides a summary of these occasionally mentioned types of voluntary and involuntary unemployment.

Table 2.1: Types of voluntary and involuntary unemployment

<b><u>Voluntary unemployment</u></b>	
<b>Type</b>	<b>Meaning</b>
Frictional	<ul style="list-style-type: none"> <li>• Mostly voluntary and reflects individual search behaviour, accounting for the unemployed who are between jobs for various reasons;</li> <li>• The elderly exits the labour force, while the youth enter, but often new workers do not fill the jobs vacated by those who leave (Lipsey &amp; Harbury, 2004).</li> </ul>
<b><u>Involuntary unemployment</u></b>	
<b>Type</b>	<b>Meaning</b>
Cyclical	<ul style="list-style-type: none"> <li>• Arises once an economy undergoes a decline for goods and services, which is “directly attributable to the lack of jobs caused by the business cycle” (LeVine, 1968; Tucker, 2010:162);</li> <li>• Increases during recessionary periods and decreases over expansionary periods (McEachern, 2009);</li> <li>• Unemployment rate exceeds the norm, i.e. during a recession (Sexton, 2012).</li> </ul>
Seasonal	<ul style="list-style-type: none"> <li>• Arises since certain occupations require workers for only certain times of the year (Roux, 2005);</li> <li>• Certain jobs cease to exist in the off-season (McEachern, 2009);</li> <li>• Short-term and entirely predictable, i.e. the agriculture and tourism sectors.</li> </ul>
Structural	<ul style="list-style-type: none"> <li>• A more long-term problem lasting several years or longer and refers to a rise in job losses, as a result of adverse sectoral shocks (Hall &amp; Lieberman, 2012:554; Laing, 2011);</li> <li>• Arises when changes in the jobs lost either take place or the vacancies no longer exist due to the changing composition of the economy;</li> <li>• Job vacancies and structural unemployment coexist because unemployed workers do not possess the necessary skills that are demanded by firms or fail to live where these skills are needed (McEachern, 2009).</li> </ul>

Source: Author's own compilation from various sources.

#### 2.2.4 Chronic unemployment versus transitory unemployment

The labour market is dynamic but not static, so the rate of people entering and exiting the employment pool will usually not sum to zero. There will always be individuals searching for different jobs or even better ones; individuals possessing some skills will become less marketable as a result of technological or cultural change while those possessing other skills will become more marketable (Reiff, 2015). The period of transition between labour market states are dependent on two types of unemployment (i.e. chronic and transitory unemployment), provided that these concepts include a dimension of time.

Gbosi (2005:7) defines chronic as “something marked by long duration or frequent re-occurrence”. Similarly, the term refers to something that always persists or is being encountered. Therefore, when unemployment tends to be a long-term feature of a country, it is referred to as chronic unemployment (Deepashree, 2007).

Chronic unemployment may follow job loss and consists of recurrent spells often interspersed with a short period of work or withdrawal from the labour force (Blasi, 2011; Lilja, Santamaki-Vuori & Standing, 1990). These recurrent spells exacerbate the tendency for the unemployment burden to fall on the same people. Chronic unemployment patterns are regular presenting problems of clients in middle and mature adulthood years, whilst for some, persistent unemployment may be an outgrowth of an earlier adopted lifestyle that was seen as a more acceptable one at a younger age (Zarb, 2013:116). When the decline of labour market demand is deep and persistent, a country may experience chronic unemployment (Akabas & Kurzman, 2005). Correspondingly, if the job market ultimately cannot absorb most of those who want to work, even as non-traditional or contingent workers, such a deficiency in labour market adaptability and demand can trigger chronic unemployment (Akabas & Kurzman, 2005). Visible chronic unemployment does not constitute disguised unemployment, due to the fact that those thus affected are not working (Cho, 1963).

More commonly the terms ‘chronic unemployment’ and ‘growth-gap unemployment’ are used interchangeably. According to King (1972), growth-gap unemployment refers to the accumulation of unemployment caused by a recession lasting several years. Hence, growth-gap unemployment only emerges in the longer term. Growth-gap unemployment results when the economy’s growth potential exceeds its actual rate of growth, so part of its productive capacity is not utilised (King, 1972; Sapsford, 2013). Individuals undergoing prolonged



unemployment form part of an underclass and are not counted among the ranks of the officially unemployed (Tunnell, 2006). They do not draw unemployment insurance checks and report to the unemployment office on a regular basis for employment information. Hence, they are the chronically unemployed who have given up on finding decent-paying legitimate work but remain excluded from official tallies (Tunnell, 2006).

Transitory unemployment on the other hand occurs when people are jobless between periods of unemployment (Grant, 2014). Thus, workers have periods of employment followed by periods of unemployment (Grant, 2016). This type of unemployment could arise due to unforeseen and temporary circumstances (International Labour Office, 1957), or when workers are employed on a day-to-day basis for a contractual job and have to be dismissed as soon as the contract terminates. The labour markets do not operate immediately in matching supply of, and demand for, labour. Therefore, the inevitable time delay when an employee transitions between jobs due to the termination of previous job contract is known as transitory unemployment.

## 2.3 Theoretical framework

### 2.3.1 The competitive framework

According to economists, unemployment was taken as axiomatic that some workers would be unemployed as a result of exogenously given prior inflows, with the theoretical goal being to provide reasons as to why they may remain so (Laing, 2011). Figure 2.2 depicts the central elements surrounding the competitive approach. The labour force number equals  $N$ . Each panel illustrates the level of employment ( $L$ ) and real wage ( $w$ ) along the horizontal and vertical axes, respectively. The lines  $D$  and  $S$  denote the respective labour demand<sup>10</sup> and supply curves. Under ideal competitive conditions, the real wage is fully flexible and adjusts to eliminate any imbalances between the demand and supply of labour. The equilibrium is located at point  $C$  in both panels (a) and (b).

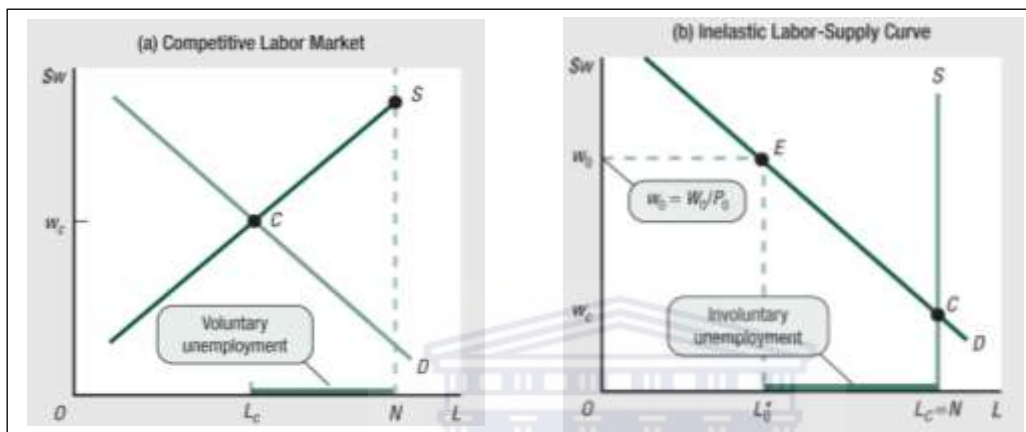
The supply curve in panel (a) is positively sloped. In this competitive labour market, at the equilibrium (real) wage,  $w_c$ , there is full employment because everyone who is prepared to work at the going wage,  $w_c$ , would be allowed to do so. Although  $(N-L_c)$  labour force participants might not work, their unemployment is entirely voluntary, as they refuse to work

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<sup>10</sup> Labour demand is a derived demand.

at the going equilibrium wage,  $w_c$ . Contrastingly, in panel (b), all ( $N$ ) labour force participants are assumed to supply their labour inelastically, leading to the vertical labour supply curve,  $S_0$ . This is regarded as a convenient setting, due to the fact that nobody would voluntarily remain without work if a job can be found that offers any positive wage. At equilibrium – point  $C$  – the wage is  $w_c$  and everyone is employed. There is neither voluntary nor involuntary unemployment.

Figure 2.2: Unemployment and the competitive framework



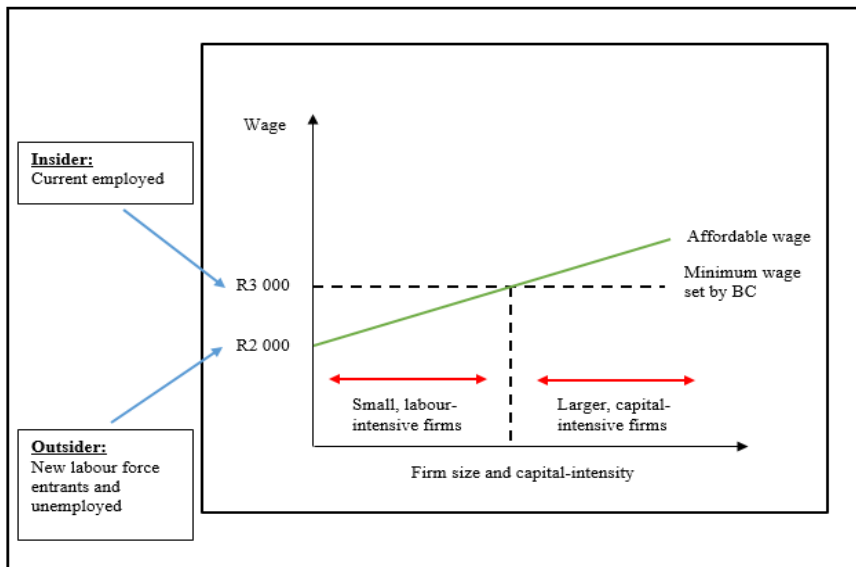
Source: Laing (2011:766).

However, in a situation where the real wage is a little arthritic and stuck at some initial level (refer to panel (b)), all ( $N$ ) labour force participants would want to work at this wage, but employers will be willing to hire only  $L_0^*$  workers. Since it is ultimately employers who decide how many workers to hire, as shown at point  $E$ , the level of employment is  $L_0^*$ . Consequently, a total of  $U_0^* \equiv (N - L_0^*)$  workers are involuntarily unemployed; they would like to work at the going wage but firms are unwilling to hire them.

### 2.3.2 Insider-outsider hypothesis

Trade unions engaging in collective bargaining on behalf of the interests of employees can alter the nature of the labour market in many ways. “The insider-outsider theory studies the behaviour of economic agents in markets where some participants have more privileged positions than others” (Lindbeck & Snower, 2002:165). With the aid of Figure 2.3, the theory provides an explanation of the presence and persistence of unemployment in an economy.

Figure 2.3: Collective bargaining on minimum wages affecting the unemployed



Source: Adapted from Nattrass (2000:136).

According to Ayogu & Ross (2005:176), “larger firms use more capital-intensive production techniques, achieve higher labour productivity, and hence pay higher wages than smaller firms”. For this reason, bargaining councils are more likely to be dominated by these larger firms and negotiate agreements that suit them, but not small firms. It is supposed that these large corporations negotiate wages that they are inclined to pay, but the less productive small firms cannot (Maree, 2009). This implies that the minimum wage agreed upon during the collective bargaining process is too high, forcing the smaller corporations, more labour-intensive and the primary source of job creation to either shut down or dismiss workers.

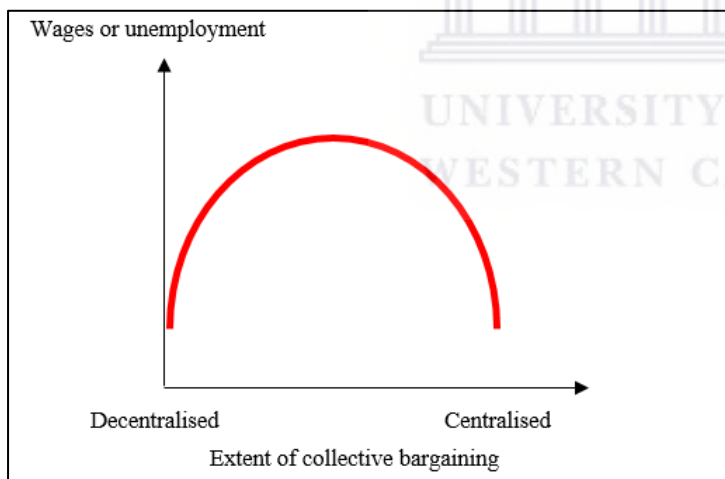
Furthermore, “incumbent workers (insiders) in the labour market enjoy more favourable employment opportunities than others (outsiders), on account of labour turnover costs (e.g. costs associated with hiring, training, firing, and insiders’ ability to punish underbidding outsiders)” (Lindbeck & Snower, 2002:166). The currently employed (the insiders) “prefer wage levels to remain high” (Yu, 2012:10) and are the only group being considered/protected by the minimum wage agreement. This being said, the standpoints of unemployed persons (the outsiders) are not represented when negotiation over the compensation of workers takes place between trade unions and employers during collective bargaining; “wages are too sticky and slow to fall during the times of low labour productivity and labour demand” (Yu, 2012:10). Some of the outsiders do not mind being paid a wage level (e.g. R2 000) lower than the minimum wage (e.g. R3 000) but unfortunately this is impossible, as employers cannot go

against the minimum wage agreement and cannot hire new workers below the specified minimum wage. Hence, the outsiders could remain unemployed for an extended period of time (Yu, 2013b).

### 2.3.3 Calmfors-Driffill hypothesis

This hypothesis theorises a direct relationship between the degree of collective bargaining in an economy and unemployment level. Calmfors & Driffill (1988) argue that the degree of coordination of wage bargaining matters for unemployment (Gottfries, 2013). Countries with highly decentralised or centralised wage-setting systems exhibit relatively moderate wage growth, while those with intermediate levels of bargaining are more prone to unemployment and inflation (Nattrass, 2000:133). Calmfors & Driffill (1988:15) justify this by highlighting that “both heavy centralisation and far-reaching decentralisation are conducive to real wage restraint, whereas intermediate degrees of centralisation are harmful”, thus suggesting a hump-shaped relation between real wages (unemployment) and centralisation as illustrated in Figure 2.4.

Figure 2.4 The Calmfors-Driffill model



Source: Adapted from Calmfors & Driffill (1988:15).

South Africa is a country characterised by an intermediate level of wage coordination, being prone to poor labour market outcomes (Nattrass, 2000; Barker *et al.*, 2018). Trade unions effectively represent the entire labour force, which comprises of both the unemployed and employed and the relation illustrated in the figure above stands in contrast to an often postulated monotonic one whereby centralised bargaining entails the exercising of wage restraints, as a method to ensure that real wages and unemployment are kept to a minimum (Calmfors &

Driffill, 1988). As far as intermediate bargaining is concerned, the unemployment likelihood is highest at this level and unions are powerful enough to negotiate significantly higher wages, but since they do not represent all employees, they are not concerned about the potential unemployment that this may cause (Godfrey, 2010). As a result, unions are less restrained in wage bargaining and consequently increase unemployment. The effect of this could in fact be so severe, causing non-union members to be retrenched from companies and forcing workers to take up extended unemployment, as a result of a too large increase in wages (and thus production costs).

#### 2.3.4 Excessive reservation wages

The reservation wage is a concept that has relevance for modelling labour supply decisions, through its influence on transitions from unemployment to employment. Walker (2003) defines one's reservation wage as the lowest (highest) wage at which one will (not) be willing to accept a job offer. This is therefore the wage at which one is indifferent between work and leisure.<sup>11</sup> If the wage drops below this threshold, changes in the wage will not affect behaviour, whereas an increase above this level will encourage labour market entry. Nevertheless, one of the highly controversial issues amongst Microeconomists is that reservation wages are priced too high. Reservation wages are influenced by many factors, but a special case here would be that leisure is too costly and inflated by other factors such as alternative income sources (Hinnosaar, 2004) amongst others.

Conditional on other characteristics, individuals with alternative sources of revenue and/or other employed household members would tend to have lower search costs. Further, agents in more well-resourced households may have easier access to financial instruments to insure against labour income risk and, as a result tend to have higher reservation wages (Prasad, 2003). The unemployed usually receive some income from unemployment benefits – this determines the minimum level of the reservation wage, as it can be of a flat rate<sup>12</sup> or be dependent on previous wage levels, directly influencing the level of the reservation wage (Hinnosaar, 2004). These unemployment benefits usually change with the duration of unemployment spell, and when one is no longer eligible for such benefits, the reservation wage declines sharply, although sometimes an unemployed person may have other additional sources of income.

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<sup>11</sup> This is considered the slope of the budget line, which is tangent to the individual's utility function, when all of his/her time is devoted to leisure activities.

<sup>12</sup> This implies that the reservation wage would be the same for everyone.

Moreover, the costs of a job search are considered to embody the opportunity costs of leisure, as well as spending on the search process, where a more efficient search implies higher costs. “If there were no limits on continuing the search while having accepted an offer, the reservation wage of a person would be equal to his alternative income from unemployment benefits” (Hinnosaar, 2004:34). In contrast, if individuals cannot continue their search for employment after having accepted an offer, they would be willing to turn down some jobs paying more than the unemployment benefits, in order to find a better paying job. The higher the alternative income (i.e. unemployment benefits and any other excess funds), the greater the likelihood of receiving a suitable job offer and the higher the expected wage offered, the higher the reservation wage. Therefore, ceteris paribus a higher reservation wage gives rise to higher wage expectations and as a result makes finding a new job more difficult and prolongs the unemployment duration.

Figure 2.5: Labour supply equilibrium when market wage equals reservation wage



Source: Barker et al. (2018:47).

With reference to Figure 2.5, point *P* represents an interior solution because market wage exceeds reservation wage (i.e.  $R10 = W > W_{RES} = R5$ ). If market wage equals reservation wage ( $W = W_{RES}$ ) or  $R5$  in this example, the budget line becomes *BK*. A person with a high reservation wage would maximise utility at point *B*, where the budget line is tangent to the indifference curve,  $U_2$ . This equilibrium stands for the corner solution, as it occurs at the corner



of the budget line where  $L = T$ . The person opts to work zero hours and hence chooses to remain unemployed despite continuing to look for work that pays him/her a market wage above the reservation wage – and this person could be unemployed for a long time if the reservation wage remains persistently high. His or her total income is R50, which consists of non-labour income only. If the person chooses to work, let's say, 12 hours, as indicated at point  $O$  in the figure, even though he/she earns a higher total income of R110 ( $R5 \times 12$  hours = R60 labour income, plus R50 non-labour income), a lower utility of  $U_I$  is attained. The budget line  $BK$  is not even tangent to  $U_I$ . Therefore, the person would be better off at  $B$  not working.

### 2.3.5 Human capital theory

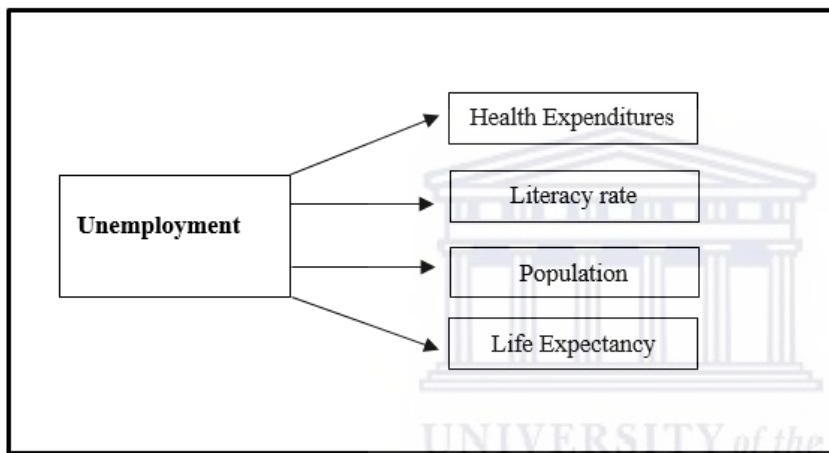
Human capital is the most imperative determinant of economic structure. The origins of human capital theory can be traced to the work of Adam Smith, but was later extensively developed by others, such as Theodore Schultz, Gary Becker and Jacob Mincer, to name but a few. The term 'human capital theory' "conceptualises workers as embodying a set of skills that can be 'rented' out to employers" (Coulson, 2009:10). This is referred to as investment in human capital, which can be done through schooling, on-the-job-training, health care, vitamin consumption, as well as obtaining information about the economic system (Becker, 1962). Similarly, human capital also orients effects on unemployment.

Education is the main contribution to the unemployment rate and stresses a strong negative relationship between educational attainment and unemployment likelihood (Samiullah, 2014). Likewise, "the level of formal education an individual has attained may be used to predict how quickly an individual will acquire new skills on the job, how productive the individual will be after training, the individual's work ethic and his or her commitment to the job" (Dias & Posel, 2007:3). Those who choose not to invest in education can expect to be associated with a higher likelihood of unemployment because firms are less likely to employ individuals who possess inadequate levels of human capital, as the level of human capital among prospective employees is likely to determine their level of productivity (Nickell, 1979; Dias & Posel, 2007).

Over the lifespan of any individual, the acquisition of human capital occurs in three stages. The first stage is known as early childhood where general human capital attributes (i.e. basic numeracy and literacy skills and attitudes towards learning) are acquired (Coulson, 2009:11). The second stage deals with the acquisition of more specific human capital by the youth in secondary and tertiary education. The thoughts of the youth towards the selection of a

profession is not viable and infertile in some instances, especially for those professions that can be replaced by speedy mechanisation and computer technology (Samiullah, 2014). The final stage involves the continuous acquiring of human capital over an individual's working life through job training and work experience. This can be linked to the significance of the health factor affecting one's employment level. Unemployment escalates as a result of less efficient workers, affecting the economy negatively. The health of individuals also determines their life expectancy. If fewer education and health expense occur among the population, it will lead to poor human capital that can work and produce less, thereby increasing unemployment levels in the long-run. Figure 2.6 summarises the discussion.

Figure 2.6: The factors of human capital



Source: Samiullah (2014:2).

### 2.3.6 Human capital externality

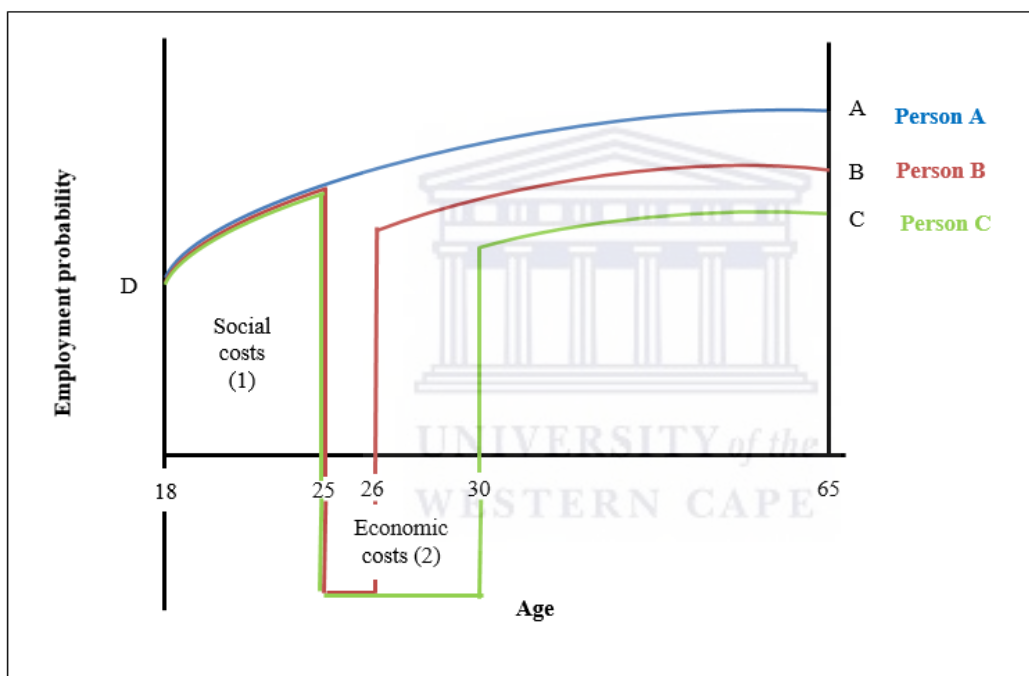
Unemployment likelihood or more particularly, chronic unemployment likelihood can be related to human capital externalities. Social costs of unemployment could be linked to typical behaviour patterns of the chronic unemployed. These include, amongst others, problems of daily routine, social withdrawal, financial dependence, inadequate self-discipline, low initiative, poverty and crimes (Zarb, 2013:116). Contrariwise, economic costs entail both direct and indirect costs where the direct costs include job search costs, travelling, attire and related expenses (Barker *et al.*, 2018), while the indirect cost arises because during the time the individual spends gaining full-time work experience, that person decides to exert their labour efforts in the labour market instead of pursuing a career in some field of study that would improve their level of educational attainment and simultaneously supposedly increase employment prospects in future. Most individuals do not necessarily calculate the sums



directly, but similar factors come into play when an individual decides what to do after school – to enhance their human capital or just enter the labour market.

Borjas (2013) states that the quality of the environment in which an individual is raised acts as a human capital externality in terms of the human capital that a particular individual is likely to have. In other words, he suggests that the environment or background of an individual can be considered an external factor, which is not determined by the individual or parent, but has some impact on the human capital accumulation process. Hence, human capital is dependent on both social and economic costs.

Figure 2.7: The “Augmented” Human Capital Theory



Source: Adapted from Barker et al. (2018:235).

With that being said, this theory can be viewed in terms of employment probability. First of all, Figure 2.7 depicts both the social as well as economic costs of gaining work experience (in an event where human capital could have been acquired) compared against the employment likelihood of an individual in the labour market. Hypothetically, we assume that all three individuals (Person A, B and C) are Matriculants who decide not to further expand their education, but rather enter the labour market immediately upon completing secondary level schooling. These three individuals may feel the need to enter labour market immediately after high school due to certain social and economic costs. For instance, some individuals are faced

with social costs, i.e. they may have been impregnated during their teenage years, could never afford private schooling and are financially dependent on their parents, may be trapped in poverty or are even responsible for sustaining their siblings after the death of their parents.

With reference to Figure 2.7, Person *A* has the highest employment probability and the employment profile that is likely to be enjoyed is represented by *DA*. Person *A* continues to gain work experience over the years, increasing his/her chances of finding employment when moving between jobs. On the other hand, in a situation of Person *B* who may become unemployed a few years later for some or other reason and remain so for roughly one year (transitory unemployed), will ultimately have an employment profile (*DB*) that is lower when compared to Person *A* and he/she would have difficulty catching up with Person *A*. Person *C* too becomes unemployed five years later and remains so for another five years (chronically unemployed). During this time, lots of work experience is lost, allowing his/her skills to decay and become obsolete, making it harder to find unemployment. As illustrated in the figure, it is evident that *DA* is steeper than both *DB* and *DC*. The reason for this difference in incremental employment probability can be attributed to the degree of work experience gained.

In addition, Person *B* and *C* may be trapped in unemployment, as a result of being too restricted by economic costs. These constraints may allow them to not improve their human capital or skills during their unemployment spell or complete the job search process, thus lowering their employment probability in an economy where solely a Matric qualification is no longer as valuable. Simultaneously, these economic costs could lengthen the job search period, as such individuals need time to gather the necessary resources (i.e. travel expenses and work attire) to ensure their attendance at job interviews.

### 2.3.7 Nepotism in the labour market

Unemployed persons primarily secure employment through connections and networks, where their connections constitute a specific kind of social capital (Seekings, 2003). This implies that jobs are found with employers filling vacancies through informal networks. According to Erasmus (1999), majority rely on employed friends and family members to inform them of vacancies and/or put in a good word for them with their employers. With that being said, employers also rely on informal channels in part because they are faced with “huge numbers of equally ‘qualified’ potential applicants: The ‘formal’ qualifications (notably the Matric certificate) cease to be of value in a context in which there are literally tens of thousands of

applicants who all share these qualifications” (Seekings, 2003:13; Wittenberg, 1999). Education is therefore not a reliable predictor of employment likelihood in certain instances (Wittenberg & Pearce, 1996), due to the fact that preference is granted to those with connections. “It is surely the case that the number of discouraged unemployed in South Africa is large, in part because vacancies are so often filled through such channels” (Seekings, 2003:14). Thus, some groups bear a disproportionate share of the burden of unemployment, as a result of employer discrimination.

Likewise, some employers prefer certain groups of workers or have a certain taste or preference for certain groups. For instance, they may prefer referrals to non-referral applicants. This preference may arise from employers’ perception that referrals may be a good reflection of an extremely hard-working employee’s exceptional work ethic. They may then employ referrals even if it costs them more. Employers see employing non-referrals as having an extra cost, such as psychic disutility. The strength of this psychic disutility for the discriminating employer is measured by the discrimination coefficient. A discriminating employer will only consider hiring non-referrals at a stipend beneath that of referrals by the measure of the segregation coefficient.

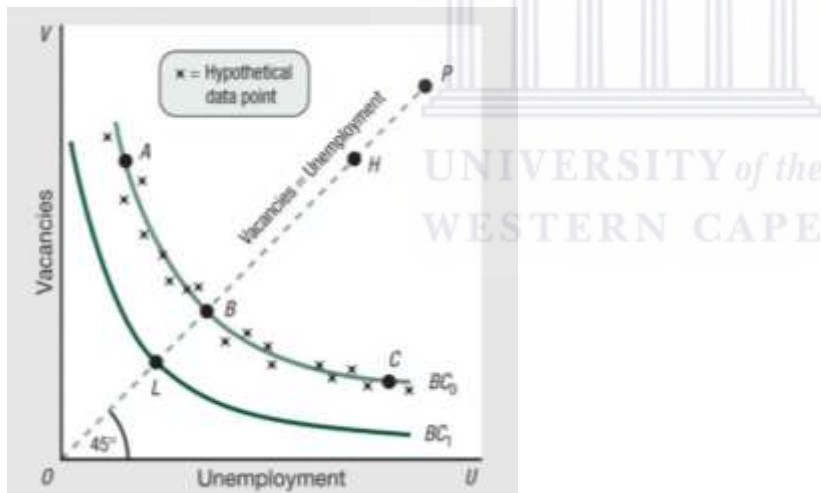
If the pay rate of the referral candidate is signified by  $W_R$  and that of non-referral candidates  $W_N$ , then the discriminating employer will accept the expense of utilising a non-referral as  $(W_N + d)$ , where  $d$  represents the discriminating coefficient. The discriminating employer will along these lines, only be indifferent between employing non-referrals and referrals if  $W_R = W_N + d$ . Candidate segregation in this manner, serves to blind the employer from the genuine financial expense of employing non-referral candidates. For instance, if  $W_N = R1\ 000$  and  $d = R100$ , then a segregating employer will only utilise non-referrals if  $W_N = R900$ .

Another scenario would therefore be where non-referrals could perhaps decline the offer, given that their reservation wages are higher, forcing them to remain unemployed for lengthier periods. An underclass of unemployed, comprising of those unemployed (and other members of their households) who lack social capital is therefore identified. More care needs to be taken in the examination of those who have not experienced long-duration unemployment, as they might either be temporarily laid off, have only recently graduated from high school or been retrenched, but will remain unemployed for a long period of time (Seekings, 2003:20).

### 2.3.8 The Beveridge Curve

The mismatch of skills in the labour market is an equally important source of market failure (Davis & Sanchez-Martinez, 2014). Job-seekers fail to build alliances, add onto their network or maintain relationships with those possessing the necessary information on job opportunities, requirements or employability. This draws attention to the types of skills needed to escape unemployment; in other words, having skills that are misaligned with what is desired in the labour market can further worsen the unemployment situation of the unemployed. Under-education (or inadequate skills) is therefore, seen as a sign of market failure (specifically, asymmetric information) in the labour market but may also be linked to the lack of investment in education (or training) by the unemployed as a result of their insufficient resources. In the same way, this points toward the mismatch between the demand for highly educated workers and their supply. While this may be the case in a particular country, a significant proportion of the labour force might still have tertiary education (Rutkowski, 2013). The supply of highly educated workers will exceed its demand, leading to a high unemployment rate among individuals with tertiary education.

Figure 2.8: The Beveridge curve



Source: Laing (2011:821).

The statistical relationship between the level of unemployment ( $U$ ) and the number of open vacancies ( $V$ ) is illustrated with Beveridge curves (see Figure 2.8). The skills mismatch problem is stressed by comparing two contrasting countries, namely South Africa (a developing country with a sizeable number of relatively low-skilled job-seekers) and Hong Kong (a developed country with more highly skilled job-seekers). Point  $L$  on the  $BC_1$  curve is closer to the origin, highlighting Hong Kong's low level of unemployment. However, due to brain drain,

some vacancies may be left unfilled (immigration of skilled people needed). These individuals therefore have a lesser likelihood of experiencing chronic unemployment, as they possess the necessary skills demanded by the labour market.

Nonetheless, point *H* lies further away from the origin, signifying the serious skills mismatch problem in South Africa, namely high unemployment and a high number of open vacancies. However, the number of available vacant posts exceeds the number of unemployed at point *H*. This highlights the skills mismatch gap and poor job search methods in South Africa. Hence, given imperfect information regarding available vacancies persisting in the South African labour market, the job search period of those seeking employment is affected negatively, thereby lengthening their unemployment duration.

## **2.4 Review of past empirical studies**

### 2.4.1 South African literature

Individuals entering the South African labour market on the presumption that they will successfully secure employment are gaining access to a labour market characterised by significantly high levels of unemployment. Over the period of the fourth quarter of 2017 to the fourth quarter of 2018, South Africa sees a worsening in its unemployment rate from 26.7% to 27.1% (StatsSA, 2018b). With a staggering unemployment statistic such as South Africa's, it is not surprising that certain individuals are allegedly trapped in a situation where they experience a long spell of joblessness. The time span of a job search is not necessarily always related to the scarcity thereof, but rather influenced by individual/class characteristics (Nonyana, 2015; Perazzi, Merli, Sinha, Rivas & Zambrano, 2017). Though, this dissertation offers a detailed investigation on the chronically unemployed among the South African working-age populace, little research is conducted in this area and local studies to date either primarily rely on cross-sectional data or are limited to age group (i.e. young persons) where panel data is employed.

#### 2.4.1.1 Studies using cross-sectional data

For local studies using cross-sectional data, two main strands of literature can be distinguished on the persistently unemployed in South Africa: merely descriptive statistics on (i) the duration of unemployment spells and (ii) demographic and education characteristics pertaining to long-duration unemployment. In marked contrast to the aforesaid, these studies only briefly examine long-term or chronic unemployment at the time of writing. Looking at studies that only analyse

one labour survey, Borat & Leibbrandt (1996), using the 1994 OHS data, only briefly discuss persistent unemployment. The authors find that 17% of the jobless are unemployed for up to six months, 15% between six and 12 months, and a substantial 68% endure an unemployment spell for longer than one year. Not only are most unemployed persons without work for a long duration, but 65% have no previous occupation (Bhorat & Leibbrandt, 1996). As many as 89% of the unemployed aged 16 to 20 years have no actual work experience, whereas above 60% of all unemployed persons across all respective age cohorts, up to and including 31-35 year-olds; even amidst the elderly unemployed as many as half have no employment history (Klasen & Woolard, 1998).<sup>13</sup>

By the same token, Moller (1992) notes that 60% of the unemployed are in search of a job for more than a year and the median duration of unemployment lies between one and two years. Kingdon & Knight (2000) on the other hand vigorously examine whether unemployment is largely voluntary. The authors make use of data obtained from the SALDRU in 1993, OHS 1994 and OHS 1997. Results show an average unemployment duration of about two years and two months, whereas the median duration of unemployment is two years. In addition, results indicate a very long duration of unemployment (more than three years) for roughly 37% of the unemployed. A further 29% are unemployed for between one and three years, so that about two-thirds of all jobless workers are unemployed for more than a year.

Coulson (2009) goes one step further and performs an empirical analysis of the correlates of long-term unemployment<sup>14</sup> in South Africa using the LFS 2001-2007 data. The author signifies that in 2001 around 39% of the unemployed are seeking employment for at least three years, but this share drops to about 28% in 2007. In terms of the ratio of long-term to short-term unemployment, it decreases as the level of educational attainment increases in both 2001 and 2007. In 2001, the ratio is the highest for African females aged 55-65 years and those residing in urban areas in Gauteng, while in 2007, the ratio is the highest for African females aged 55-65 years, residing in rural areas of the Free State province. Brick & Mlatsheni (2008)<sup>15</sup> find

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<sup>13</sup> Klasen & Woolard (1998) draw data from the Southern Africa Labour and Development Research Unit (SALDRU) survey for 1993 and rely on the OHS for 1995.

<sup>14</sup> Someone is classified as long-term unemployed if he/she is unemployed for at least three years, whereas someone is categorised as short-term unemployed if he/she is unemployed for less than three years.

<sup>15</sup> The authors investigate whether duration dependence is prevalent in the Western Cape labour markets, using data sourced from the Khayelitsha/Mitchell's Plain (KMP) Survey for the year 2000.



similar results, proposing that females have a greater probability of undergoing long-term unemployment.

The following studies draw inferences on unemployment trends since the transition, where the authors compare the OHS 1995 with the most recent LFS at the time of writing. First, Kingdon & Knight (2005) analyse unemployment for the 1995-2003 period, along with the causes, problems and policies associated with joblessness. This time around, they mostly make use of the OHS 1995 and LFS 2003b<sup>16</sup> survey and highlight that long-duration unemployment likelihood increases by 15% (from 32.5% to 37.1%). Their results too indicate that the incidence of long unemployment duration increases the most amongst Whites, those with higher education, older labour force participants, as well as in the North West and Limpopo provinces.

Oosthuizen (2006) examines some variations in the South African labour market in the post-Apartheid era, including the constraints the labour market presents in the successful attainment of shared growth. Utilising the OHS 1995 and LFS 2004b data, the author discovers that greater proportions of older individuals are jobless for relatively long periods of time. Of those unemployed persons aged between 55 and 65 years, 53% experience unemployment spells for longer than three years prior to the survey. Correspondingly, 46% and 29% of the unemployed classed in the 45-54 year and 35-44 year age cohorts, undergo unemployment for more than three years, respectively. Nonetheless, the figures confirm that long-term unemployment is likely to be an important feature of unemployment in South Africa, with critical implications for employment creation and poverty alleviation strategies.

Looking at studies analysing more than two labour surveys, Banerjee, Galiani, Levinsohn & Woolard (2006) examine why so many people are without jobs in the South African economy. With the use of data obtained from the OHS 1995-1999 and September LFS 2000-2005, they propose that long-term unemployment is a problem: of those with no previous work experience, 58.6% remain unemployed for a year or more. This figure is 68.3% for those with no employment history. More importantly, youth unemployment is a serious problem: young people make up the majority of those possessing no job-related experience. In light of chronic unemployment, this is concentrated among the younger generation.

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<sup>16</sup> In some cases, Kingdon & Knight (2005) make use of data from the OHS 1997, OHS 1999 and General Household Survey (GHS) 2003.



The study by Altman (2008), analysing the OHS 1994-1999 and September LFS 2000 and 2001 data, postulates that young people are 'queuing' for work, just to find work after the age of 30 years. To put this into perspective, about 72% of the unemployed are under 35 years and 73% under 30 years of age have no prior work experience. The involuntary nature of this situation is highlighted by the difficulty in finding a job, as 30% of unemployed persons aged below 30 years remain unemployed for more than three years, while another 30% are in search of a job for one to three years. These are individuals who should be economically active, sustaining older relatives and children; instead, a large share of youth is joining the stock of long-term unemployed.

Yu (2008) offers a meticulous analysis of the labour market trends for the 1995-2006 period, utilising the OHS 1995-1999 and LFS 2000-2006 data. The author detects that during the period under study, more than one-third of the broad unemployed struggle to find employment for more than three years, and altogether about two-thirds of them fail to attain employment for more than one year. The time gap since last worked (for those with previous work experience) is larger for those from the older age cohorts and lower educational attainment categories.

In the other study by Yu (2012), he analyses the OHS 1995-1999, LFS 2000-2007 and QLFS 2008Q1-2011Q3 data. The empirical findings reflect that a smaller proportion of the youth unemployed (particularly those between 18 and 24 years) are seeking work for more than three years and a smaller proportion of youth unemployed with prior work experience are without employment for more than three years, in contradistinction to the adult unemployed. This implies chronic unemployment is a relatively more serious problem amongst the youth.

Van der Berg & Van Broekhuizen (2012) examine graduate unemployment trends by making use of the 1995-2011 OHS, LFS and QLFS data. They indicate that most of the unemployed graduates reporting long durations of non-employment, may not be job-seekers over the respective durations, but simply women re-entering the labour market after a period of child rearing, particularly in the age range 30-39 years. Lastly, a considerable proportion of unemployed persons have no employment history.

Spaull (2013) provides an empirical overview of the quality of education in South Africa since 1994, including a discussion on the nation's schooling system. By employing the QLFS 2008Q1-2011Q4 data, the author elucidates that by 2011, more than 70% of 18-24 year-olds in unemployment have absolutely no work experience. Those in possession of a tertiary qualification, enjoy nearly a 15 percentage point rise in the percentage of youths with no job-related experience between 2008 and 2011. Although the data suggests a decline in the proportion of unemployed youths experiencing unemployment spells amounting to less than one year, the results also indicate an increase in the percentages of those unemployed for between one and five years. In fact, the proportion of job-seeking youths remaining in unemployment for more than three years rises from 42% in 2008 to 50% in 2011.

Department of Labour (2014) utilises data sourced from the QLFS 2013Q3-2013Q4 and QLFS 2014Q1. However, using the results of unemployment by duration for the first quarter of 2014, the following can be noted: more than 1.7 million people are unemployed on a short-term basis (less than 12 months), whereas more than 3.3 million people are stuck in long-term unemployment (for over one year). These amounts are greater a year prior to this, where the difference equates to 48 000 and 157 000 persons, respectively. StatsSA (2015) focuses on various aspects of those in long-term unemployment over the period 2008 to 2014.<sup>17</sup> The results propose that for the year 2008, as many as 22.4% of all unemployed persons experience spells of unemployment for more than five years and in 2014, 28.8% are in such a state of joblessness.

StatsSA (2017d) attempts to analyse the trends and patterns of annual labour market results by employing data obtained from the 2012-2017 QLFSs. The study finds that approximately 63% of those enduring short spells of unemployment in 2017 remain unemployed compared to 61.4% in 2012, while amongst the long-term unemployed, 71% are still trapped in unemployment during 2017 (up from 69.6% in 2012). The results further show that the short-term unemployed have a better chance of finding employment in comparison to the long-term unemployed. Of the short-term unemployed in QLFS 2017Q3, 17.6% manage to attain employment in QLFS 2017Q4. However, only 8.8% of the long-term unemployed manage to secure a job by 2017. The differences in terms of the transition rate into inactivity are less pronounced between the two groups, as 19.4% of the short-term unemployed and 20.2% of the long-term unemployed decide to exit the labour force, respectively.

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<sup>17</sup> StatsSA (2015) analyses data from the QLFS 2008Q3-2014Q3.

Van der Vaart (2018) takes on an alternative approach to investigate the affective experiences, attitudes toward employment, job search behaviour and job search motivation of unemployed people in South Africa. More specifically, the author explores whether different (a) psychosocial and (b) motivational profiles can be identified, using a quantitative, non-experimental, survey design as the strategy of inquiry to collect cross-sectional data. Studies one and two are restricted to only two provinces, namely North West and Gauteng, respectively. Though five groups<sup>18</sup> are considered, only three report on an unemployment duration dimension. The results validate that Optimists are 24 years or younger, possessing at least a Matric qualification and unemployed on a short-term basis (less than one year). The Discouraged, by contrast, mainly reside in Ikageng with relatively lower levels of education – the highest being Grade 11 – where more than half take on an unemployment duration exceeding four years. As a final point, the Adapted also withstand an unemployment situation exceeding two years with their highest level of educational attainment being Grade 12.

#### 2.4.1.2 Studies using panel data

Despite the availability of the NIDS panel data since 2009, it is surprising that there are hardly any studies using this data source to examine labour market dynamics.<sup>19</sup> Ebrahim, Woolard & Leibbrandt (2013) investigate which households the unemployed choose to live in and whether gaining employment enables household formation. The authors use the first three waves of the NIDS data and find that roughly 22% of those who are unemployed in all three periods live with their parents. A small portion (approximately 7%) of these individuals choose to move back in with their parents, 13% opt to stay with other relatives in search of support and roughly 9% remain with other family. Amongst these persistently unemployed persons, roughly 31% are household heads, whereas about 19% take on this position in more recent years.

Ingle & Mlatsheni (2017) examine the extent of churn in the South African youth labour market, by analysing the first four waves of the NIDS, where some of the empirical analysis relates to the issue of chronic unemployment. The authors define someone as persistently unemployed if he/she is unemployed in three to four waves. Using this definition, the authors find that the persistently unemployed are aged between 20-34 years, African females and have

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<sup>18</sup> The author divides the sample into five long-term unemployed groups, namely: (i) Optimists; (ii) Desperate; (iii) Adapted; (iv) Discouraged and (v) Withdrawn.

<sup>19</sup> National Income Dynamics Study (NIDS) data is rather extensively used to examine chronic and transitory poverty, e.g. Finn & Leibbrandt (2013); Finn, Leibbrandt & Levinsohn (2014) and Finn & Leibbrandt (2017).

incomplete levels of secondary schooling. With reference to the persistence of unemployment, roughly 4% of the youth who are unemployed in the first wave, remain in such a state across all four waves.<sup>20</sup>

Mlatsheni (2014) assesses youth unemployment and the school-to-work transition with the use of the Cape Area Panel Survey (CAPS), which is considered a youth panel dataset. The author postulates that 20% of the African population group take on employment six months after leaving school, whilst the share is slightly higher for Coloured males, equating to 35%. These figures increase to 32% and 48% respectively after a year since leaving school and after three years the figures amount to 50% and 65% respectively. A similar trend appears amongst females.

Burger & Von Fintel (2009) try to gain insights into the causes of the acceleration in the already high unemployment rate, utilising the OHS 1995-1999 and LFS 2000-2007. They construct a panel dataset<sup>21</sup> using data obtained from these surveys. The authors find that the probability of being unemployed only changes slightly between the ages of 40 and 65 years, but are more likely to experience unemployment as they grow older. However, should this cohort impact persist throughout the life cycle, persistent unemployment is likely to arise among this group, with only little relief associated with maturity.

Anand *et al.* (2015) construct a panel dataset to examine the role of unemployment in keeping inequality high in the country by using data from the third wave of the NIDS (2012). The results show that long-term unemployment reduces future employability. Moreover, the youth and females have a lower probability of obtaining employment. Similarly, those who are unemployed for short periods have a job-finding probability which is more on average than the long-term unemployed. If all individuals have a job-finding rate similar to that of the short-term unemployed, the aggregate unemployment rate will amount to 25% in steady state versus 35% if everyone has a job-finding rate similar to that of the long-term unemployed.

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<sup>20</sup> A drawback of this study is that the authors fail to examine with enough detail how different the profile of the chronically unemployed (amongst the working-age population) is in comparison to others.

<sup>21</sup> A synthetic panel is constructed to identify “the pure age, time and birth cohort correlates of unemployment, participation, employment and wages” (Burger & Von Fintel, 2009:2).

Graham, Patel, Chowa, de Vera, Khan, Williams & Mthembu (2016) examine the impact of youth employability and financial inclusion interventions.<sup>22</sup> The authors find that the mean unemployment duration since leaving school for the respondents amounts to 12.9 months, with 73% experiencing unemployment for longer than a year. Roughly 20% of these individuals are unemployed for at least 18 months after leaving school; implying that most of them experience chronic unemployment.<sup>23</sup> The average unemployment duration of the treatment group<sup>24</sup> is 12.1 months (control group: 13.5 months). For 18-25 year-olds, the mean unemployment duration equates to 11.8 months, while for those aged 25 and above, the mean duration of unemployment is 17.7 months – a marked difference. Also highly significant is the difference between metro and non-metro areas (11.6 and 15.3 months respectively).

StatsSA (2015) further adds onto the results of their cross-sectional analysis presented previously. Panel data from the QLFS is utilised to analyse transition rates from long and short-term unemployment into employment in QLFS 2014Q1-Q2.<sup>25</sup> The results indicate that females suffer from a higher incidence of long-term unemployment in comparison to their male counterparts, particularly in provinces such as the Free State, Gauteng and Mpumalanga. Also, the incidence of long-term unemployment increases for both youth and adults between 2008 and 2014 and is highest among Africans, those holding a Matric qualification and the long-term unemployed with no previous work experience. Four out of every five long-term unemployed persons are financially dependent on household members. Nonyana (2015) adopts a similar approach.<sup>26</sup> The study reports a large increase among individuals transitioning from employment to unemployment between QLFS 2013Q4 and QLFS 2014Q1.

Essers (2013) employs the NIDS (waves 1 – 2008 and 2 – 2010/11) and a quarterly panel constructed by matching QLFS cross-sections for the 2008Q1-2012Q4 period. These datasets

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<sup>22</sup> The Siyakha Youth Assets study is set up as a comparative, longitudinal research design with data collected from 48 sites nationally. In each site the data is collected from a sample of participants as they enter and exit the programme. Youth employability programmes that form part of the study include: loveLife groundBREAKERS, Fit for Life Fit for Work, Thabiso Skills Institute, Raymond Ackerman Academy, Harambee Youth Employment Accelerator, the National Youth Development Agency YouthBuild programme, Afrika Tikkun Training Services, and EOH learnerships programme.

<sup>23</sup> For purposes of this study, chronic unemployment is referred to as unemployment spells exceeding one year.

<sup>24</sup> The treatment group consists of those participants receiving the financial capability intervention, while the control group refers to those who do not.

<sup>25</sup> StatsSA (2015) uses different survey periods when constructing the QLFS panel.

<sup>26</sup> The author uses secondary panel data from StatsSA – QLFS 2013Q3 to QLFS 2014Q3 - to analyse the time it takes an unemployed person to attain employment. The panel data consists of QLFS 2013Q4 and QLFS 2014Q1. However, a sub-data is created by including only those who report to be unemployed during QLFS 2013Q3 (the first wave).



are utilised to analyse gross changes in labour market participation and to determine the demographic, geographical and job-specific characteristics associated with staying employed or unemployed in the South African economy during the zenith and aftermath of the global crisis. The study suggests that the probability of prolonged employment differs greatly between particular types of workers, where younger workers have a greater probability of transitioning out of employment. Notably, those who are trade union members and exerting their labour efforts under a written and/or permanent contract or find themselves being the household head, are more likely to remain in regular wage work and formal employment. Additionally, industries such as construction, wholesale and retail trade (excluding manufacturing) are associated with the least form of job security for male workers. Lastly, the net unemployment rates during the global crises stems more from a reduction in inflows into employment than a rise in outflows.

Ismail & Kollamparambil (2015) utilise the Labour Market Survey (2009-2010) in order to examine the role of personal characteristics in determining the duration of unemployment, as well as the likelihood of unemployment termination with transitions into wage-employment, self-employment or higher education. The results indicate that the younger the individual (male and female), the better the prospects of the youth exiting unemployment. Also, the younger an individual, the more likely they are to enjoy self-employment. This too significantly applies to men, as women take a longer time to enter self-employment. Furthermore, employment probabilities of women are more sensitive to tertiary education and women might have a greater need for human capital investment, since they have greater difficulties in finding a job. It is also highlighted that women are more likely to remain unemployed if they are living in homes where household members are income earners. Moreover, individuals who are married or have a child are significantly less likely to invest in human capital. Lastly, persons aged 12 and living in Gauteng have statistically shorter durations of unemployment. Likewise, females have significantly longer unemployment durations in Limpopo, KwaZulu-Natal and the Eastern Cape, while males seem to face significantly long unemployment durations if they are from Limpopo province.

Verick (2012) analyses the impact of the global financial crisis on the South African labour market utilising micro-data sourced from the QLFS 2008Q1-2010Q4. The results show that there has been a rise in the number of discouraged and narrowly defined unemployed persons, from an average of 1.12 million to 1.98 million and from 4.08 to 4.29 million from 2008 to

2010, respectively. The broad unemployment rate also increased the most amongst the youth, the less-educated, Africans and individuals in both hard-hit provinces (such as Gauteng) and regions where discouragement is a long-term challenge (e.g., Mpumalanga). Notably, Africans and the less-educated have a greater probability of engaging in informal employment, unemployment (only in the case of men) and becoming discouraged. Similarly, larger households are associated with lower probabilities of employment and higher likelihoods of joblessness. The study too highlights that individual labour market outcomes are strongly correlated with the status of the spouse: couples tend to be jointly discouraged. In addition, the probabilities of being unemployed and discouraged has seen the highest increase during the crisis for Africans, the poorly educated and individuals in the most affected provinces. Furthermore, evidence suggests that social transfers, including Child Support Grants (CSGs), are correlated with job search and this association becomes stronger during the period in the case of receiving the Old Age Pensions (OAP) – applying to males only and intrahousehold transfers (both sexes).

After reviewing these local studies, it is obvious that too few studies utilise panel data to monitor labour market dynamics or for the most part the chronic/transitory unemployment status of individuals over time. In fact, only one of these recent studies (Ingle & Mlatsheni, 2017) perform such an examination, through the employment of reliable NIDS data. However, it appears that the empirical analysis of the aforementioned study and those discussed above, lack some depth, as majority are restricted to youth, excluding some of the working-age population. For those studies including the entire working-age populace by applying cross-sectional data, the results should be treated with caution and cannot be taken at face value. Thus, aspects of this phenomenon remain largely unexplored. To comprehend factors that may influence an individual's unemployment situation, it is necessary to uncover different groups' labour market outcomes "in light of political, demographic and policy changes that have shaped the broader economy over time" (Burger & Von Fintel, 2009:2). Hence, the research presented in this study attempts to fill some of the gaps in the literature.

#### 2.4.2 International literature

While local studies on chronic unemployment with the aid of using panel data are rare, there are relatively more such studies internationally. Numerous international studies are conducted to investigate the extent and nature, unemployment spells, transition probabilities, consequences, predictors of chronic or long-term unemployment and other relationships.



Definitions and approaches to measure persistent unemployment differ significantly; hence, international comparisons may be difficult.

A few studies utilising cross-sectional data (Bejakovic & Gotovac, 2003<sup>27</sup>; ILO, 2007<sup>28</sup>; ILO, 2014<sup>29</sup>; Bernard, 2012<sup>30</sup>; Mitchell, 2013<sup>31</sup>; O'Connell, McGuinness & Kelly, 2012<sup>32</sup>; Institute of Statistics, 2014<sup>33</sup>; Abraham, Haltiwanger, Sandusky & Spletzer, 2016<sup>34</sup>) briefly touch on the spell duration, as well as biographic and other characteristics of those who spend a good deal of time searching for a job. The general finding is that majority of the long-term unemployed experience a lengthy spell of joblessness ranging between 24 weeks and longer than eight years. With respect to the demographic variables and other characteristics, those who spend more time looking for work are the less educated Black individuals who are recent immigrants and (un)employment insurance claimants; they have a work-limiting disability, are poor and do not have personal transport, construction workers living in metropolitan areas and persons looking for full-time work with lower reservation wages. Notably, those persons in older age groups have lengthier unemployment spells. This is in stark contrast to a study documented by Bernard (2012), as the author signifies that the more educated are the face of the long-term unemployed.

Global studies relying on panel data analysis latch on to the preceding results in an attempt to examine aspects of the chronically unemployed. Perazzi *et al.* (2017) analyse the average duration of unemployment by various socio-economic factors and outcomes for unemployed persons. The authors construct a panel based on household sample survey data compiled by the National Institute of Statistics (INE) of the Bolivarian Republic of Venezuela for the 2012-2013 period. The survey includes data on the population between 15 and 60 years of age. Their results suggest that the average duration of job searches ranges between 5.05 and 16.69<sup>35</sup>

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<sup>27</sup> The study employs data from the Croatian Employment Service (CES) and the other indicators are derived from the Labour Force Survey (LFS).

<sup>28</sup> The paper makes use of the LFS data, administrative data collected by the Employment Agency of Montenegro (EAM) and data produced by the national statistical institute.

<sup>29</sup> They utilise data from the ILO Research Department and OECD statistics.

<sup>30</sup> The main data source is the Employment Insurance Coverage Survey (EICS) from 2006 to 2010.

<sup>31</sup> The author uses 12 months of the Current Population Survey (CPS).

<sup>32</sup> The authors collect data from individuals registering an unemployment claim over a 13-week period in Ireland by using a questionnaire to create a statistical profiling model.

<sup>33</sup> Data from the Albanian Population Census is utilised in the study.

<sup>34</sup> Data from the CPS is employed in this study.

<sup>35</sup> This study considers job search durations of nearly a year or more, as a sign of long-term unemployment.

months and is greater for highly educated women<sup>36</sup>, aged 21-35 years, residing in states of Amazonas and Sucre, who are single and have occupations as craft workers/factory operators in the informal sector. Contrastingly, males who are health professionals (doctors, dentists, bioanalysts and related occupations) have an unemployment duration as long as 13.5 months, but women's job search duration in this field is the shortest.

Moreover, the data illustrates that the probability of an unemployed person becoming employed ranges between 58.7% and 62.5%. The probability of someone becoming economically inactive amounts to between 0.06% and 12.08%, while the probability of an employed individual transitioning to unemployed is quite low (4.90%). Lastly, the study shows the relationship between job search mechanisms and durations. Those individuals who make use of employment agencies gain employment more quickly than those who rely on friends and other contacts. Individuals who answer or place advertisements and those who use other alternative strategies (i.e. take out loans, purchase inputs, apply for permits, etc.) take longer than a year to secure employment.

Zedlewski & Nichols (2012)<sup>37</sup> examine how unemployment during the Great Recession affect the incomes and poverty status of families with children. Utilising 32 months of the Survey of Income and Program Participation (SIPP) 2008 panel (Wave 1 to Wave 8), they divide the sample into three mutually exclusive groups.<sup>38</sup> The authors propose that nearly 45.1% of parents who experience at least two consecutive months of unemployment experience long-term unemployment; 11.6% are unemployed on a short-term basis with at least one new spell of unemployment; 40.0% are short-term unemployed with no further unemployment, while 3.3% exit the labour force. Also, non-Hispanic Black single parents with less than (but at most) high school education and receiving Unemployment Insurance (UI), earning \$210 per capita income per month in unemployment benefits and associated with high poverty incidence are more likely to be unemployed for extended periods.

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<sup>36</sup> The results indicate that majority of those trapped in long-duration unemployment, are women with advanced technical training, seeking employment for the very first time. Additionally, the average age of those seeking employment for the first time is 26.3 years in the case of women and 23.4 years for men.

<sup>37</sup> A major drawback of this study would be the fact that they only include parents, who are aged 25 to 54 years.

<sup>38</sup> The sample is separated into three groups, namely: (i) long-term (parents remaining unemployed for at least six months), (ii) short-term with a new spell (parents securing employment before six months, but subsequently undergo at least one more spell of unemployment), and (iii) short-term with no new spell (parents who obtain employment before six months and do not undergo an additional spell of unemployment).

Larsen (2003) uses a primary data source to include a panel study for the period 1994-1999 and a supplementary cross-section study from 1999.<sup>39</sup> Firstly, he examines the unemployed's own assessments. Referring to the 1994 group<sup>40</sup>, the two most common reasons for long-term unemployment are 'Too few jobs to apply for' and 'I am too old'; both receiving 27% affirmative responses; 18% specify 'No special reason'. Turning to the 1999 group, 32% still refer to age in explaining their unemployment, only 9% indicate 'Too few jobs to apply for' and 12% indicate 'No special reason'. He then analyses the role of education, previous unemployment and age, respectively, by looking at the actual integration into the labour market of the long-term unemployed between 1994 and 1999. He indicates that 48% of the long-term unemployed in 1994 are employed in 1999; 26% are early retirees, 19% are unemployed and 7% in ordinary education or in some other way outside the labour force.<sup>41</sup> Further, he elucidates that the longest unemployment spells are attributed to women aged 50-59 years, with no vocational education, bad health and are unemployed since 1988 or earlier, while the shortest spells accrue to men aged 18-39 years, possessing advanced education, with very good health and undergoing unemployment since early 1994.

The following four studies briefly focus on the rates of transition from each labour market status, alongside additional influences or indicators. Assaad, Krafft & Yassin's (2018) assess the accuracy of labour market dynamics, using both panel and retrospective data<sup>42</sup> in the 1998, 2006 and 2012 Egypt Labor Market Panel Surveys (ELMPSs). The panel data reports that 5-6% of males are unemployed contemporaneously and females are more likely than males to exit the labour force. Focusing solely on the unemployment dynamics of individuals who ever worked, individuals who are unemployed in 2006 are more likely to report unemployment within one year (5%) or 2-5 years (12%) than those unemployed in 1998 (1% report unemployment within one year and 7% within 2-5 years). More individuals report being unemployed at some point more than 5 years out in 1998 (11%) than in 2006 (7%). Of the contemporaneous status reported in 1998 or 2006, on average, shorter durations of unemployment to date, 26 months in 1998 and 31 in 2006 is reported by respondents. However,

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<sup>39</sup> The panel study consists of a nationwide sample of long-term unemployed in 1994 who are re-interviewed in 1999, while the cross-sectional data consists of only the long-term unemployed in 1999.

<sup>40</sup> Two groups are presented for this section: (i) 1994 sample and (ii) 1999 sample.

<sup>41</sup> There are two flaws in this study: one would be that the author fails to highlight how these transitions may have taken place in terms of duration across the period under study and the second that only those aged 18-59 years are included in the study.

<sup>42</sup> Although it is possible to garner insightful information on labour market dynamics from retrospective data, the results should be treated with caution; especially when distinguishing between trustworthy information and at what level of detail (Assaad *et al.*, 2018).

those who fail to specify that they are unemployed are slightly more likely than average to experience unemployment durations of less than six months to date.

Bergin, Kelly & McGuinness (2015) adds to this by using longitudinal data from the Quarterly National Household Survey (QNHS). They assess the impact of the Great Recession on an individual's transition to and from unemployment in Ireland. Between 2006 and 2011, the average transition rate pertaining to movements between joblessness and wage employment takes a dip (nearly 10%), while transition rate from wage employment to joblessness is much higher (over 37%). There is an almost linear relationship between age and transitioning to unemployment, where younger workers have the lowest transition rates from unemployment to employment. Lastly, education is becoming an increasingly important factor in escaping unemployment, as well as reducing the risk of thereof since the recession.

Galiani & Hopenhayn (2001) use panel data from household surveys for the Buenos Aires area for the period 1989-1998. The authors estimate a Markov process for transitions from employment to unemployment (and vice versa) that allow for duration dependence. Accounting for all unemployment spells, 34% remain unemployed for more than one year over a two-year window period. An average individual entering unemployment in 1998 has a probability exceeding 0.5 of experiencing a total of three or more unemployment spells over two years and cumulative unemployment of over one-third of this two-year period. The median number of incidences increase 50% and the median cumulative duration rise 43%. More generally, the risk of unemployment is highly concentrated among smaller groups of workers in countries associated with high long-term incidence rates. However, the unemployment is more evenly spread among the population in countries showing high turnover and low long-term incidence rates.

Abraham & Shimer (2001) account for the observed increase in unemployment duration relative to the unemployment rate in the United States over the past 30 years. Their study consists of a rotating-panel aspect of the Current Population Survey (CPS) by matching workers' labour market states across months. This study stands in contradiction to many, indicating that men (rises from 8.3 weeks in 1969 to over 12 weeks in 1979) have a much longer mean unemployment duration than women (increases from 9.5 weeks in 1979 and 9.4 weeks in 1989 to 11 weeks in 1990) between 1969 and 1979. Next, the authors analyse not only transitions between employment and unemployment, but also movements in and out of

the labour force. They find that women are much less likely to exit the labour market directly from employment, a sign of increased attachment, while men are somewhat more likely to exit the labour market from unemployment and less likely to re-enter the labour force once they exit; two signs of labour force attachment.

D'Addio, De Greef & Rosholm (2002) use panel data taken from the 1993-1997 waves of the Panel Study of Belgian Households (PSBH) to investigate whether unemployment traps exist and are significant in the transition from unemployment to employment in Belgium. The data reports that those individuals associated with long-duration unemployment have a tough time (re-)integrating into the labour market and obtain lower salaries once they secure employment. Their results indicate that 6% of males and 28% of females are “trapped” financially in an unemployment state since the transition into work would be accompanied by substantial reduction in disposable income. Also, undertaking long-duration unemployment in the past, worsens the picture: nearly 31% of females and 7% of males who fail to attain employment and have undergone long-term unemployment previously, are likely not to have incentives to accept jobs.

Eurofound (2017) examines long-term youth unemployment in Europe. Roughly one-third of unemployed youth in 2016 are in search of a job for at least 12 months without success. It is found that the youth (5.5%) are harder hit by long-term unemployment against prime-age and older workers (3.9%). This share for youth increases abruptly from 3.6% to almost 8% in 2013, before its slow, but steady decrease to 5.5%. Further, utilising data from the 2011 European Quality of Life Survey (EQLS), the data illustrates that long-term unemployment harms the personal well-being of the youth, increasing their risk of social exclusion, reducing their overall life satisfaction and lowering their positive feeling about the future. Also, using data from the 2014 European Social Survey (ESS), the analysis suggests that experiences of long-term unemployment have a lifelong negative effect on earnings prospects.

Additionally, a permanent scar remains with regards to the type of jobs available, with long-term unemployed people more likely to be employed in semi-skilled or unskilled jobs. In particular, two main factors influencing a young person's probability of enduring long-term unemployment are a lack of education and work experience. Ljungqvist & Sargent (1997)<sup>43</sup> are

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<sup>43</sup> The authors use data for the 1961-1977 period from the OECD (1984a) and data for 1978 from OECD (1995).



in support of this, as their findings signify that workers who are jobless for long periods of time lose considerable amounts of skills at the time of their lay-offs and/or during their unemployment spells. In other words, their model prognosticates the following: workers who accumulate a huge amount of skills and subsequently lose these skills have a higher likelihood of experiencing long-term unemployment.

The last group of literature performs cross-country analysis. Dimian, Begu & Jablonsky (2017) use data collected from the European Statistical Office (EUROSTAT) and the ILO Statistical Information System (ILOSTAT) databases to assess the relationship between the rate of unemployment and the Gross Domestic Product (GDP) growth rate, as well as measure the impact of educational and occupational mismatches on the unemployment rate. They cover a 19-year period (1997-2015) and 28 member states<sup>44</sup> of the European Union (including United Kingdom – still a member in 2015). Their results indicate that older people, those with relatively lower levels of educational attainment and living in Italy, Malta and Spain are more likely than others to be classified as long-term unemployed and even mismatched. Further, the indexes reflecting occupational mismatch in the European Union countries show that those most affected are individuals working in elementary occupations.

Junankar (2011) uses simple econometric models using panel data to analyse the effect of the global economic crisis on unemployment and long-term unemployment in the various OECD countries. He elicits that a large proportion of the prime-age group dominate the shares of long-term unemployed. Additionally, in some instances the male share falls (in Canada and New Zealand), while in the Group of Seven (G7) countries<sup>45</sup>, males are dominant among the long-term unemployed. The data also suggests that “there is greater volatility in the proportion of long-term unemployment for younger males than younger females; middle aged and older females have higher volatility than the respectively aged males, except in the Great Recession” (Junankar, 2011:45). The findings too propose an abrupt increase in volatility of the proportion of long-term unemployment during the Great Recession for both genders for all age groups; this is with the exception of older females, as they have been hit harder in the early 1980s.

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<sup>44</sup> The member states include: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom (UK).

<sup>45</sup> The countries include: Canada, Germany, the UK, France, Italy, the United States (U.S.) and Japan.

Berger-Thomson & Roberts (2012) employ data available by the Cross-National Equivalent File (CNEF). They examine cross-country labour market dynamics with the use of panel data. They find that, on average, about one-quarter to one-third of individuals transition from a state of non-employment to employment after two years. The likelihood of attaining employment declines with age. Entry into employment generally peaks in the 26-35 year age category for males and in the younger age category for females. This reflects that this age cohort covers the key childbearing years for females, and that females are more likely to exit the labour force, in order to nurture children. The probability of 16-25 year olds entering employment is highest in Australia. The difference between the probability of exiting for men and women is, on average, greatest in the U.S. and UK.

To conclude, most international studies seem to agree that younger or older Black individuals with relatively low levels of education are more prone to persistent unemployment. Evidence from international studies suggest that naturally much of this effect is backed by reasons, such as a lack work experience, loss of skills; amongst others. At the same time, some of these international studies draw insights on transitions between labour market states, highlighting that majority of the respective samples transition from a state of unemployment in the previous period to employment in the next.

Although a large body of literature pertaining to chronic unemployment is made available, there is still limited consensus on their profile. While only three international studies<sup>46</sup> using panel data attempt to extensively examine the long-term unemployed<sup>47</sup> and only one local study uses NIDS panel data to briefly examine South Africa's chronically unemployed youth (Ingle & Mlatsheni, 2017), these studies are still not comprehensive enough in profiling the chronically unemployed. This dissertation therefore aims to fill the research gaps by comprehensively examining the chronically unemployed among the entire working-age populace with the employment of a NIDS balanced panel component, as well as drawing a comparison between the chronically/transitory unemployed and chronically employed. To

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<sup>46</sup> Larsen (2002), Zedlewski & Nichols (2012) and Perazzi *et al.* (2017).

<sup>47</sup> These international studies are flawed in the sense that some are solely based on aggregates and not the actual unemployment spell undergone by individuals across periods, have excluded segments of the population or use cross-sectional data to construct panels. Also, although data from surveys containing cross-sectional data make international comparisons easier, they are not perfect, as individuals' unemployment spells cannot be traced properly over time.



boot, this paper distinguishes between chronic and transitory unemployment, which the literature reviewed fails to uncover/reveal.

## 2.5 Causes of chronic unemployment

The unemployment rate serves as a key barometer for the purposes of determining whether the economy is expanding or deteriorating. Several factors cause unemployment to rise. Local studies discuss these main causes of unemployment, including chronic unemployment. This sub-section is therefore specifically dedicated to the underlying causes that may lengthen unemployment spells for certain individuals. There are numerous reasons for this, but Table 2.2 summarizes a few common ones that may apply to the South African populace.

Table 2.2: Causes of chronic unemployment applicable to the South African economy

Cause	Description
Legacy of Apartheid	<ul style="list-style-type: none"> <li>Deliberate exclusion of Africans (including other previously disadvantaged race groups) from the educational system and skilled occupations has led to an unprecedented influx of non-Whites into the labour market;</li> <li>These population groups (i.e. Africans) are relatively unskilled and their skills fail to match that of the current labour market (Banerjee <i>et al.</i>, 2006).</li> </ul>
Poor education and training	<ul style="list-style-type: none"> <li>South Africa's racially divided past impacted the schooling system which fails to generate the required skills for the labour market;</li> <li>Those previously disadvantaged persons remain the most severely impacted by progressive rising unemployment levels, due to inadequate education and a lack of productivity (Burger &amp; Von Fintel, 2009).</li> </ul>
Labour supply and demand mismatch	<ul style="list-style-type: none"> <li>Labour supply is affected by the increase in the number of job-seekers over the years, in particular African women;</li> <li>The South African population is a young population – more people enter the working age as compared to the number of jobs that become available in the labour market (Banerjee <i>et al.</i>, 2006).</li> </ul>
Geographical immobility	<ul style="list-style-type: none"> <li>Segmentation occurs between Apartheid-designated 'homeland' and 'non-homeland' areas, including between rural and urban areas;</li> <li>Unemployment conditions worsen for those in homeland and rural areas;</li> <li>Two-thirds of the unemployed are trapped in unemployment for more than a year, where majority are found in rural areas (Kingdon &amp; Knight, 2004).</li> </ul>
Recessionary periods and technology/automation	<ul style="list-style-type: none"> <li>During the recession, many became jobless and some industries adopt the latest technology and automation processes to replace workers, as well as cut costs, making it hard for those specialised in these fields to find employment;</li> <li>Development of labour-saving technology in some industries led to a fall in demand for labour and majority of these workers require training before being suitable for a new job in their field, that is, automation indeed substitutes for labour (Vermeulen, Kesselhut, Pyka &amp; Saviotti, 2018).</li> </ul>

Table 2.2: Continued

Cause	Description
Human capital/skills erosion	<ul style="list-style-type: none"> <li>• Unemployment spells erode skills, deteriorate professional networks, and workers become tainted by a perception of “unemployability” – lengthy unemployment spells beget longer-term unemployment;</li> <li>• The direct or indirect experience of unemployment can alter how workers plan for their futures – they are more sceptic and pessimistic about the value of education and training;</li> <li>• Workers are less willing to invest in long years of training and thus loss of skill alters those welfare costs, giving rise to a composition externality, whose magnitude varies over the cycle (Laureys, 2014).</li> </ul>
Vicious cycle of poverty	<ul style="list-style-type: none"> <li>• Poverty makes it more difficult to commute to job interviews, cover child care expenses, or maintain one’s health, making the job hunt all the harder;</li> <li>• There is a possible generational cyclical effect – implications of long-term unemployment spill over to other family members, which could be linked to the fact that unemployment is somewhat more frequent and much more protracted for poor individuals (Corcoran &amp; Hill, 1980);</li> <li>• Growing up in a context of poverty has profound negative economic consequences in the prime of life in terms of job search, i.e. family stress, reduction in income and lack of health insurance likely all contribute to poorer outcomes for children.</li> </ul>

*Source: Author’s own compilation from various sources.*

## 2.6 Conclusion

An unemployed person’s situation can depend on several factors, i.e. poverty status, educational attainment and many more. In fact, factors can be so persistent or severe, that they actually result in chronic unemployment. The theoretical framework therefore provides some insight on this. Looking at those past studies reviewed, both domestic and international studies fail to extensively examine labour market dynamics over time. Overall, most domestic studies suggest that African female individuals in the youth cohorts with relatively lower levels of educational attainment are associated with longer durations of unemployment. In particular, the majority of them either never worked or have been seeking work for at least three years. Although, progress and much effort has been made in this research area, local (and international) studies are somewhat limited and therefore not a complete national representation of South Africa’s chronic unemployment situation. Local studies merely focus their attention on evaluating the duration and incidence of unemployment using cross-sectional data and only briefly investigate chronic unemployment. On another note, none of the local panel studies revised comprehensively analyse the NIDS data to examine this phenomenon, inclusive of the entire working-age population.

Global studies are more detailed by explicitly highlighting transitions between states, the profile of those undergoing long-term unemployment by means of panel data. However, their perceptions are flawed and exclude certain segments of the population from their sample. Furthermore, analysing labour market dynamics over time by means of cross-sectional surveys (as seen in local and international literature) makes it impossible to wrestle and understand the chronic unemployment dynamics in great depth because of its tendency to analyse unemployment at one point in time. Despite all flaws in the literature reviewed, the results obtained from prior studies suggest that factors such as demographic change and improvements in education better chances of escaping long-term unemployment.

The reality is that there is a relative shortage of literature in South Africa particularly focusing on labour market dynamics, inclusive of the country's entire working-age population through the use of reliable NIDS data. Thus, this study is the first attempt (in context from reliable sources) to extensively investigate chronic unemployment in the South African context, highlighting the research gap for this dissertation. The study therefore aims to provide a detailed investigation on unemployment dynamics that the unemployment rate fails to reveal in one of the chapters to follow. This will allow the potential study to add onto the knowledge on unemployment in South Africa, by performing a thorough examination on the demographic characteristics of the chronically (un)employed and those transitioning between the two labour market states, along with a further comparison between the chronically employed and chronically unemployed group.

## CHAPTER THREE: METHODS AND DATA

### 3.1 Introduction

The main purpose of this chapter is to provide an overview of the methodology and data employed in the study. The data utilised is a national representation of the South African labour market, consisting of the first four waves (2008, 2010/11, 2012 and 2014/15) of the NIDS. The evaluation is limited to a balanced panel of respondents who were interviewed across all four waves. The aim of this study is to model labour market dynamics over the seven-year period. Thus, the panel data allows for a dynamic panel study and transitional analysis of labour market outcomes as opposed to a conventional cross-sectional analysis. In light of this, the NIDS data is crucial for the study, as interest is placed on understanding why certain individuals are continuously confined to chronic unemployment or employment. The remainder of the chapter is structured as follows: Section 3.2 provides an overview and explanation of the methodology utilised in the study, Section 3.3 examines the data employed by the study (i.e. NIDS), while Section 3.4 concludes the chapter.

### 3.2 Methodology

The empirical modelling undertaken in this study serves to examine how labour market transition probabilities are dependent on individual characteristics, i.e. educational attainment and employment history to name but a few. In NIDS, the unemployed are identified as those who report the desire to work for pay, profit or family gain in the four-week period prior to the survey. Search status is also determined by whether individuals report to have engaged in one or more activities either to search for work or to establish a business over that period. To summarise and clarify the data collected on labour market dynamics in South Africa, a quantitative analysis will be employed through the use of descriptive statistics and econometric modelling. More explicitly, various weighting options are applied throughout the study, such as panel weighting, analytical weighting, probability weighting and panel weighting. The panel weight variable is utilised throughout the entire study, while the analytical weighting option is considered when deriving all of the proportional totals. Frequency weights, however, are applied when calculating the weighted population totals in Tables 4.3 and 4.7. Finally, the probability weighting option is used to produce all regressions presented in the econometric analysis.

### 3.2.1 The labour market status breakdown

The panel solely consists of individuals aged 15-65 years – also referred to as the working-age population, who have specified labour market status and participated in all four waves. To facilitate the comparison of labour market transitions, the following five groups are identified to separate respondents according to their (un)employment persistence or movements between states, with greater emphasis placed on groups (2), (3) and (4):

- (1) **Chronically inactive:** those classified as inactive across all four waves;
- (2) **Chronic employed:** those identified as employed in all four waves (i.e. they are never unemployed or inactive in all waves);
- (3) **Chronic unemployed:** those who are classified as unemployed in three to four waves;
- (4) **Transitory unemployed:** those identified as unemployed in one to two waves;
- (5) **Others:** this includes those whose labour market status changed between inactive and employed, and these individuals are never unemployed.

Ingle & Mlatsheni (2017) adopt a similar approach in their descriptive analysis<sup>48</sup>, but this adapted method of categorisation applied to the empirical analysis is an enhancement of that utilised by them, as they rather consider individuals to be chronically employed if they have secured employment in three waves. This implies that there is a possibility that some of those who appear to be in a relatively persistent labour market state (i.e. chronically employed) may have changed states between waves, meaning that there may be some transient unemployment stigma attached to this group.

### 3.2.2 Descriptive analysis

The quantitative analysis will investigate the balanced panel<sup>49</sup> across all four waves of the NIDS data to examine the person- and household-level characteristics of the five types of labour market states. The focus of the descriptive statistics will be on:

- (A) Geographical characteristics: province, geo-type<sup>50</sup>.

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<sup>48</sup> The authors divide their sample into three groups: (i) those who enjoy wage-employment in at least three waves (persistent employment); (ii) those in a state of unemployment in at least three waves (persistent unemployment); and (iii) those participating in the labour force in at least three waves, but not (un)employed in more than two waves (thus in a state of churn).

<sup>49</sup> A potential concern for the analysis is the pattern of attrition across waves of the survey. In the second and third round of interviews, the NIDS data suffers from attrition (Ebrahim, Woolard & Leibbrandt; 2013), which at the household- and individual-level is largely due to non-response and refusal, respectively. In the interests of adjusting for attrition of respondents between each consecutive wave, a balanced panel weight will be used.

<sup>50</sup> Geo-type refers to the geographical areas of region, i.e. traditional, urban and farms, where the traditional category is known as rural areas which involves villages and hamlets and are located outside towns and cities,

- (B) Biographical characteristics: age, gender, race, educational attainment.
- (C) Labour market characteristics: labour market status, number of times the person is employed, past work experience, time gap since the unemployed person last worked.
- (D) Household characteristics: total number of employed and unemployed household members, household size.
- (E) Poverty status<sup>51</sup>: poor, non-poor.

### 3.2.3 Econometric analysis

For the econometric analysis, two regression models are run: a probit model and multinomial logistic model.

#### 3.2.3.1 Probit model

The probabilities of remaining in, or moving out of employment or unemployment are modelled with probit regression analysis to test the sensitivity of the coefficients when other covariates (i.e. gender, race, other person-level variables, and then some household-level variables) are included. According to Gujarati (2011), the probit model is one in which the error term has the normal distribution. Given the assumption of normality, the probability that  $I_i^*$  is less than or equal to  $I_i$  can be computed from the standard normal cumulative distribution function (CDF) as follows:

$$P_i = Pr(Y=1 | X) = Pr(I_i^* \leq I_i) = Pr(Z_i \leq BX) = F(BX)$$

where  $Pr(Y/X)$  means the probability that an event occurs given the values of the X variables and where Z is the standard normal variable (i.e. a normal variable with zero mean and unit variance). The standard normal CDF is denoted as  $F$ , which in the present context can be written as:

$$F(BX) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{BX} e^{-z^2/2} dz$$

Since P represents the probability of an event occurring, it is measured by the area of the standard CDF curve from  $-\infty$  to  $I_i$ . In the present context,  $F(I_i)$  is called the probit function.

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with low population density and small settlements. Urbanism refers to human settlement, usually including cities and towns, with a high population density and infrastructure of built environment.

<sup>51</sup> This study utilises the lowerbound poverty line. Inflating this poverty line forward to 2016 December prices using StatsSA's Consumer Price Index (CPI) headline index (Stats SA, 2017a), the poverty line equating to R689 per capita per month is derived. Members of the panel are classified as non-poor if their real household expenditure per capita exceeds that of the poverty line.



Although the estimation of the utility index  $BX$  and the  $B_s$  are rather complicated in the probit model, the method of maximum likelihood can be used to estimate them.

The probit regression analysis is performed to determine the characteristics of those defined as chronically inactive, chronically employed, chronically unemployed, transitory unemployed and those who move between states of employment and economic inactivity, respectively. Hence, five probit regressions will be run: (1) chronically inactive (2) chronically employed; (3) chronically unemployed; (4) transitory unemployed and (5) other. The average marginal fixed effects (MFXs) for these regressions will be calculated for completeness, aiding in the provision of a good approximation of the change in the dependent variable for a unit change in the independent variable. For each of the regressions, the dependent variable is considered to be binary and these five variables are as follows:

- **Chronically inactive:** the dummy dependent variable equates to one if the respondent is inactive in all waves;
- **Chronically employed:** the dummy dependent variable equals one if the respondent is employed in all waves;
- **Chronically unemployed:** the dummy dependent variable is equivalent to one if the respondent is unemployed in three to four waves;
- **Transitory unemployed:** the dummy dependent variable equates to one if the respondent is unemployed in one to two waves;
- **Others:** the dummy dependent variable is equivalent to one if any of the respondents change their labour market status from inactive to employed (and vice versa) across the four waves.

### 3.2.3.2 Multinomial logistic model

For the final part of the analysis, the study aims to adopt a multinomial logistic model. In a multinomial logistic regression, the independent variables can be either dichotomous (i.e. binary) or continuous (i.e. interval or ratio in scale) – Starkweather & Moske (2011). Conducting this type of regression aids in predicting categorical placement in or probability of category membership on a dependent variable based on multiple independent variables. The dependent variable takes a number of finite and discrete values that do not contain ordinal



information. As opposed to the ordered logistic model<sup>52</sup>, the multinomial logistic regression allows for more than two categories of the dependent or outcome variable and uses maximum likelihood estimation to evaluate the probability of categorical membership. This econometric model is often considered an attractive analysis because it does not assume normality, linearity and homoscedasticity.

The multinomial econometric model will be based on the final labour market status across the waves. The categorical dependent variable will be unordered and consist of the five categories as already discussed earlier, namely: (1) chronically inactive; (2) chronically employed; (3) chronically unemployed; (4) transitory unemployed; (5) other. It is important to note that these are treated as nominal variables, although they could have been treated as ordered. Intuitively, we could say that the respondent will be classified as chronically inactive; chronically employed; chronically unemployed; transitory unemployed and other based on their labour market status across the four waves. To see how this can be done, let

$Y_{ij} = 1$ , if the individual  $i$  chooses alternative  $j$  ( $j = 1, 2, 3, 4$  and  $5$  in the present case)

$Y_{ij} = 0$ , otherwise

Furthermore, let

$\pi_{ij} = Pr(Y_{ij} = 1)$

where Pr stands for probability.

Therefore,  $\pi_{i1}$ ,  $\pi_{i2}$ ,  $\pi_{i3}$ ,  $\pi_{i4}$  and  $\pi_{i5}$  represent the probabilities that individual  $i$  chooses alternative 1, 2, 3, 4 or 5 respectively – that is alternatives of chronically inactive, chronically employed, chronically unemployed, transitory unemployed and other. If these are the only alternatives an individual ought to face, then, obviously,

$$\pi_{i1} + \pi_{i2} + \pi_{i3} + \pi_{i4} + \pi_{i5} = 1$$

This is because the sum of the probabilities of mutually exclusive and exhaustive events must be 1. The  $\pi$ 's will be called the response probabilities. This implies that if any four probabilities

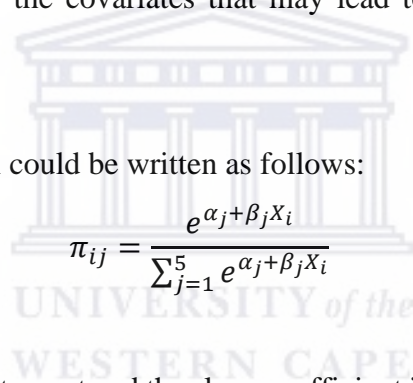
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<sup>52</sup> The ordered logistic regression is used to predict an ordinal dependent variable given one or more independent variables (Gujarati & Porter, 2009), enabling authors to uncover which of the independent variables have a statistically significant influence on the dependent variable, where the categories of the dependent variable are ranked or ordered.

are determined, the fifth one is determined automatically. In other words, we cannot estimate the five probabilities independently.

Numerous variables or factors determine the likelihood of someone being classified in a specific labour market status category. This approach aids in the prediction of labour market status of individuals over time, based on their individual-level and household-level characteristics. Some of the individual-level covariates to be included in this regression analysis would be age, gender, race, province and geographical area of residence, education and the household-level variables including the number of (un)employed in the household. These variables could be represented as  $X_2, X_3, X_4, X_5$  and so on, with the intercept denoted as  $X_1$ . These variables could be qualitative or dummy variables and some even quantitative. Also note that there will be some random factors that will also affect an individual's labour market status, which could be denoted by the error term in estimating the model. The crucial part in the investigation is to uncover the covariates that may lead to transitions examined in the regressions described above.

The multinomial logistic model could be written as follows:



$$\pi_{ij} = \frac{e^{\alpha_j + \beta_j X_i}}{\sum_{j=1}^5 e^{\alpha_j + \beta_j X_i}}$$

Notably the subscript  $j$  on the intercept and the slope coefficient is to remind one that the values of these coefficients may differ from category to category. One should also keep in mind that because more than one explanatory variable is included in the model,  $X$  will represent a vector of variables and  $\beta$  will be a vector of coefficients. The number of slope coefficients are always equivalent to the number of explanatory variables utilised in the model, where these coefficients may differ from status to status. In other words, the five probabilities estimated may have different coefficients for the regressor. In effect, we are estimating five regressions.

As indicated previously, one cannot estimate all five probabilities independently. The common practice in this model is to choose one category as the base, reference or comparison category and set its coefficient values to zero. So, if one chooses the first category of the labour market status break down and set  $\alpha_1 = 0$  and  $\beta_1 = 0$ , one obtains the following estimates of the probabilities of the five categories:

$$\pi_{i1} = \frac{1}{1 + e^{\alpha_2 + \beta_2 X_i} + e^{\alpha_3 + \beta_3 X_i} + e^{\alpha_4 + \beta_4 X_i} + e^{\alpha_5 + \beta_5 X_i}}$$

$$\pi_{i2} = \frac{e^{\alpha_2 + \beta_2 X_i}}{1 + e^{\alpha_2 + \beta_2 X_i} + e^{\alpha_3 + \beta_3 X_i} + e^{\alpha_4 + \beta_4 X_i} + e^{\alpha_5 + \beta_5 X_i}}$$

$$\pi_{i3} = \frac{e^{\alpha_3 + \beta_3 X_i}}{1 + e^{\alpha_2 + \beta_2 X_i} + e^{\alpha_3 + \beta_3 X_i} + e^{\alpha_4 + \beta_4 X_i} + e^{\alpha_5 + \beta_5 X_i}}$$

$$\pi_{i4} = \frac{e^{\alpha_4 + \beta_4 X_i}}{1 + e^{\alpha_2 + \beta_2 X_i} + e^{\alpha_3 + \beta_3 X_i} + e^{\alpha_4 + \beta_4 X_i} + e^{\alpha_5 + \beta_5 X_i}}$$

$$\pi_{i5} = \frac{e^{\alpha_5 + \beta_5 X_i}}{1 + e^{\alpha_2 + \beta_2 X_i} + e^{\alpha_3 + \beta_3 X_i} + e^{\alpha_4 + \beta_4 X_i} + e^{\alpha_5 + \beta_5 X_i}}$$

Although the same regressors appear in each probability expression, their coefficients will not be necessarily the same. However, if the probabilities are added as given in the five latter equations, one would get a value of one, as it should because five mutually exclusive categories are present in this case.

### 3.3 Data

As opposed to using cross-sectional data, this study rather intends to use panel data for its analysis, as panel data can be utilised to investigate transitions of respondents between different labour market states, over a period of time. Accordingly, the OHS, LFS and QLFS allows respondents to report their unemployment duration, but NIDS is rather preferred for purposes of this study given its adeptness to model labour market dynamics over time. The NIDS data is known as the first national panel dataset of its kind in the South African context, which aims to track the income and non-income welfare changes of individuals over time. NIDS data is collected and processed by SALDRU; a research unit primarily based at the University of Cape Town's School of Economics.

The dataset was introduced in 2008 with a national sample in excess of 28 000 individuals in 7 300 households, where the respondents are the same after a two-year interval (Casale & Posel, 2011). In other words, respondents included in NIDS are interviewed approximately every two years, to date in 2008, 2010-2011, 2012, and 2014-2015. Over time, individuals may decide to move or household compositions may change for some. As a result of this, NIDS makes provision for the recording of such events that may arise due death within a household, etc. (Leibbrandt, Woolard, & de Villiers; 2009). This is done to ensure an up-to-date database

containing this sort of information, before the next round of interviews take place. These permanently omitted panel members are then replaced as they move away.

Given that the study focuses on the working-age populace who have specified labour market status and are present in all four waves, the initial datasets indicate that 28 226 individuals are included in the first wave (2008), 34 098 in the second (2010/2011), 37 436 in the third (2012) and 42 337 in the fourth (2014/2015). However, this study restricts the analysis to a balanced panel of 8 631 respondents (equivalent to 18.77 million in weighted terms) after merging all four waves and controlling for the working-age population (aged 15-65 years) with specified labour market status, providing they exist in all four these waves. Finally, for the forthcoming empirical analysis, all results would be weighted with panel data weights, as derived by SALDRU when the fourth wave was released.

### **3.4 Limitations**

Due to the fact that the topic being explored is rather rare, this makes it hard to draw insights from previous local studies utilising panel data to examine the chronic unemployment phenomena, as a lack of prior research studies pertaining to the topic persists. Additionally, cross-sectional data analysis is found to be more common relative to unemployment, but these findings need to be interpreted carefully and with great caution, as methods are inconsistent across surveys. All of the above makes it difficult (to some extent – especially locally in Section 2.4.1) to draw comparisons and similarities on the topic at hand where the reviewing of empirical studies and theoretical framework is concerned. Lastly, access to certain relevant information or articles imposes a restriction on the research being conducted.

### **3.5 Conclusion**

Chapter Three merely focuses on discussing methodological approaches and the data to be employed in the empirical analysis to follow. An overview of the five focus groups used to compare labour market transitions or states is presented. This is followed by the empirical approach that the study intends to follow. The regression models to be carried out in the study climaxes that someone's labour market status is influenced by a range of factors that will be accounted for once performed. Last of all, in order to produce these results, the study intends to use all four waves (2008-2015) of the NIDS, with the focus being on labour market dynamics of individuals over the period under study.

## CHAPTER FOUR: EMPIRICAL FINDINGS

### 4.1 Introduction

This chapter aims to disclose a variety of indicators that may impact an individual's labour market status. All data presented in this chapter are sourced from the four waves of NIDS. With the aid of these waves, the chapter details a meticulous investigation, aiming to systematically apply statistical techniques in describing and evaluating the data obtained from the four waves. The objective of the empirical analysis is to examine the characteristics of various labour market states respondents find themselves in, with greater emphasis given to the results pertaining to the different unemployed groups. Section 4.2 performs a brief cross-sectional analysis before presenting the results of the balanced panel and a few transitional matrices. This is backed by a comparative analysis on the profound groups: the chronically employed, those who undergo spells of unemployment and those who interchange between states of employment and economic inactivity. This is done in order to gain a broader understanding of their contrasting positions in the South African labour market. Section 4.3 expands on the descriptive analysis mentioned above through econometric analysis by investigating the role of various factors that may be influential to an individual's labour market status outcome. Finally, Section 4.4 concludes the chapter.

### 4.2 Descriptive statistics

This section evaluates the descriptive statistics on the labour market dynamics of the South African working-age population, while simultaneously providing fundamental basic summaries of the balanced panel sample. In conjunction with the use of tabulated analysis, this forms the basis of the quantitative data analysis by focusing on the comparison of variables across the four waves, as well as five focus groups. It reports on the demographic, educational attainment, poverty status, household-level and (un)employment variables.

#### 4.2.1 Brief analysis of cross-sectional data<sup>53</sup>

Tables A.2 and A.3 in the Appendices are produced using OHS/LFS/QLFS data. Table A.2 presents the time gap of the unemployed since they last worked for the period 1995-2017. For

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<sup>53</sup> The data sources are household surveys conducted by StatsSA, namely OHS 1995-1999 (published annually), LFS 2000b-2007b (collected biannually) and QLFS 2008Q3-2017Q3 (gathered quarterly). These surveys aid in the collection of data on labour market activities of South African citizens ranging between 15 and 65 plus years. However, the inspection performed in this sub-section is restricted to those aged 15-65 years. This data description is excluded from Chapter Three, as it is not the main dataset for the analysis.

the period under study, it is evident that a great majority of respondents in each selected survey period have never worked before. This is followed by those who are unemployed for at least three years.<sup>54</sup> In contrast, Table A.3 shows the job-search duration of the unemployed between 1995 and 2017. The results indicate that the proportion of those in search of a job for a duration exceeding three years is the highest across all categories in each survey period, where the most recent survey (QLFS 2017Q3) amounts to an all-time high of 46.0%. This provides a sombre picture of chronic joblessness, given that nearly half of the South African working-age population are experiencing recurrent spells of non-employment.

Although, the methodologies used to distinguish the unemployed are not consistent throughout all the surveys<sup>55</sup>, a great deal of these respondents are still recounted in the unemployment statistic. Thereby, underlying the dire unemployment picture in the South African context, is the rise in chronic unemployment and an overall lengthening of the duration of unemployment spells, which are now far above their levels in earlier periods post-Apartheid. This makes the assessment of those chronically unemployed in the NIDS panel dataset an interesting one; allowing for additional subtlety in exploring South African labour market dynamics. Thus, there is real interest in what can be learned from the labour market transitions and the unemployment/employment transitions of South Africa's working-age populace. From this point onwards, the NIDS data (balanced panel) analysis will be the focus for the remainder of this chapter.

#### 4.2.2 Profile of the balanced panel

To better understand what determines labour market outcomes, a closer look at the characteristics of the balanced panel component is instructive. This sub-section analyses the various demographic, levels of educational attainment, labour market and household characteristics of the respondents included in the final sample. Supporting tables are provided, together with comparative information from the four waves of the NIDS data under review. First, the demographic composition of the South African working-age population across the four waves is presented in Table 4.1 below.

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<sup>54</sup> The trend only starts showing from OHS 1999 onward.

<sup>55</sup> Refer to Section 2.2.2 and 1.3. On the flip side, the salience of events may affect the accuracy with which they are reported (Assaad *et al.*, 2018). For instance, unemployment spells of a shorter duration (less than 6 months) may be of lower salience in comparison to unemployment spells lasting at least one year. For this reason, shorter unemployment spells are more likely to be forgotten, resulting in measurement errors.

Table 4.1: Demographic characteristics of the final sample (%)

<u>Province of residence</u>	
Western Cape	8.24
Eastern Cape	10.35
Northern Cape	2.40
Free State	5.46
KwaZulu-Natal	19.81
North West	4.95
Gauteng	24.20
Mpumalanga	8.09
Limpopo	8.19
Province of residence changed	8.31
<u>Geo-type of residence</u>	
Traditional	27.91
Urban	54.56
Farms	3.97
Geo-type changed	13.56
<u>Gender</u>	
Male	44.54
Female	55.46
<u>Population group</u>	
African	83.93
Coloured	7.68
Asian/Indian	2.40
White	5.99
<u>Age cohort at the time of Wave 4</u>	
15-24 years	12.17
25-34 years	28.90
35-44 years	24.14
45-54 years	19.31
55-65 years	15.48

Source: Own calculations using NIDS data.

Considering the spread of the South African working-age population provincially; although only 8.31% of the respondents change their province of residence between the first and fourth waves, Gauteng (24.20%) and KwaZulu-Natal (19.81%)<sup>56</sup> record the largest proportion of the weighted sample. The high frequencies could be associated with relative wealth in Gauteng

<sup>56</sup> The provincial shares of the balanced sample in Table 4.1 are consistent with the national estimates; according to StatsSA (2011), the most recent census (Census 2011) shows that Gauteng, followed by KwaZulu-Natal have the majority of the population, while the share is the lowest in Northern Cape (2.2%).



and/or population size in KwaZulu-Natal (Devey, 2003). Also, it can be observed that the provincial share is the lowest in Northern Cape (2.40%), while the share of the weighted sample in Western Cape, Limpopo and Mpumalanga (8.24%, 8.19% and 8.09% respectively) remain relatively stable across time. Nearly 14% of respondents change their geographic area of region. In contrary to the developing economy norm, the remainder of the South African working-age populace are mostly urbanised: less than 30% of all respondents reside in traditional areas across all four waves.

A higher proportion is noted for women than for men in the balanced panel at 55.46% and 44.54%, respectively. Unsurprisingly, the data demonstrates that the panel component has a strong racial dimension. It shows that Africans make up the overwhelming majority (83.93%) of the South African working-age population, whereas this share is much lower for Asians/Indians at 2.40%. Proportions for Coloureds and Whites fall in between these two extremes. To elaborate, roughly three out of every four respondents are Africans. The racial profile is similar to that of the country as a whole, reflecting “the skewed racial distribution” of the balanced panel component.

Raw ages are recorded into ten-year intervals. At the time of Wave 4, the youth (15-24 years) account for only 12.17% of the balanced panel, while the greatest share accrues to those aged between 25-34 years, peaking at 28.90%. Subsequently, this increase can be backed by the movement from the 15-24 years age cohort to the 25-34 years age cohort, due to some youth aging. Coming in second, is the 35-44 years age cohort, accounting for a proportion equivalent to 24.14%. Overall, nearly two-thirds of the respondents are aged below 45 years of age at the time of Wave 4.<sup>57</sup>

Table 4.2 reports on the different levels of education, alongside the labour market and household characteristics of the balanced panel component, for the waves under consideration. The working-age populace has gradually become more educated, with declining shares in incomplete schooling and rising shares of Matric & certificate/diploma and Degree. The share

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<sup>57</sup> StatsSA (2018a) reports the mid-year population estimates and based on their data, the male and female share equates to 48.82% and 51.18%, respectively, while Africans, Coloureds, Indians/Asians and Whites account for 80.78%, 8.79%, 2.51% and 7.83%, respectively. With regards to age, the variable is divided into five-year intervals, where data relating to the 65 year-olds are recorded in the 65-69 age category, thus inflating the proportion of those below 45 years in the working-age population (75.86%), as the denominator is automatically reduced. Nevertheless, these results run almost parallel to the distribution of the study; therefore, being a national representation of the South African labour market.

with at least Matric rises from 28.70% to 35.47%, while those with incomplete primary and secondary schooling account for about 11% and more than 47% at the time of Wave 4, respectively. Significantly, the steady decline in the share of respondents with incomplete primary and secondary education is expressed by a respective cumulative fall of 1.6 and 4.64 percentage points, implying that a greater number of years are spent on attaining education by returning to school in order to make themselves more competitive and improve future job prospects (Perazzi *et al.*, 2017). However, the increase in the number of Degree qualifications fails to keep pace with the rate of the labour force growth, while 6.24% of the net decrease among the working-age populace is comprised of individuals with incomplete primary and secondary schooling.

Table 4.2: Educational, labour market and household characteristics of the final sample (%)

	Wave 1	Wave 2	Wave 3	Wave 4
<u>Highest educational attainment</u>				
None	6.18	5.71	5.69	5.62
Incomplete primary	12.61	11.70	11.64	11.01
Incomplete secondary	52.31	50.04	47.43	47.67
Matric	20.03	20.43	20.08	17.20
Matric & certificate/diploma	6.81	9.68	12.05	14.65
Degree	1.86	2.36	2.98	3.62
Other/unspecified	0.20	0.08	0.13	0.23
<i>% with at least Matric</i>	28.70	32.47	35.11	35.47
<u>Labour market status</u>				
Inactive	32.85	39.34	34.86	30.54
Unemployed	22.08	17.73	16.96	13.05
Employees	31.29	33.68	37.69	43.53
Self-employed	6.15	4.81	5.62	6.83
Casual workers	4.09	3.36	3.87	4.81
Unclassified employed	3.54	1.09	0.99	1.23
<i>Labour force participation rate</i>	67.15	60.66	65.14	69.46
<i>Unemployment rate</i>	32.88	29.23	26.04	18.79
<u>Household size</u>				
1-5 members	64.50	60.95	63.23	66.71
6-10 members	28.59	31.98	30.55	27.42
More than 10 members	6.91	7.07	6.22	5.87
<i>Mean</i>	5.11	5.29	5.05	4.89

Table 4.2: Continued

	Wave 1	Wave 2	Wave 3	Wave 4
<u>Number of employed household members</u>				
None	47.99	52.29	50.10	48.92
One person	35.25	33.90	34.37	33.84
Two persons	11.21	9.84	10.85	12.17
More than two persons	5.54	3.97	4.67	5.07
<i>Mean</i>	<i>0.76</i>	<i>0.68</i>	<i>0.72</i>	<i>0.75</i>
<u>Number of unemployed household members</u>				
None	66.50	74.01	73.84	79.37
One person	23.72	17.22	18.70	16.38
Two persons	6.84	4.88	4.76	3.46
More than two persons	2.94	3.88	2.70	0.79
<i>Mean</i>	<i>0.47</i>	<i>0.42</i>	<i>0.37</i>	<i>0.26</i>
<u>Poverty status</u>				
Poor	48.05	45.11	36.67	28.77
Non-poor	51.95	54.89	63.33	71.23
<u>Ever worked before (unemployed only)</u>				
Yes	33.99	8.29	7.70	9.30
No	57.78	83.24	80.35	86.34
Unspecified	8.24	8.47	11.95	4.36
<u>Time gap since last worked (unemployed only, if ever worked before)</u>				
Don't know / Missing	0.84	0.00	0.00	0.00
Less than 3 months	13.48	15.09	13.70	15.49
3 months – less than 6 months	10.98	10.37	7.53	12.50
6 months – less than 9 months	6.94	18.10	13.23	7.77
9 months – less than 1 year	5.57	8.57	5.31	5.82
1 year – less than 3 years	18.50	28.01	23.05	29.10
3 years – less than 5 years	22.35	8.87	20.72	13.60
More than 5 years	21.34	10.99	16.46	15.71

*Source: Own calculations using NIDS data.*

An encouraging trend can be seen as the proportion of the balanced panel individuals who are unemployed decreases across the four waves, whereas the percentage of employees increases continuously (and constantly outperforms the other categorical dummy variables) across these waves. Interestingly, the aforementioned results are linked to the decline in the unemployment rate from 32.88% to 18.79%, at the cost of the dwindling share of the labour force participation rate from 67.15% to 60.66% in Wave 2. Having said that, this is followed by an abrupt cumulative increase of 8.8% from Wave 3 onward, where this trend is reversed.

Table 4.2 also demonstrates the household composition of the members included in the weighted sample. Referring to the table, an obvious pattern persists – the majority of the weighted sample are concentrated in households with at most five members, equating to 66.71% in Wave 4; signifying the category’s dominance. This is evident to the fact that the average number of household members hovers around or roughly amounts to five per wave, justifying the stability of this household size. At the other end of the spectrum, those households consisting of more than ten members account for the lowest proportion across all four waves, amounting to an all-time low of 5.87% in Wave 4. Strangely, majority of these households have at most one employed member or none unemployed members, where most of them have their poverty status as ‘non-poor’ in all four waves. This evidence insinuates that a larger part of these households of five consist of economically inactive persons, as can be seen by the inactive group’s significant proportion across all waves.

Looking at the last two variables in Table 4.2 relative to only those who are unemployed, the results suggest that from Wave 2 onward, approximately four out of every five respondents have never worked before at the time of the respective interview. However, the percentage of the unemployed who claim to be without work for three or more years (assuming they have some prior work experience) shows a somewhat downward trend. Contrastingly, those who report to be without work for between three and five years or more than five years are at the forefront of Wave 1, while those who have not worked between one and three years are the face of the last three waves.

#### 4.2.3 Examination of the five focus groups

In the following sub-section, the focus is shifted to a slightly different way of investigating the extent and nature of respondents in the working-age population retaining the same labour market status over time, as opposed to churn between them. More precisely, who of those employed, unemployed and economically inactive in Wave 1, remain in that same state throughout the waves. Those who manage to remain employed in all four waves are seen as participants who manage to successfully transition into the labour market. Those who are unemployed in at least three waves may be trapped in unemployment and be a particularly vulnerable group for consideration. Persons who are not economically active throughout are not available for work in any wave. Though they are not in the labour force in any wave, their reasons for not being available for work can nonetheless shed light on the situations in which respondents find themselves. Those possibly experiencing transient unemployment, may be in

a state of churn, while those alternating between inactive and (un)employed are classified as Other.

First, Table 4.3 disaggregates the number and share of the weighted sample included in each focus group for which they are classified. The data depicts that roughly 43% of the balanced panel are transitorily unemployed, followed by those who are chronically employed (22.68%). Around 22% interchange between a state of economic inactivity and employment, while 8.04% of the respondents report to be chronically inactive across all four waves. While the chronically unemployed category accounts for the smallest share of the weighted balanced panel individuals, the number is actually high (nearly one million).

Table 4.3: The labour market status breakdown of the final sample

Category	Number	Share (%)
Chronically inactive (CI)	1 510 088	8.04
Chronically employed (CE)	4 258 513	22.68
Chronically unemployed (CU)	812 637	4.33
Transitorily unemployed (TU)	7 981 726	42.51
Other	4 211 527	22.43
	18 774 491	100.00

Source: Own calculations using NIDS data.

In the following tables, the study delves deeper into the characteristics of those included in the South African working-age populace. Once again, demographic, educational and household variables are considered to determine whether they are correlated with greater labour market state persistence. Table 4.4 therefore provides a closer analysis of labour market dynamics in South Africa, by documenting the changing (or persistent) nature of (un)employment and inactivity through the utilisation of these aforesaid characteristics, for the respective groups of the working-age population at the time of Wave 4. The discussion below mostly focuses on the following three groups: those who remain employed in all four waves (CE), who are unemployed in at least three waves (CU) and those who are transitorily unemployed in one or two across the four waves (TU). The other two remaining groups, however, are referred to as CI (inactive in all four waves) and Other (those who alternate between employment and economic inactivity).

Table 4.4: Characteristics of the five focus groups at the time of Wave 4 (%)

	CI	CE	CU	TU	Other
<u>Province of residence</u>					
Western Cape	4.99	12.38	5.25	7.71	9.81
Eastern Cape	18.51	7.91	12.85	10.97	11.25
Northern Cape	2.59	2.83	3.30	2.33	2.41
Free State	5.53	6.12	9.26	5.58	5.54
KwaZulu-Natal	25.69	12.25	17.35	22.46	23.34
North West	5.20	5.59	6.55	6.12	4.99
Gauteng	18.78	36.81	24.52	25.66	24.75
Mpumalanga	5.62	9.12	10.68	9.52	7.95
Limpopo	13.09	6.99	9.49	9.65	9.89
Outside of South Africa	0.00	0.01	0.75	0.00	0.08
<u>Geo-type of residence</u>					
Traditional	46.63	15.59	42.02	37.06	33.89
Urban	47.78	76.85	55.75	59.29	60.72
Farms	5.60	7.55	1.48	3.66	5.31
Missing/Unspecified	0.00	0.01	0.75	0.00	0.08
<u>Gender</u>					
Male	27.06	61.54	35.10	40.71	42.80
Female	72.94	38.46	64.90	59.29	57.20
<u>Population group</u>					
African	84.03	73.97	93.19	89.32	81.52
Coloured	5.19	9.87	5.60	7.02	8.08
Asian/Indian	3.53	3.75	0.09	1.50	3.14
White	7.25	12.41	1.12	2.17	7.27
<u>Age cohort</u>					
15-24 years	30.03	0.53	5.47	14.06	15.26
25-34 years	13.50	15.77	50.58	38.98	24.38
35-44 years	5.30	38.73	27.88	24.04	15.60
45-54 years	13.38	30.61	13.70	15.35	18.62
55-65 years	37.79	14.36	2.36	7.57	26.13
<i>Mean</i>	<i>42.33</i>	<i>43.88</i>	<i>35.13</i>	<i>35.96</i>	<i>41.75</i>
<u>Highest educational attainment</u>					
None	15.29	3.41	1.75	3.99	8.25
Incomplete primary	19.06	9.07	6.79	9.55	13.66
Incomplete secondary	45.77	39.24	65.52	51.34	46.49
Matric	12.58	16.59	16.58	20.27	13.76
Matric & certificate/diploma	6.21	22.48	8.52	13.72	12.70
Degree	0.73	9.05	0.26	1.07	4.64
Other/unspecified	0.36	0.17	0.57	0.06	0.50
<i>With at least Matric (%)</i>	<i>19.52</i>	<i>48.12</i>	<i>25.36</i>	<i>35.06</i>	<i>31.10</i>



Table 4.4: Continued

	CI	CE	CU	TU	Other
<u>Household size</u>					
1-5 members	58.19	79.49	64.00	61.75	66.76
6-10 members	35.48	18.95	30.34	30.16	27.33
11-15 members	5.12	1.40	4.55	6.16	4.51
16-20 members	1.12	0.12	1.11	1.81	1.35
More than 20 members	0.10	0.05	0.00	0.12	0.04
<i>Mean</i>	<i>5.32</i>	<i>3.81</i>	<i>5.13</i>	<i>5.23</i>	<i>4.79</i>
<u>Number of other employed household members</u>					
None	48.39	47.69	55.31	48.93	49.09
One person	31.65	38.32	29.80	31.60	35.12
Two persons	14.91	10.89	13.27	12.93	10.84
More than two persons	5.05	3.11	1.62	6.54	4.95
<i>Mean</i>	<i>0.79</i>	<i>0.70</i>	<i>0.62</i>	<i>0.80</i>	<i>0.74</i>
<u>Number of other unemployed household members</u>					
None	76.98	83.37	79.81	77.45	79.76
One person	17.20	14.02	16.41	17.86	15.67
Two persons	4.58	2.20	2.55	3.73	4.00
More than two persons	1.24	0.41	1.22	0.97	0.57
<i>Mean</i>	<i>0.30</i>	<i>0.20</i>	<i>0.27</i>	<i>0.29</i>	<i>0.26</i>
<u>Poverty status</u>					
Poor	40.95	7.81	44.79	35.85	29.10
Non-poor	59.05	92.19	55.21	64.15	70.90

Note: CI: Chronically inactive  
 CE: Chronically employed  
 CU: Chronically unemployed  
 TU: Transitorily unemployed  
 Other: Moved between inactive and employed

Source: Own calculations using NIDS data.

Employment (CE) remains concentrated in Gauteng (36.81%), KwaZulu-Natal (12.25%) and the Western Cape (12.38%), which are the most developed provinces, accounting for 34%, 16% and 14% of GDP, respectively in the fourth quarter of 2018 (StatsSA, 2019). It is obvious that amongst the three in question, Gauteng is the most sufficient in terms of employment, allowing one out of three respondents to enjoy chronic employment. KwaZulu-Natal, by contrast, outruns the other provinces in the CI (25.69%) group, while this holds true for Gauteng in the CU (24.52%), TU (25.66%) and Other (24.75%) group. Remarkably, in the CU and TU groups, KwaZulu-Natal and Gauteng are home to over 41% of all participants. Coulson (2009) and StatsSA (2015) propose a similar result, while findings in other studies (Kingdon & Knight, 2005; StatsSA, 2015; Van der Vaart, 2018) stand in contradiction to this, indicating

that those associated with higher permanency of unemployment are more likely to live in the North West, Limpopo and Mpumalanga.

Although, adequately creating employment opportunities, these high chronic/transitory unemployment proportions could be justified by increases in South Africa's mid-year population. The country's mid-year population estimates indicate that Gauteng continues to record the largest share of the population with approximately 14.7 million people (25.4%) living in the province, while the second largest population with 11.4 million people (19.7%) remains KwaZulu-Natal (StatsSA, 2018a). Congruently, more than half of the balanced panel who are classified as CE (76.85%), CU (55.75%), TU (59.29%) and Other (60.72%) live in urban areas, which could be backed by increased migration to such areas, where abundant job opportunities are present, as well as livelihood strategies more restricted in comparison to rural areas and an increase in the size of household members (Burger & Woolard, 2005). In spite of this, the CI (47.78%) also reside in urban areas, but a great proportion (46.63%) of them is also found in traditional areas.

Looking at gender, males account for the bulk of the CE group, whilst the female share overrides that of their male counterparts, exceeding 57% for all four the CI, CU, TU and Other groups. This cannot be separated from the fact that females are more susceptible to both transitory and chronic unemployment (Coulson, 2009; Brick & Mlatsheni, 2008; Ingle & Mlatsheni, 2017; StatsSA, 2015; Perazzi *et al.*, 2017; Larsen, 2003; ILO, 2007; O'Connell *et al.*, 2012). The outcome is associated with a rapid influx of relatively unskilled women into the labour market post-1994, with increasingly more opportunities being made available to them through the years (Burger & Woolard, 2005). For this reason, female participants fail to thrive in the South African labour market, as a result of the South African labour market being more favourable to men.

Moreover, the presence of a substantial African population occupying an advanced position (surpassing 73%) between Coloureds and Whites across all groups, advocates that the racial marker is as strong in the CE group, as it is in the CU and TU groups. Though considered the most dominant racial type across groups, the African share is slightly smaller (73.97%) for the CE group. With that being said, the raw numbers of Asian/Indian and White observations in the panel component are extremely low in in the CU and TU groups. Comparison of the CE and CU group's racial composition with that of the TU group indicates that South Africa's

labour market dynamics entails something of a reshuffling of the Asian/Indian and White ethnic groups.

Table 4.4 illustrates that the labour market prospects of the working-age population differs by age cohort. Of the working-age populace in the CE group, those in older age cohorts (35-54 years) are more prone to persistent employment and less prone to chronic/temporary unemployment. As for the CI (37.79%) and Other (26.13%) group, majority find themselves between the ages 55-65 years. Of the working-age who are in the 25-34 age cohort, 50.58% and 38.98% endure chronic and transitory unemployment respectively, while less than 1% of those in the 15-24 years age cohort and only 16.3% of the youth (15-34 years) are CE. These preliminary findings already suggest that individuals from the youth cohorts are associated with chronic and transitory unemployment (Altman, 2008; StatsSA, 2015; Perazzi *et al.*, 2017; Eurofound, 2017; Graham *et al.*, 2016). Contrasting findings can also be observed by most empirical studies reviewed in Section 2.4, advocating that the persistently unemployed are older labour force participants (Coulson, 2009; Oosthuizen, 2006; StatsSA, 2015; Larsen, 2003; Dimian *et al.*, 2017; Kingdon & Knight, 2005; Junankar, 2011; Mitchell, 2013; Bernard, 2012; Institute of Statistics, 2014).

The benefits of education are evident, as 48.12% of those with at least Matric in the balanced panel are persistently employed, while slightly less than that (39.24%) with incomplete secondary education are employed persistently. The greatest proportion among education categories accrue to the latter across all five groups, equating to a high of 65.52% in the CU group. A study conducted by Zedlewski & Nichols (2012) is in support of this, while others suggest otherwise, signifying that this is more likely to be the case among the highly educated (Kingdon & Knight, 2005; Perazzi *et al.*, 2017). Likewise, the former result implies that roughly one out of every two persons with at least a Matric qualification enjoys a prolonged period of employment.

Also, the CE mostly find themselves in homes with no unemployed household members, but at most one breadwinner, where their household size consists of five members for the most (79.49%). This result aligns with that of the CI, TU and Other and their household size is distributed relatively evenly, provided that roughly two-thirds of the respondents are living in households consisting of one to five members. Other than that, majority of the CU group live

in households with no unemployed member(s), but no breadwinner amongst one to five household members.

Last but not least, across all five groups, more than half have a poverty status as non-poor, yet the non-poor share is much higher (exceeding 90%) for the CE group. Although two studies reviewed (Zedlewski & Nichols, 2012; Mitchell, 2013) beg to differ<sup>58</sup>, strikingly, more than half of those respondents in the CU and TU group are non-poor, proposing that their unemployment situation may be partially voluntary. The situation of chronic unemployment is therefore not the outcome of a lack of effort, but unrealistic holding reservation wages in excess of what they can expect to earn in the labour market (Lilenstein & Seekings, 2017). These are individuals coming from wealthier families, putting upward pressure on reservation wages and therefore wait longer before accepting a job (Yu, 2013b). To put this differently, these individuals are likely to drive themselves out of employment or even the labour force.

Above all, with greater emphasis placed on the CU, it is pertinent to note that the face of this group is non-poor African females aged 25-34 years, with incomplete secondary schooling, residing in urban areas in the Gauteng province with one to five household members, where none of them are unemployed and/or employed.

#### 4.2.4 Transition matrices

This sub-section portrays the dynamic nature of the labour market through the use of transition matrices. Table 4.5 depicts the labour market status transition matrix of the balanced panel between Waves 1 and 4. For the inactive in Wave 1, only 42.11% remain inactive in Wave 4, but 42% transition to be employed whereas 18% become unemployed at the end. In contrast, for those who are unemployed in Wave 1, roughly 20% remain unemployed, but 31% become inactive and 50% find employment at the time of Wave 4.

Slightly above 70% of employees at the time of Wave 1 remain employees in Wave 4. On the contrary, only 37.35% of the self-employed at the time of Wave 1 remain self-employed in Wave 4, but 23.10% rather become employees eventually. It is also interesting that for those initial casual workers, only 8.51% remain so at the time of Wave 4, but 41.22% transition to be employees, 27.96% become inactive and 14.05% become unemployed at the end. Overall,

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<sup>58</sup> These studies rather highlight that the persistently unemployed have high poverty rates.

nearly 35% and 128% of those who are employed at Wave 1, become unemployed and inactive in Wave 4.

Table 4.5: Labour market status transition matrix – comparing Wave 1 and Wave 4 (*row total*)

		Wave 4						Total
		Inactive	Unemployed	Employees	Self-employed	Casual workers	Unclassified employed	
Wave 1	Inactive	<b>42.11</b>	17.98	28.33	4.52	5.47	1.60	100.00
	Unemployed	31.28	<b>19.18</b>	36.50	6.44	5.24	1.36	100.00
	Employees	15.67	5.24	<b>70.41</b>	4.24	3.90	0.53	100.00
	Self-employed	28.90	5.93	23.10	<b>37.35</b>	3.33	1.39	100.00
	Casual workers	27.96	14.05	41.22	5.59	<b>8.51</b>	2.67	100.00
	Unclassified employed	55.88	9.30	29.11	2.20	2.25	<b>1.26</b>	100.00

Source: Own calculations using NIDS data.

Table 4.6: Labour market status transition matrix – comparing Wave 1 and Wave 4 (*cell total*)

		Wave 4						Total
		Inactive	Unemployed	Employees	Self-employed	Casual workers	Unclassified employed	
Wave 1	Inactive	<b>13.83</b>	5.91	9.31	1.48	1.80	0.52	32.85
	Unemployed	6.91	<b>4.24</b>	8.06	1.42	1.16	0.30	22.08
	Employees	4.90	1.64	<b>22.03</b>	1.33	1.22	0.17	31.29
	Self-employed	1.78	0.37	1.42	<b>2.30</b>	0.21	0.09	6.15
	Casual workers	1.14	0.57	1.68	0.23	<b>0.35</b>	0.11	4.09
	Unclassified employed	1.98	0.33	1.03	0.08	0.08	<b>0.04</b>	3.54
	Total	30.54	13.05	43.53	6.83	4.81	1.23	100.00

Source: Own calculations using NIDS data.

Given that the data presented in Table 4.5 and Table 4.6 is limited to only two points in time, there is no way to identify spells of employment or unemployment that may occur in the intervening waves.<sup>59</sup> In Table 4.6, each cell presents the total proportion of the balanced panel in each labour market status transition category. It is clear, however, that all persons in wage employment are not necessarily vulnerable to future spells of non-employment. Almost 14% of the balanced panel are inactive in both waves, whereas 4% are unemployed in both waves.

<sup>59</sup> Additional transition matrices are provided in the Appendices (Table A.4-A.9).

Roughly 22%, 2%, 0.4% and 0.04% remain employees, self-employed, casual workers and classed as unclassified employed in both waves, respectively. Alternatively, it can be said that 42.79% of individuals in the balanced panel retain the same labour market status between Waves 1 and 4.

#### 4.2.5 Further analysis

Through the employment of the NIDS data, attention is now directed at the performance of those who are employed at the time of Wave 4. This analysis is cut finer to exclude those who are not employed in Wave 4, in order to investigate how they fair in the preceding waves. This section therefore builds on the initial analysis and findings to create a broader understanding of the performance of this sub-sample. To facilitate the comparison – for the remainder of this sub-section – the sub-sample is separated into three mutually exclusive groups: (i) those who are employed in all four waves (Always employed); (ii) those who are in a state of churn (Moved between unemployed and employed) and (iii) those who interchange between a labour market state of economic inactivity and employment (Moved between inactive and employed).<sup>60</sup>

Table 4.7 shows the number and percentage prevalence of each of the main employment states in the sub-sample. For the entire seven-year duration, about 4.43 million (38.73%) respondents are employed in all four waves, whilst only about 2.69 million (23.52%) alternate between states of inactivity and employment across these periods. The remaining 4.32 million (37.75%) are churning between a state of employment and unemployment.

Table 4.7: Employment states of those employed in Wave 4

	<b>Frequency</b>	<b>Percentage</b>
Always employed	4 432 236	38.73
Moved between unemployed and employed	4 320 556	37.75
Moved between inactive and employed	2 692 385	23.52
<i>Total</i>	<i>11 445 177</i>	<i>100.00</i>

*Source: Own calculations using NIDS data.*

<sup>60</sup> All the forthcoming results in Sub-section 4.2.4 only include those who are employed at Wave 4 in the balanced panel.



Table 4.8 exhibits a snapshot of the number of waves respondents report to be employed for the period under study. This is done to show the extent of regular employment among them. As expected, all respondents in the Always employed group are employed in all four waves. As for those who move between unemployment and employment, just over one-third (33.67%) attain employment in one wave, while 35.58% and 30.75% enjoy employment in two and three waves, respectively. The table also captures those who move between a state of economic inactivity and employment. Nearly 30% are employed in one (27.65%) and two (29.54%) waves, while 42.81% secure employment for three waves.

Table 4.8: Number of waves employed across waves (%)

	<b>One</b>	<b>Two</b>	<b>Three</b>	<b>Four</b>	<b>Total</b>
Always employed	0.00	0.00	0.00	100.00	100.00
Moved between unemployed and employed	33.67	35.58	30.75	0.00	100.00
Moved between inactive and employed	27.65	29.54	42.81	0.00	100.00

Source: Own calculations using NIDS data.

For the two forthcoming tables, the three groups are disaggregated by occupation and industry to gain a sense of which occupations and industries absorb employed respondents and whether some of these occupations or industries appear to offer more stable employment or better outcomes. Table 4.9 shows the proportion of respondents per employment state; disaggregated by broad occupation. Analysing the table, a few observations can be made. Among those who secure employment in all four waves, the proportion of them working in highly skilled occupations is much higher (25.19%) in comparison to the other two groups. Nearly 20% of out of the 25.19% accrue to managers and professionals.

Shifting the focus to the Moved between unemployed and employed, the result is quite appalling, provided that it is the group with the largest proportion of unskilled labour (27.87%) and only about 10% of the sub-sample find themselves in highly skilled occupations. Eurofound (2017) confirms this outcome, specifying that they are relatively unskilled and semi-skilled. Furthermore, a higher proportion of them find themselves in elementary occupations (Dimian *et al.*, 2017); retaining a share slightly over 27%. A similar pattern is observed for the Moved between inactive and employed group in terms of highly skilled labour (roughly 11%).

More so, the two aforesaid groups are dominated by semi-skilled workers at a more modest rate, where roughly half of this skill level is pursued by service workers.

Table 4.9: Occupation per employment state at Wave 4 (%)

	<b>Always employed</b>	<b>Moved between unemployed and employed</b>	<b>Moved between inactive and employed</b>
Managers	7.69	2.48	1.98
Professionals	11.54	5.18	6.02
Technicians	5.96	2.74	3.18
Clerks	7.56	4.50	5.36
Service workers	15.46	22.94	19.87
Skilled agriculture	0.52	0.26	0.46
Trades	13.95	12.59	14.72
Operators	13.95	8.11	5.28
Elementary occupation	18.11	27.87	27.53
Other/unspecified	5.26	13.34	15.61
<i>Total</i>	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>
<b>Skills level</b>			
Highly skilled	25.19	10.40	11.18
Semi-skilled	51.44	48.40	45.69
Unskilled	18.11	27.87	27.53
Skilled level unknown	5.26	13.34	15.61
<i>Total</i>	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>

Source: Own calculations using NIDS data.

Table 4.10, on the other hand, illustrates the group composition of the sub-sample for the different industries. Although being the most thriving industry per respective group, it can be observed that the share of the Always employed group in the Community, social and personal services (CSP) industry is higher than in any other. Second to that, is the Wholesale and Retail sector, ranging between 13-18% across the three groups in question, where the larger proportions accrue to those who interchange between states. Contrary to this, a couple of international studies documented by Perazzi *et al.* (2017) and Mitchell (2013) postulate that

individuals enduring long-duration unemployment undoubtedly operate in the construction sector and as craft workers or factory operators, respectively.

Table 4.10: Industry per employment state at Wave 4 (%)

	<b>Always employed</b>	<b>Moved between unemployed and employed</b>	<b>Moved between inactive and employed</b>
Agriculture	5.76	4.85	6.03
Mining	5.05	2.46	1.92
Manufacturing	10.85	6.60	7.85
Utilities	1.23	1.77	1.23
Construction	6.11	7.75	9.28
Wholesale & Retail	13.60	16.97	17.99
Transport	6.43	4.69	4.37
Finance	9.85	8.65	5.53
CSP services	29.02	18.70	19.58
Private household	7.05	13.45	13.29
Other/unspecified	5.07	12.59	14.47
<i>Total</i>	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>
<b>Sector of work</b>			
Primary	10.81	7.31	7.95
Secondary	18.19	16.12	18.36
Tertiary	65.95	62.46	60.76
Sector unknown	5.07	12.59	14.47
<i>Total</i>	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>

Source: Own calculations using NIDS data.

As can be seen in Table 4.11, of those who are regularly employed, almost three-quarters (73.70%) enjoy formal employment, while more than 45% of those churning between labour market states engage in informal activities. The results are rather expected and confirmed by Perazzi *et al.* (2017), as the formal sector seeks to benefit the skilled more at the cost of the unskilled. Table 4.12 contains the summary statistics of real monthly incomes for the panel sub-component across the three groups. The mean of the real monthly income variable for the

Always employed group is triple that of the other two groups, promoting better labour market outcomes for the persistently employed. Therefore, it is clear that the regularly employed indulge in greater earnings, while the rest may be struggling to make ends meet or live below the breadline. Adding to this, the median is lower than the mean for all groups, suggesting that the data is skewed to the right; possibly due to outliers.

Table 4.11: Sector status per employment state at Wave 4

	<b>Always employed</b>	<b>Moved between unemployed and employed</b>	<b>Moved between inactive and employed</b>
Informal sector	22.13	45.67	46.67
Formal sector	73.70	42.32	39.10
Unclassified employed	4.17	12.00	14.22
<i>Total</i>	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>

Source: Own calculations using NIDS data.

Table 4.12: Summary statistics of monthly real income per employment state at Wave 4 (R)

	<b>Mean</b>	<b>Median</b>	<b>Standard deviation</b>
Always employed	9 954	5 605	20 605
Moved between unemployed and employed	3 342	2 578	3 875
Moved between inactive and employed	3 417	2 242	4 184
All employed at Wave 4	5 920	3 139	13 582

Source: Own calculations using NIDS data.

Drawing from the above findings, it is clear, however, that all respondents who are employed across all four waves are virtually invulnerable to future spells of non-employment and have better outcomes than their comparative groups. The key findings can be highlighted: Always employed persons are more likely to be highly or semi-skilled formal sector workers (i.e. managers or professionals) in the CSP industry, earning nearly R10 000 per month (in 2016 December prices) on average. The other two groups (particularly the Moved between unemployed and employed group) are more exposed to informal employment in the CSP industry requiring relatively unskilled or semi-skilled labour (i.e. elementary occupations), where they earn on average fully one-third of the Always employed group's income.

### 4.3 Econometric analysis

Although important and useful, the preceding analysis (refer to Sub-section 4.2.3) is somewhat restricted by considering only one or two variables when reporting the characteristics of the five focus groups. However, a wide variety of variables acting together will determine an individual's labour market status. Ordinary cross-tabulations are unable to deal with this issue, but fortunately it is possible to begin to disentangle the various effects econometrically. This section therefore expands on the descriptive analysis conducted prior to this section. This is done by examining the role of several factors influencing an individual's labour market status outcome. As indicated previously, probit regressions are run to estimate the MFXs of different potential influences on the likelihood of an individual transitioning between different labour market states. Finally, the study intends to model labour market dynamics through the use of a multinomial logistic model on labour market transition likelihood to supplement the aforementioned model.

#### 4.3.1 Probit regressions

Labour market status group analysis is conducted on labour market transition likelihood for the entire working-age population. Table 4.13-4.15 below and Table A.10 in the Appendix show the results of the labour market transition probit regressions for the five respective focus groups under review. The MFXs are calculated for the five regressions and these regressions account for all explanatory variables. The independent variables utilised in each of the respective regressions are the demographics (i.e. gender, race and age), geographical location (province), geographical area of region, level of educational attainment and household-level variables (i.e. number of employed or unemployed household members).

##### 4.3.1.1 Chronically inactive versus chronically employed likelihood

First of all, the results in Table 4.13 below indicate that despite racial differences and increased feminisation of South Africa's labour force post-1994, gender plays a key role in employment likelihood. Men are still consistently more likely to participate in the South African labour market provided that males are significantly 4% less likely to be chronically inactive, but significantly 16% more likely to be chronically employed. Therefore, reversing the employment gender gap remains a pressing priority. This differential is to be expected, as women continue to exit the labour force to become mothers, caregivers and homemakers (Leibbrandt *et al.*, 2010; Van der Berg & Van Broekhuizen, 2012; Brick & Mlatsheni, 2008).

Table 4.13: Probit regressions on chronically inactive and chronically employed likelihood

Independent variable	Chronically inactive			Chronically employed		
	MFX	Std Error	X-bar	MFX	Std Error	X-bar
<b>Gender</b>						
Male	-0.0435***	0.0054	0.4453	0.1558***	0.0144	0.4453
<b>Race</b>						
Coloured	-0.0048	0.0096	0.0767	0.0135	0.0279	0.0767
Indian	0.0483	0.0399	0.0240	0.0421	0.0587	0.0240
White	0.0823***	0.0365	0.0598	0.0520	0.0371	0.0598
<b>Age cohort</b>						
25-34 years	-0.0703***	0.0056	0.2890	0.3805***	0.0651	0.2890
35-44 years	-0.0845***	0.0059	0.2414	0.6684***	0.0564	0.2414
45-54 years	-0.0610***	0.0051	0.1931	0.7113***	0.0544	0.1931
55-65 years	-0.0293***	0.0058	0.1548	0.5868***	0.0702	0.1548
<b>Education</b>						
Incomplete primary	-0.0166*	0.0083	0.1101	0.0320	0.0344	0.1101
Incomplete secondary	-0.0510***	0.0129	0.4767	0.0595**	0.0292	0.4767
Matric	-0.0502***	0.0069	0.1720	0.1638***	0.0450	0.1720
Matric + Certificate/Diploma	-0.0541***	0.0060	0.1465	0.2788***	0.0509	0.1465
Degree	-0.0482***	0.0037	0.0362	0.4640***	0.0717	0.0362
Other/unspecified	0.0173	0.0512	0.0023	-0.0730	0.0945	0.0023
<b>Geo-type</b>						
Urban	-0.0182***	0.0071	0.5456	0.1101***	0.0167	0.5456
Farms	-0.0189*	0.0090	0.0397	0.3147***	0.0486	0.0397
Geo-type changed	-0.0142*	0.0066	0.1356	0.0821***	0.0288	0.1356
<b>Province</b>						
Western Cape	-0.0318***	0.0062	0.0824	0.0809**	0.0362	0.0824
Northern Cape	-0.0129	0.0085	0.0241	0.0301	0.0295	0.0241
Free State	-0.0118	0.0091	0.0546	0.0164	0.0271	0.0546
KwaZulu-Natal	-0.0191***	0.0063	0.1981	-0.0287	0.0204	0.1981
North West	-0.0190**	0.0071	0.0495	0.0528	0.0352	0.0495
Gauteng	-0.0324***	0.0076	0.2420	0.0778***	0.0271	0.2420
Mpumalanga	-0.0316***	0.0055	0.0809	0.0644**	0.0304	0.0809
Limpopo	-0.0159*	0.0073	0.0819	0.0472	0.0320	0.0819
Moved	-0.0165	0.0093	0.0831	-0.0567*	0.0267	0.0831
<b>Household-level variables</b>						
Number of other employed	0.0041	0.0026	0.7534	-0.0117*	0.0070	0.7534
Number of other unemployed	-0.0038	0.0039	0.2596	-0.0032	0.0106	0.2596
Observed probability		0.0804			0.2268	
Predicted probability (at $\bar{x}$ )		0.0428			0.1506	
Number of observations		8 631			8 631	
Probability > chi-squared		0.0000			0.0000	
Pseudo R-squared		0.1970			0.2408	

Source: Own calculations using the NIDS data.

Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Base categories: gender – female; race – African; age – 15-24 years; education – none; geo-type – traditional; province – Eastern Cape.

Whites are significantly 8% more likely to be chronically inactive than their African counterparts. This, however, changes for the chronically employed group, as the coefficient is no longer statistically significant, indicating that individuals belonging to the White population group are no more or less likely to be chronically employed than the reference group: Africans.



Although statistically insignificant, second to Whites on the chronically inactive and chronically employed probit regression(s) is/are Indians, while the Coloured population group is less likely to be chronically inactive and least likely to be chronically employed.

Moreover, the negative, statistically significant MFXs for the four age cohorts on the chronically inactive probit regression highlights that individuals aged 15 to 24 years are more likely to be chronically inactive, but then again less likely to be chronically employed. This may be linked to the fact that the vast majority of this age cohort are full-time learners or recent graduates obtaining an entry-level position in the labour market, respectively. To boot, the age cohort variable on the chronically inactive probit regression implies that an aging working-age population is associated with significantly lower chronically inactive likelihood. This could be in relation to the chronically employed probit estimate, where those aged 45-54 years (71%) are significantly most likely to be in chronic employment. A reason for this could be the fact that these persons have longer work experience, allowing them to remain in current vacancies and progress to higher positions with ease.

In addition, the effect of an individual's education is captured by the education splines included in the probit estimates. Despite the Other/unspecified categorical variables, all other education variables are statistically significant and negative on the chronically inactive probit. The negative marginal effects indicate that higher levels of educational attainment coincide with a lower probability of being chronically inactive. Excluding both the Other/unspecified and Incomplete primary categorical variables, those individuals possessing any of the remaining four educational levels, are significantly 4-5% less likely to be chronically inactive in comparison to the base category (no schooling). For the chronically employed probit regression, all splines vary positively with the probability of chronic employment, except for Other/unspecified, which has a negative coefficient and Incomplete primary which is insignificant. More specifically, those with Bachelor Degrees are significantly 46% more likely to secure longer durations of wage employment. This result suggests that the more educated the individual, the greater the likelihood of enjoying lengthy employment spells.

In terms of location, chronically inactive individuals are more likely to reside in traditional areas, while the chronic employed are less likely to reside in such areas, but significantly 11% more likely to reside in urban areas. Interestingly, those with a change in their geo-type are significantly 1% less likely and significantly 8% more likely to be chronically inactive and

chronically employed, respectively. The results too demonstrate that only Eastern Cape residents are more likely to be chronically inactive, whereas those residing in KwaZulu-Natal (statistically insignificant) have a lesser likelihood of being classed as chronically employed. Contrastingly, those residing in the Western Cape, Gauteng and Mpumalanga are significantly 6-8% more likely to enjoy lengthy spells of employment. Relative to interprovincial migration, those who changed their province of residence are significantly 6% less to be chronically employed, yet 2% less likely to be chronically inactive.

Lastly, the variable capturing all household members enjoying wage employment is significantly negative at the 10% level on the chronically employed probit regression (1%), signalling that the greater the number of other employed members in the household, the less likely individuals are to experience chronic employment. The inverse applies to the chronically inactive probit estimate (0.41% - statistically insignificant). Therefore, individuals are more likely to be chronically inactive if their household consists of more employed members. These results justify that individuals living in homes with more chronically employed household members are more likely to rely on the income of their counterparts, rather than seeking employment. Similarly, the number of other unemployed household members variable is also statistically insignificant and negative on both probit regressions, meaning that the greater the number of unemployed members in the household, the lesser the likelihood of being classified as chronically inactive and chronically employed, where both these figures amount to 0.38% and 0.32%, respectively.

In summary, the chronically inactive individuals are mainly White females, aged between 15 and 24 years, living in traditional dwellings in the Eastern Cape province, with no schooling and living in homes where more household members are employed and fewer household members are unemployed. In opposition, the face of the chronically employed are African males aged between 45 and 54 years with post-Matric qualifications (preferably Bachelor Degrees), residing on farms in the Western Cape with fewer (un)employed household members.

#### 4.3.1.2 Chronically unemployed versus transitory unemployed likelihood

Higher chronic and transitory unemployment amongst women relative to men is reflected in the negative MFXs for the male dummy in both groups (1% and 7% respectively) in Table 4.14. This is in stark contrast to the results obtained by several other authors (Mlatsheni, 2014;

Abraham & Shimer, 2001; Junankar, 2011)<sup>61</sup>, as well as the outcome produced on the chronically employed probit regression. The result emphasises the status and progression of women empowerment in the economy. This can be backed by the Department of Women's (2015) assessment over the 20 years – in spite of the plethora of progressive legislation – suggesting that the advancement of women is not rapid in terms of socio-economic empowerment and gender equality as desired, while too bearing the brunt of inequality, poverty and unemployment, yet frequently regarded as the anchors in their families.

With regards to ethnic differences, the econometric results suggest that race continues to be an important predictor of unemployment, with Coloured (0.5% against 2%), Indian (2% against 9%) and White (2% against 21%) individuals all being less likely to be chronically/transitory unemployed, respectively, in comparison to Africans. Hence, the negative coefficients for both probit estimates, with an individual's probability of being chronically/transitory unemployed amounting to 2% and almost 20% lower if they are Indian/White rather than African, respectively. The result is significant at the 10% and 1% level, respectively, where the result pertaining to the White ethnic group is in alignment with that of Coulson (2009), Ingle & Mlatsheni (2017), StatsSA (2015), Zedlewski & Nichols (2012) and Mitchell (2013). However, the results of Kingdon & Knight (2005) and Mlatsheni (2014) go against this, with their results leaning more towards the White and Coloured race group, respectively.

With reference to the age variable, the elderly age cohort shows negative coefficients, indicating that as age increases (particularly between 55 and 65 years), the probability of experiencing extended and temporal unemployment spells declines by 2% and 25%, respectively, where the coefficient of the chronically and transitory unemployed probit regression is significant at the 10% and 1% level, respectively. Thus, the most accumulated work experience afforded to elderly persons has shown less parity with their youth counterparts. Their greater tenure may allow them to secure lengthier periods of employment, thus temporal unemployment spells lean more towards the youth – a prediction related to that of the chronically employed. On the other hand, a subsequent part of the youth (25-34 years)<sup>62</sup> are significantly 9% and 5% more likely to experience transient and chronic unemployment

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<sup>61</sup> These authors sinuate that males are the face of the chronically unemployed, instead.

<sup>62</sup> The findings of Ingle & Mlatsheni (2017) illustrate that majority of their sample experiencing chronic unemployment are aged 20-34 years.

than the base category (15-24 years), proposing the transitory unemployed's recent entry into the labour market with no permanent employment, perhaps.

Table 4.14: Probit regressions on chronically unemployed and transitory unemployed likelihood

Independent variable	Chronically unemployed			Transitory unemployed		
	MFX	Std Error	X-bar	MFX	Std Error	X-bar
<b>Gender</b>						
Male	-0.0123***	0.0044	0.4453	-0.0723***	0.0164	0.4453
<b>Race</b>						
Coloured	-0.0050	0.0108	0.0767	-0.0228	0.0373	0.0767
Indian	-0.0230*	0.0060	0.0240	-0.0891	0.0750	0.0240
White	-0.0191	0.0081	0.0598	-0.2078***	0.0484	0.0598
<b>Age cohort</b>						
25-34 years	0.0534***	0.0137	0.2890	0.0888***	0.0254	0.2890
35-44 years	0.0349***	0.0135	0.2414	-0.0368	0.0269	0.2414
45-54 years	0.0142	0.0122	0.1931	-0.1258***	0.0273	0.1931
55-65 years	-0.0183*	0.0077	0.1548	-0.2453***	0.0255	0.1548
<b>Education</b>						
Incomplete primary	0.0184	0.0157	0.1101	0.0585	0.0366	0.1101
Incomplete secondary	0.0318***	0.0116	0.4767	0.0685**	0.0331	0.4767
Matric	0.0176	0.0150	0.1720	0.0703*	0.0393	0.1720
Matric + Certificate/Diploma	-0.0003	0.0112	0.1465	-0.0122	0.0402	0.1465
Degree	-0.0230	0.0068	0.0362	-0.2348***	0.0449	0.0362
Other/unspecified	0.1133*	0.1030	0.0023	-0.2975***	0.0683	0.0023
<b>Geo-type</b>						
Urban	-0.0127**	0.0060	0.5456	-0.0450**	0.0216	0.5456
Farms	-0.0256***	0.0033	0.0397	-0.1573***	0.0358	0.0397
Geo-type changed	-0.0151***	0.0046	0.1356	-0.0587**	0.0254	0.1356
<b>Province</b>						
Western Cape	-0.0047	0.0115	0.0824	-0.0212	0.0441	0.0824
Northern Cape	0.0147	0.0130	0.0241	-0.0157	0.0364	0.0241
Free State	0.0199*	0.0143	0.0546	-0.0397	0.0341	0.0546
KwaZulu-Natal	-0.0069	0.0065	0.1981	0.0301	0.0270	0.1981
North West	0.0006	0.0083	0.0495	0.0063	0.0364	0.0495
Gauteng	-0.0024	0.0086	0.2420	-0.0266	0.0317	0.2420
Mpumalanga	-0.0021	0.0084	0.0809	0.0061	0.0328	0.0809
Limpopo	-0.0108	0.0067	0.0819	-0.0368	0.0312	0.0819
Moved	0.0148	0.0143	0.0831	0.0516	0.0401	0.0831
<b>Household-level variable</b>						
Number of other employed	-0.0044*	0.0024	0.7534	0.0235***	0.0090	0.7534
Number of other unemployed	0.0003	0.0033	0.2596	0.0137	0.0126	0.2596
Observed probability		0.0433			0.4251	
Predicted probability (at $\bar{x}$ )		0.0273			0.4129	
Number of observations		8 631			8 631	
Probability > chi-squared		0.0000			0.0000	
Pseudo R-squared		0.0950			0.0807	

Source: Own calculations using the NIDS data.

Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Base categories: gender – female; race – African; age – 15-24 years; education – none; geo-type – traditional; province – Eastern Cape.

In the case of educational attainment, the results are mostly mixed. More precisely; with the exception of Other/unspecified levels of education<sup>63</sup>, the education splines suggest that individuals with incomplete secondary schooling are significantly 3% more likely to be chronically unemployed (Van der Vaart, 2018; Ingle & Mlatsheni, 2017; Larsen, 2003; Dimian *et al.*, 2017), while those with a Matric qualification (7%) have a significantly greater likelihood of finding themselves in transient unemployment. More importantly, those with Bachelor Degrees are significantly 23% less likely to be transient unemployed. Across the two groups, the marginal effects for the education splines are statistically different from each other, that is, the change in the probability of unemployment associated with an increase in the years of education is not unaffected by an individual's original level of education.

As would be expected, an individual's geographic location can be a predictor of the (un)employment status. Those classified as chronic and transitory unemployed are more likely to reside in traditional areas. The result runs parallel to that obtained by Graham *et al.* (2016). With regards to the changing of geo-type, 2% and 6% are less likely to be chronically and transitory unemployed, respectively. The coefficient is significant on both the chronically (1% level) and transitory unemployed (5% level) probit regression. The chronically and transitory unemployed probits also render no statistically significant coefficients for all provinces except the Free State on the chronically unemployed probit estimate, which amounts to approximately 2%. Thus, those living in Free State (2%) are significantly more likely to be chronically unemployed persons (Coulson, 2009; StatsSA, 2015), while those residing in KwaZulu-Natal are more likely to be transiently unemployed. In relation to movement across provinces, the coefficients are positively insignificant. The positive coefficients suggest that those who move to different provinces are more likely to be both chronically and transitory unemployed.

Finally, households consisting of more other employed (unemployed) members reduces (increases) the likelihood of being classified as chronic unemployed. Contrastingly, households consisting of more (un)employed members have a greater likelihood of experiencing transitory unemployment. To elaborate, the variable apprehending the number of employed household members, is only negatively significant (0.4%) at the 10% level on the chronically unemployed probit regression, while this is positively significant (2%) at the 1% level on the transitory

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<sup>63</sup> Greater emphasis is placed on the other educational attainment categories, given that the Other/unspecified category is insignificant and consists of a small sample of people (between 10 and 21 out of 8 631 respondents across all four waves), making it the least important category for this variable.

unemployed probit regression. Leibbrandt, Bhorat & Woolard (1999) validate the result of the chronically unemployed by stating that the level of household income declines as more household members become unemployed and as these household sizes continue to expand, poverty is more likely to persist. Hence, being a major contributor to inequality in terms of attaining employment, given that household composition could affect the labour market status of certain individuals (Zedlewski & Nichols, 2012).

To conclude, the majority of the chronically unemployed are young (25-34 years), African females. They have not completed secondary schooling and live in traditional areas in the Free State. Their households consist of fewer employed members, but more unemployed members. Likewise, the transitory unemployed group is also dominated by African females aged 25-34 years. However, these persons are more likely to possess Matric qualifications and reside in traditional areas, where their household composition is made up of more (un)employed members or a combination of employed and unemployed household members.

#### 4.3.1.3 Probit on other labour market status transition likelihood

Table A.10 in the Appendix depicts the results of the fifth probit regression. From this probit regression – although insignificant – it can be seen that White females are more likely to be classified as Other. However, those aged 35-44 years (14%) and those with a Matric qualification (8%) are significantly less likely to be classified as such. Individuals residing in traditional areas are more likely to move between states of economic inactivity and employment. Those of them who move to another geographical area of region are significantly 5% more likely to move between these labour market states. Also, the greater the number of (un)employed household members in their homes, the less likely they are to interchange between these states.

#### 4.3.2 Multinomial logistic regression

Table 4.15 displays the results of the multinomial logistic estimates of the determinants of labour market dynamics, taking into account the survey design for the entire working-age population across the four waves. Following Yu (2013b), the study reports the ratio of relative



risk (rrr) for one unit change in the independent variable, where the risk is measured as the risk of the category relative to the base category, namely the chronically inactive.<sup>64</sup>

Similar to prior empirical findings (Mlatsheni, 2014; Abraham & Shimer, 2001; Junankar, 2011), being a male increases the probabilities of being CU, CE and TU (compared to CI). More explicitly, males are significantly 6.7 times more likely to be CE than females, but only 1.8 times more likely to be CU. This figure increases to 2.3 when TU is considered. These results signify males' primary role as breadwinners in their families and some personal self-esteem issues (Lamb, 2010; Komter, 1989), which encourages them to be more active labour market participants rather than CI (baseline category). When males serve to provide financially for their family, the risk of leaving occupations can also be utilised to leverage deference (Ortiz, 2006; Schrock & Schwalbe, 2009). However, females remain more likely to be CI, given that they devote a great amount of their time to family activities (Duxbury, Higgins & Lee, 1994; Heintz, Kabeer & Mahmud, 2018; Berger-Thomson & Roberts, 2012).

Table 4.15 also demonstrates that Indian and White people have a lower access to chronic (un)employment than African people, while this only applies to Coloureds where chronic unemployment is concerned. This implies that even with the impact of Affirmative Action and Employment Equity Act to promote the employment of previously disadvantaged Africans, racial inequality remains a wrestling problem in the South African labour market. The inequality is the most severe for Whites as the odds of being CE is reduced by 60% (if one is African rather than White). Relative to the odds of being CU, it is reduced by only 13% for the Coloured population group. Furthermore, people from the Indian and White population groups have a lower likelihood of being TU, while Coloureds are more or less equally likely as the base category (Africans) to find themselves in such a state, yet 1.2 times more likely to be CU.

In view of the age cohorts, it is noticeable that those aged 35-44 years of age are most likely to be classified as CE, CU and TU when compared to the base outcome: CI. The impact of human capital endowment on wage employment is not homogeneous among the various educational levels across the three groups. For instance, the impact of incomplete primary schooling levels on wage employment (CE) is insignificant and barely significant (at the 10% level) for the TU.

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<sup>64</sup> In the forthcoming interpretations, the study will focus on the relative risk ratios in connection with the CE, CU and TU (compared to the CI). Once again, the interpretations do not focus on the Other group, provided that it is the least important one.

Table 4.15: Multinomial logistic regression on labour market dynamics (The determinants of labour market dynamics)

Independent variable	Chronically employed		Chronically unemployed		Transitory unemployed		Other	
	RRR	Std Error	RRR	Std Error	RRR	Std Error	RRR	Std Error
<b>Gender</b>								
Male	6.6813***	1.0431	1.7702***	0.3559	2.2544***	0.3086	2.4545***	0.3481
<b>Race</b>								
Coloured	1.1727	0.3282	0.8650	0.4366	1.0240	0.2404	1.1961	0.3140
Indian	0.6219	0.3303	0.0594**	0.0674	0.3957*	0.2102	0.5455	0.2911
White	0.3993**	0.1552	0.0901***	0.0746	0.1502***	0.0619	0.4251**	0.1737
<b>Age cohort</b>								
25-34 years	84.0569***	47.7980	22.1134***	7.5504	7.1333***	1.3242	4.1014***	0.8378
35-44 years	791.4549***	457.1883	41.7401***	15.7739	15.7908***	3.3091	8.7755***	2.0086
45-54 years	361.2846***	207.0213	10.2926***	4.1513	5.0396***	0.9860	5.1232***	1.0926
55-65 years	60.7572***	35.2736	0.7571	0.4303	1.0085	0.1998	2.6612***	0.5644
<b>Education</b>								
Incomplete primary	1.6461	0.5041	2.3999*	1.1383	1.5669*	0.3667	1.1864	0.2528
Incomplete secondary	3.5477***	1.1101	7.0722***	3.1917	2.9535***	0.7487	1.9207***	0.4582
Matric	10.1254***	3.7214	7.7507***	3.9136	5.1954***	1.5755	2.8542***	0.8652
Matric + Certificate/Diploma	22.5839***	9.0571	6.5717***	3.5549	6.2362***	2.1536	4.5715***	1.5815
Degree	115.7167***	76.3400	3.9793	4.9362	8.4537***	5.4227	19.6871***	12.3802
Other/unspecified	0.3296	0.4460	3.3776	4.1924	0.1919	0.2028	1.1828	1.0232
<b>Geo-type</b>								
Urban	3.1676***	0.6056	1.0223	0.2389	1.3289*	0.2070	1.3887**	0.2228
Farms	6.4417***	2.2350	0.2811**	0.1578	1.0633	0.3503	1.5797	0.5247
Geo-type changed	2.2607***	0.5573	0.7590	0.2155	1.1853	0.2210	1.6546***	0.3209
<b>Province</b>								
Western Cape	3.7649***	1.2732	2.1171	1.1535	2.3887**	0.7415	2.6906***	0.8853
Northern Cape	1.5149	0.4337	2.0480*	0.7902	1.2391	0.3063	1.2587	0.3337
Free State	1.3814	0.4018	2.1321**	0.8223	1.1740	0.2990	1.3585	0.3621
KwaZulu-Natal	1.1520	0.2567	1.1825	0.3488	1.5512**	0.2681	1.7011***	0.3118
North West	2.1057**	0.6250	1.7465	0.6069	1.6390**	0.3850	1.5059	0.3753
Gauteng	3.2992***	0.9647	2.1181*	0.8447	2.1112***	0.5585	2.1155***	0.5961
Mpumalanga	3.5335***	1.0206	2.3457**	0.8921	2.4859***	0.6213	2.3436***	0.6107
Limpopo	1.9393**	0.5434	0.9817	0.3602	1.3198	0.2794	1.6934**	0.3697
Moved	0.8382	0.3048	2.0748*	0.9036	1.4629	0.4149	1.3454	0.4122

Table 4.15: Continued

<b>Household-level variable</b>								
Number of other employed	0.8383**	0.0609	0.8089**	0.0762	0.9547	0.0556	0.8950*	0.0549
Number of other unemployed	1.0560	0.1182	1.1045	0.1554	1.1104	0.0936	1.0258	0.0944
Constant	0.0006***	0.0004	0.0095***	0.0056	0.2646***	0.0773	0.1986***	0.0592
Number of observations	8 631							
Probability > chi-squared	0.0000							
Pseudo R-squared	0.1601							

Source: Own calculations using the NIDS data.

Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Base categories: gender – female; race – African; age – 15-24 years; education – none; geo-type – traditional; province – Eastern Cape.

Base outcome: Chronically Inactive.



This implies that respondents with incomplete primary levels of schooling do not have a better chance of enjoying chronic employment than those with no education. The strong positive effect of education on the access of wage employment (CE) and burden of unemployment (CU) starts at the level of Matric & Certificate/Diploma and incomplete secondary schooling levels<sup>65</sup>, respectively. For example, respondents with university degrees have 115 times more chances of being CE than those without any education, whereas among the CU, those with Matric qualifications are significantly 7.8 times more likely to experience lengthier spells of unemployment. This result is not surprising, situating that they prefer to be unemployed rather than forever inactive (base outcome). Grippingly, those with Bachelor Degrees among the TU are significantly about 8.5 times more likely to move between employment and unemployment. Perhaps, the Bachelor Degree holders (given their qualifications) are very confident that they can afford to be temporarily unemployed for a while, as they are determined to look for a high-paying, prestigious job. These unrealistic expectations are inflated by higher reservation wages (refer to the discussion relating to Figure 2.5), resulting in prolonged periods of unemployment.

Considering the impact of location on the probability of chronic employment, results show that living on a farm significantly increases respondents' access to chronic employment, while it significantly reduces the odds of being CU by 72%. These could, perhaps, be persons who are trapped in unpaid work (Assaad *et al.*, 2018) in family agricultural businesses. Relative to the TU, those living on farms are likely to see an increase in their probability (about 1.1 times), while persons residing in urban areas are approximately 1.3 times more likely to transition between employment and unemployment. However, the relative risk ratios are only insignificant for the 'Farms' geo-type category measured against the CI. With regards to movement between geographical areas of region, the relative risk ratio is only significant for CE, thus demonstrating that those opting to relocate to a different area of region are 2.3 times more likely to secure long-term employment. Similarly, living in the Western Cape (3.8) significantly ensures the greatest probability of securing employment for lengthier durations. On the other hand, chronic unemployment and transient unemployment is mainly experienced by those residing in Mpumalanga (2.3 and 2.5 respectively). In terms of interprovincial migration, the relative risk ratios are only significant for only CU, indicating that those who moved to different provinces, are about 2.1 times more likely to be CU.

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<sup>65</sup> The relative risk ratio is insignificant for the Other/unspecified and Degree education categorical variable on the CU output; thus is ignored.

Focusing on the variables linked to the individual's family background, it is found that having more employed household members in a home, significantly decreases the probability of remaining employed for longer durations (CE – 16%) and experiencing long durations of unemployment (CU – 19%). The relative risk ratio is insignificant for the TU group. The influence of the number of unemployed household members is rather insignificantly stronger for CE, CU and TU. The greater the number of unemployed members in a home, the more likely individuals are to be CU and TU at roughly 1.1 times. In the case of the CE, the relative risk ratio is insignificant, where they are 1.1 times more likely to undergo long-duration employment.

To conclude, compared with the baseline outcome (chronically inactive individuals):

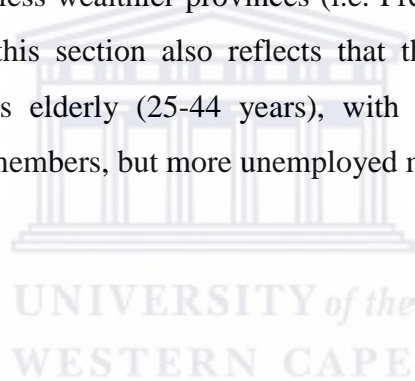
- Individuals retaining employment (CE) are more likely to be: males, Africans and Coloureds (insignificant), between the ages of 35 and 44 years, highly educated (i.e. holding Bachelor Degrees), living on farms in the Western Cape and coming from households consisting of a greater number of employed members.
- The following individuals are associated with chronic unemployment: male Africans aged 35-44 years with at least some secondary schooling, but at most Matric in tandem with a certificate/diploma, residing in urban areas (albeit insignificant) in Mpumalanga where their household composition is made up of more unemployed members (although insignificant) and fewer employed members.
- Those likely to be classified as TU are males, Africans and Coloureds (insignificant), aged 35-44 years with Bachelor Degrees, living in urban areas in Mpumalanga, where their household consists of a greater number of unemployed (insignificant) and fewer employed members (insignificant).

#### **4.4 Conclusion**

The discussion in this chapter highlights several interesting features of the various labour market states in South Africa over the period 2008-2015. First, the descriptive analysis presented in Section 4.2 reveals that those who undergo spells of unemployment (i.e. chronically and transitory unemployed) make up the largest cumulative proportion of the sample. They are more likely to operate in the informal sector and find themselves in occupations requiring relatively unskilled and semi-skilled labour (i.e. elementary occupations) in the Community, social and personal services industry, where on average their real monthly

income amounts to fully one-third of the chronically employed's (R 9 954 per month). Contrarily, those who are chronically employed are more likely to exert their efforts in the formal sector, are relatively more skilled (i.e. managers or professionals), operating in the Community, social and personal services industry as well, while too earning three times that of the chronically/transitory unemployed per month. Apart from this, the chronically (un)employed are non-poor and living in homes consisting of at most five household members. For the chronically unemployed group, majority have one unemployed household member, but none employed, where this is the opposite for the chronically employed group.

The probit regression and multinomial regression portrayed in Section 4.3 further back the descriptive statistics. The findings suggest that those who are generally more likely to experience chronic unemployment are African males/females with at least some secondary schooling, but at most a Matric qualification in tandem with an additional certificate/diploma, residing in traditional areas in less wealthier provinces (i.e. Free State or/and Mpumalanga). Furthermore, the analysis in this section also reflects that these chronically unemployed individuals consist of the less elderly (25-44 years), with their household composition consisting of fewer employed members, but more unemployed members.





## CHAPTER FIVE: CONCLUSION

### 5.1 Introduction

A large body of South African literature focuses on joblessness, concerns about the persistently high levels of unemployment and the social upheaval this might cause. Be that as it may, a deeper analysis of the numbers reveals an even scarier picture of a large segment of the working-age population suffering from unemployment spells,<sup>66</sup> as well as worrying details about the country's unemployment statistics that have not been sufficiently highlighted. Absence from wage employment can be problematic, as the already employed are undergoing a process of re-education through on-the-job training (Larsen, 2003:176), allowing them to improve human capital. For instance, becoming jobless may have a snowball effect, placing certain groups of the unemployed hindmost in the 'queue'. This forces them to face chronic spells of unemployment.

This is the first local study of its kind to offer very comprehensible outputs and extensively examine chronic unemployment using a balanced panel component<sup>67</sup> of the NIDS dataset to fill the existing research gap. Hence, the study at hand examines the characteristics of this more vulnerable segment (alongside other labour market state groups) of the working-age population that South Africa's unemployment rate fails to uncover, increasingly recognised to be a quandary deserving attention. Investigating the profile of different labour market states serves to aid against this complex nature of unemployment and in essence supports the development of unemployment (more specifically chronic unemployment) reduction policies.

### 5.2 Review of findings

The study investigates labour market dynamics of the working-age populace to explore changes in labour market status over time. The empirical findings point out that roughly 20% of those unemployed in Wave 1 retain such a status in Wave 4. In addition, 31.28% of these individuals become in active and 49.54% attain employment. Bergin *et al.* (2015) is in support of this, as a great percentage (over 37%) of their unemployed transition to a state of employment. Generally, nearly 35% and 128% of those who are employed at Wave 1, become jobless and

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<sup>66</sup> Refer to Table 4.3 (weighted figures) and Table 4.8, as it demonstrates that 33.67% and 35.58% of the balanced panel secure employment in one (chronically unemployed) and two waves (transitory unemployed), respectively.

<sup>67</sup> The study utilises the balanced component of the panel data from the four available waves of NIDS, as consideration is given to movements across labour market states over time.

inactive in Wave 4, respectively. These results are in alignment with that of StatsSA (2017d) and Perazzi *et al.* (2017), provided that their findings propose that some of the (long-term) unemployed become economically inactive. This highlights the severity of the matter, which can be accounted for, in part, by long-term unemployed persons eventually becoming discouraged for some psychological/sociological reasons and exiting the labour force (Fuchs & Weber, 2014). However, Perazzi *et al.* (2017) finds a contradictory result in relation to the movement from a state of employment to unemployment, with the proportion being quite low (4.90%) compared to that of the study.

In thorough examination of the characteristics of the different labour markets states, the initial descriptive statistics seem to indicate that chronic unemployment is more prevalent among younger African females (25-34 years). These individuals predominantly live in urban areas in KwaZulu-Natal. The descriptive results also signify that the chronically unemployed are associated with lower levels of schooling (i.e. incomplete secondary education), informal employment, relatively unskilled and semi-skilled labour (i.e. elementary workers) in the Community, social and personal service industry and lower earnings (R3 342 per month in 2016 December prices). Another important finding is that long-duration unemployment is more prevalent among the non-poor and those coming from households with a maximum of five household members, with none employed household members and one unemployed household member.

Reviewing the econometric analysis, the results of the probit model on chronically unemployed likelihood reveals that less educated (i.e. incomplete secondary schooling) and younger (25-34 years) female African individuals have a greater chance of enduring longer spells of unemployment. The geographical location of these individuals correlates to traditional areas within the Free State. In addition to this; having a greater number of employed and unemployed household members in a home, lowers and increases the probability of being chronically unemployed, respectively.

In view of the second regression model (multinomial logistic model), there is a slight variation. When compared to those chronically inactive (reference group), the chronically unemployed are more likely to be moderately older (35-44 years) male African individuals who are relatively more educated, with their highest level of educational attainment being a Matric qualification together with a certificate/diploma and the lowest being incomplete secondary

schooling. They generally reside in Mpumalanga and their household composition is made up of fewer employed, yet more other unemployed household members.

### 5.3 Conclusion

Given that this is the first local study to comprehensively examine the profile of the various labour market states in the South African context, where greater emphasis is given to the chronically unemployed group, useful insights are provided. Drawing on the empirical analysis of this study, as well as existing research on unemployment in South Africa, lower to moderate levels of educational attainment, geographic area of region, lower likelihood of (re-)integration into the labour market<sup>68</sup> and monthly income, as well as a lesser number of employed, yet more unemployed household members are key drivers of chronic unemployment, hindering future recovery prospects. Further, the study shows that chronic unemployment seriously affects the youth and some prime-aged adults. The need for policies aiding in the reduction of chronic unemployment is compelling. The diagnosis of the study yields eight main policy implications.

Arbitrarily discriminating against individuals who may have undergone spells of unemployment could be seen as an efficient method of screening high numbers of applications, but also advocates that employers are disregarding those candidates who could be suitable for the job (Raikes & Davies, 2015). Those undergoing longer durations of joblessness, have greater difficulty re-entering the labour market, due to the atrophy of skills over unemployment spells, which could result in discouragement for job-seekers (Bjørsted, Bova & Dahl, 2016). Consequently, this may be as a result of failure to keep up with the latest technology. Government should provide wage subsidies or offer a tax credit to firms, as some firms do not want to train individuals as a result of potential hiring costs. Instead of restricting the current Employment Tax Incentive (ETI) to only those aged 18-29 years, the state should rather increase the cohort slightly (to assist some prime-aged job-seekers and younger high school dropouts) or impose a restriction by means of a duration threshold. The goal is to incentivize firms to take a chance on employing the long-term unemployed without a reduction in wages. This action has been taken by Federal Government of the U.S.; one of the most well-known: the Work Opportunity Tax Credit (WOTC), which has retroactively been renewed for 2015 and extended through 2019 (Potter, 2016).

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<sup>68</sup> Refer to D'Addio *et al.* (2002) in Section 2.4.2, as well as Table 4.5 where the transition matrix shows those unemployed in Wave 1 undergo recurrent spells of unemployment and retain such a state at Wave 4.

Another reason for chronic unemployment may be the skills mismatch, restraining the chronically unemployed's success in the current labour market. This study elicits that there is a rapidly growing number of chronically unemployed individuals with post-Matric qualifications, where the problem is particularly acute amongst Africans. This may be in relation to employers' misperceptions and stereotypes about certain historically disadvantaged tertiary institutions in terms of education quality (Bhorat & Oosthuizen, 2005). Further, some job-seekers may lack the necessary soft skills, emotional maturity, communication skills and personal presentation (Yu, 2013). Thus, not only should the education system be better aligned to the labour market so that employers respect qualifications held by this susceptible group, but also provide more workforce development programmes that are locally based and seek to match employer needs with training programmes that certify participants have attained the skills necessary (i.e. soft skills) – this would help the long-term unemployed obtain jobs (Acs, 2013; Pauw *et al.*, 2008), improve the quality of their labour and enhance productivity levels, making them more employable.

South Africa's schooling system "remains largely dual as long-lasting consequences of Apartheid have not been suppressed yet" (Murtin, 2013). Hence, the government should focus its attention to the quality of education provided in the economy. The state should aim to increase and equalise educational resources across schools and improve the provision of numeracy and basic literacy skills (Murtin, 2013; Programme to Support Pro-poor Policy Development - PSPPD, 2011). In other countries (i.e. Spain), the youth are provided with mentors from the chamber of commerce and various courses are provided to meet the chronically unemployed's education and training needs (Eurofound, 2017). Once again, this allows them to "improve their general level of education, gain certification prepare for employment, self-employment or further education training" (Eurofound, 2017:57). Similarly, classroom-based learning should be coupled with the "practical experience and workplace learning, and/or followed by a placement with an employer" (Duell, Thureau & Vetter, 2016:61). If the South African government ought to adopt these approaches or follow suit, the country's education system will aid in the production of skills required by the current labour market, thus narrowing the skills mismatch gap.

Moreover, South Africa is a large and diverse country. Some geographic areas of region (i.e. traditional areas)<sup>69</sup> correlate with chronic unemployment. This could be linked to the spatial disconnect between where jobs are and where the majority of the unemployed and employed reside. This makes it extremely expensive for unemployed persons to go out and search for jobs, provided that unemployed individuals are often based in outlying traditional areas, furthest away from any employment nodes (Bhorat, 2012). Hence, labour market functioning should be improved by reducing information and transaction costs associated with the use of labour, which includes the cost incurred by an unemployed labourer trying to bus into the city to find work (Cichello, Fields & Leibbrandt, 2003). Ultimately, for these individuals not to be budget-constrained, the state can provide a transport subsidy to these chronically unemployed persons to go out into high-employment density areas to search for work (Bhorat, 2012). Similarly, the state could offer the chronically unemployed a relocation bonus to move to an area of low unemployment.

Likewise, the government should consider in-work benefit programmes which aim to support those earning relatively low incomes in low-income households. This would help prevent households from entering poverty, as well as create incentives to accept low-paid work (Duell *et al.*, 2016). These programmes should specifically be targeted at those desperately seeking employment in a context of high unemployment, as it could be useful in the reduction of unemployment and benefit dependents in terms of their future outcomes.

There is a need for a more positive and proactive policy towards the informal sector, in terms of self-employment. This sector is able to give adequate returns to both human and physical capital invested by workers and entrepreneurs (Edgren, 2005). To boot, sources of dynamism in the sector are not well understood. To execute policies to raise productivity and earnings within this sector, a better understanding of the institutions at work in the informal sector is needed (Cichello *et al.*, 2003). Government can invest in entrepreneurial programmes to equip the relatively less skilled with the required knowledge to sustain themselves. If not, the government can still hire the chronically unemployed for public work projects and directly put them back to work or even facilitate access by Non-Governmental Organisations (NGOs) to access Expanded Public Works Programme (EPWP) opportunities for the youth and implement a media campaign to advertise these job opportunities (PSPPD, 2011).

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<sup>69</sup> Refer to the summary in Section 4.4.

However, although some beyond the ages of 35 are prime-aged and elderly persons trapped in chronic unemployment, the government should rather be more realistic and focus on assisting the youth chronically unemployed. It is because the youth still have a long life ahead to try and survive in the labour market, whereas the majority of the elderly unemployed could be unemployable (Burger & Woolard, 2005). This is due to an array of unequal opportunities in the past, including low levels of education and skills, systematically disadvantaging this segment of the working-age population. Therefore, the policy suggestions discussed above should favour the youth more than their elderly counterparts.





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## APPENDIX

Table A.1: Key indicators distinguishing the unemployed in each methodology

	Methodology			
	[A]	[B]	[C]	[D]
<b>Narrow unemployed</b>				
Would accept a job	✓	✓	✓	
Would accept a job or start a business later				✓
Could start working within one week	✓	✓		
Could start working within two weeks			✓	
Could start working or a business within one week				✓
Reason for being absent from work in the last seven days, despite having a job	✓	✓		
Reason for not working in the last seven days		✓	✓	
Took some action to look for work in last four weeks	✓	✓	✓	✓
<b>Broad unemployed</b>				
Would accept a job	✓	✓	✓	
Would accept a job or start a business later				✓
Could start working within one week		✓		
Could start working within two weeks			✓	
Could start working or a business within one week				✓
Reason for being absent from work in the last seven days, despite having a job	✓	✓		
Reason for not working in the last seven days		✓	✓	
Why not working or starting a business past four weeks				✓

Source: Yu (2013b:10).

Note: [A]: OHS 1996-1999 methodology

[B]: LFS 2000 March methodology

[C]: LFS 2000 September – 2007 September methodology

[D]: QLFS methodology

Table A.2: Time gap since last worked of unemployed, 1995-2017

Survey period	Never worked	< 6 months	6-12 months	1-3 years	≥ 3 years	Unspecified	Total
OHS 1995	63.2	2.5	1.4	0.0	0.0	32.9	100.0
OHS 1996	58.6	4.6	5.9	0.0	0.0	30.8	100.0
OHS 1997	67.5	3.3	2.9	0.0	0.0	26.3	100.0
OHS 1998	59.4	4.4	4.2	0.0	0.0	32.1	100.0
OHS 1999	64.1	5.6	4.7	10.8	12.9	1.9	100.0
LFS 2000b	54.7	7.1	5.2	14.2	15.3	3.5	100.0
LFS 2001b	54.9	7.7	4.3	12.1	17.6	3.4	100.0
LFS 2002b	60.1	7.0	4.5	10.4	15.8	2.2	100.0
LFS 2003b	60.3	7.7	4.1	11.3	14.7	1.9	100.0
LFS 2004b	59.5	9.1	5.0	10.6	13.9	1.9	100.0
LFS 2005b	65.6	8.1	3.9	9.0	11.1	2.3	100.0
LFS 2006b	59.3	10.4	4.6	10.1	12.7	3.0	100.0
LFS 2007b	55.7	11.8	5.6	10.2	12.7	4.0	100.0
QLFS 2008Q3	41.5	18.7	10.7	10.9	18.3	0.0	100.0
QLFS 2009Q3	38.1	17.8	12.6	12.4	19.2	0.0	100.0
QLFS 2010Q3	43.5	14.5	10.2	12.4	19.4	0.0	100.0
QLFS 2011Q3	43.5	12.8	10.1	12.6	20.9	0.1	100.0
QLFS 2012Q3	43.1	14.4	9.7	10.6	22.1	0.0	100.0
QLFS 2013Q3	39.1	16.0	9.6	12.9	22.3	0.1	100.0
QLFS 2014Q3	38.0	16.7	10.5	12.5	22.5	0.0	100.0
QLFS 2015Q3	39.6	16.4	9.4	12.6	21.9	0.1	100.0
QLFS 2016Q3	39.7	14.9	9.8	12.7	22.9	0.1	100.0
QLFS 2017Q3	37.4	14.6	9.8	13.0	25.2	0.1	100.0

Source: Own calculations using OHS 1995-1999, LFS 2000b-2007b and QLFS 2008Q3-2017Q3 data.

Note: Not all unemployed were asked to report the time gap since they last worked in OHS 1995-1998.

Table A.3: Duration of unemployed seeking work, 1995-2017

Survey period	< 6 months	6-12 months	1-3 years	> 3 years	Unspecified	Total
OHS 1995	16.1	18.8	31.5	33.6	0.0	100.0
OHS 1996	12.1	15.1	29.1	34.8	8.9	100.0
OHS 1997	12.9	17.2	29.4	37.4	3.1	100.0
OHS 1998	14.5	16.8	27.2	36.2	5.4	100.0
OHS 1999	13.6	13.6	27.5	41.8	3.5	100.0
LFS 2000b	15.1	16.2	29.9	36.1	2.7	100.0
LFS 2001b	21.2	11.6	26.9	38.0	2.3	100.0
LFS 2002b	20.9	11.7	25.9	39.8	1.8	100.0
LFS 2003b	24.0	12.0	26.2	36.5	1.2	100.0
LFS 2004b	24.1	11.6	23.4	38.8	2.1	100.0
LFS 2005b	24.4	13.1	25.1	35.0	2.5	100.0
LFS 2006b	29.7	11.5	22.3	34.4	2.1	100.0
LFS 2007b	39.0	10.7	20.4	26.7	3.3	100.0
QLFS 2008Q3	22.7	18.0	23.3	36.0	0.1	100.0
QLFS 2009Q3	21.8	18.0	22.4	37.6	0.3	100.0
QLFS 2010Q3	17.5	16.4	24.7	41.3	0.2	100.0
QLFS 2011Q3	15.7	15.7	23.9	44.5	0.6	100.0
QLFS 2012Q3	18.1	14.6	22.2	44.5	0.6	100.0
QLFS 2013Q3	19.9	14.7	24.7	40.4	0.4	100.0
QLFS 2014Q3	19.7	14.4	23.2	42.5	0.3	100.0
QLFS 2015Q3	19.5	14.2	22.3	43.6	0.4	100.0
QLFS 2016Q3	19.5	14.1	22.9	43.3	0.3	100.0
QLFS 2017Q3	18.9	13.8	20.9	46.0	0.5	100.0

Source: Own calculations using OHS 1995-1999, LFS 2000b-2007b and QLFS 2008Q3 2017Q3 data.

Table A.4: Labour market status transition matrix – comparing Wave 1 and Wave 2 (*row total*)

		Wave 2						
		Inactive	Unemployed	Employees	Self-employed	Casual workers	Unclassified employed	Total
Wave 1	Inactive	66.36	19.27	8.60	2.16	2.25	1.36	100.00
	Unemployed	40.42	28.69	19.77	4.13	5.21	1.79	100.00
	Employees	9.27	9.07	75.57	2.55	3.29	0.24	100.00
	Self-employed	32.50	11.77	18.39	33.22	3.44	0.68	100.00
	Casual workers	35.21	19.05	32.65	6.94	5.11	1.05	100.00
	Unclassified employed	64.18	20.53	10.62	1.86	0.44	2.38	100.00

Source: Own calculations using NIDS data.

Table A.5: Labour market status transition matrix – comparing Wave 2 and Wave 3 (*row total*)

		Wave 3						
		Inactive	Unemployed	Employees	Self-employed	Casual workers	Unclassified employed	Total
Wave 2	Inactive	55.50	21.65	13.87	3.50	4.03	1.43	100.00
	Unemployed	38.20	25.83	23.64	5.18	5.54	1.62	100.00
	Employees	10.68	7.82	75.98	2.79	2.62	0.11	100.00
	Self-employed	24.87	9.25	21.31	41.69	1.99	0.88	100.00
	Casual workers	27.81	17.53	36.85	6.95	8.95	1.91	100.00
	Unclassified employed	48.37	18.18	18.11	13.53	1.81	0.00	100.00

Source: Own calculations using NIDS data.

Table A.6: Labour market status transition matrix – comparing Wave 3 and Wave 4 (*row total*)

		Wave 4						
		Inactive	Unemployed	Employees	Self-employed	Casual workers	Unclassified employed	Total
Wave 3	Inactive	54.21	16.65	18.43	4.74	4.08	1.89	100.00
	Unemployed	31.30	23.60	29.09	8.06	7.09	0.87	100.00
	Employees	9.97	6.04	76.83	2.97	3.75	0.43	100.00
	Self-employed	22.21	6.98	21.41	43.17	3.83	2.40	100.00
	Casual workers	22.64	12.00	46.75	3.94	13.11	1.57	100.00
	Unclassified employed	45.61	11.15	20.23	11.46	4.84	6.71	100.00

Source: Own calculations using NIDS data.

Table A.7: Labour market status transition matrix – comparing Wave 1 and Wave 2 (*cell total*)

		Wave 2						
		Inactive	Unemployed	Employees	Self-employed	Casual workers	Unclassified employed	Total
Wave 1	Inactive	21.80	6.33	2.82	0.71	0.74	0.45	32.85
	Unemployed	8.92	6.33	4.37	0.91	1.15	0.39	22.08
	Employees	2.90	2.84	23.64	0.80	1.03	0.08	31.29
	Self-employed	2.00	0.72	1.13	2.04	0.21	0.04	6.15
	Casual workers	1.44	0.78	1.33	0.28	0.21	0.04	4.09
	Unclassified employed	2.27	0.73	0.38	0.07	0.02	0.08	3.54
	Total	39.34	17.73	33.68	4.81	3.36	1.09	100.00

Source: Own calculations using NIDS data.

Table A.8: Labour market status transition matrix – comparing Wave 2 and Wave 3 (*cell total*)

		Wave 2						
		Inactive	Unemployed	Employees	Self-employed	Casual workers	Unclassified employed	Total
Wave 1	Inactive	21.83	8.52	5.46	1.38	1.59	0.56	39.34
	Unemployed	6.77	4.58	4.19	0.92	0.98	0.29	17.73
	Employees	3.60	2.63	25.59	0.94	0.88	0.04	33.68
	Self-employed	1.20	0.45	1.03	2.01	0.10	0.04	4.81
	Casual workers	0.93	0.59	1.24	0.23	0.30	0.06	3.36
	Unclassified employed	0.53	0.20	0.20	0.15	0.02	0.00	1.09
	Total	34.86	16.96	37.69	5.62	3.87	0.99	100.00

Source: Own calculations using NIDS data.

Table A.9: Labour market status transition matrix – comparing Wave 3 and Wave 4 (*cell total*)

		Wave 2						
		Inactive	Unemployed	Employees	Self-employed	Casual workers	Unclassified employed	Total
Wave 1	Inactive	18.90	5.80	6.43	1.65	1.42	0.66	34.86
	Unemployed	5.31	4.00	4.93	1.37	1.20	0.15	16.96
	Employees	3.76	2.28	28.96	1.12	1.41	0.16	37.69
	Self-employed	1.25	0.39	1.20	2.43	0.22	0.13	5.62
	Casual workers	0.88	0.46	1.81	0.15	0.51	0.06	3.87
	Unclassified employed	0.45	0.11	0.20	0.11	0.05	0.07	0.99
	Total	30.54	13.05	43.53	6.83	4.81	1.23	100.00

Source: Own calculations using NIDS data.



Table A.10: Probit regression on other labour market status transition likelihood

Independent variable	Other		
	MFx	Std Error	X-bar
<b>Gender</b>			
Male	-0.0179	0.0134	0.4453
<b>Race</b>			
Coloured	0.0269	0.0309	0.0767
Indian	0.0223	0.0697	0.0240
White	0.0450	0.0488	0.0598
<b>Age cohort</b>			
25-34 years	-0.0850***	0.0194	0.2890
35-44 years	-0.1319***	0.0186	0.2414
45-54 years	-0.0704***	0.0217	0.1931
55-65 years	0.0547*	0.0294	0.1548
<b>Education</b>			
Incomplete primary	-0.0229	0.0263	0.1101
Incomplete secondary	-0.0510*	0.0261	0.4767
Matric	-0.0839***	0.0261	0.1720
Matric + Certificate/Diploma	-0.0646**	0.0283	0.1465
Degree	-0.0176	0.0469	0.0362
Other/unspecified	0.2214	0.2265	0.0023
<b>Geo-type</b>			
Urban	-0.0064	0.0174	0.5456
Farms	-0.0122	0.0320	0.0397
Geo-type changed	0.0517**	0.0228	0.1356
<b>Province</b>			
Western Cape	0.0095	0.0351	0.0824
Northern Cape	-0.0075	0.0302	0.0241
Free State	0.0124	0.0302	0.0546
KwaZulu-Natal	0.0368	0.0232	0.1981
North West	-0.0100	0.0269	0.0495
Gauteng	-0.0074	0.0268	0.2420
Mpumalanga	-0.0033	0.0279	0.0809
Limpopo	0.0392	0.0275	0.0819
Moved	0.0107	0.0328	0.0831
<b>Household-level variable</b>			
Number of other employed	-0.0029	0.0073	0.7534
Number of other unemployed	-0.0092	0.0107	0.2596
Observed probability			
		0.2243	
Predicted probability (at $\bar{x}$ )			
		0.2156	
Number of observations			
		8 631	
Probability > chi-squared			
		0.0000	
Pseudo R-squared			
		0.0398	

Source: Own calculations using the NIDS data.

Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Base categories: gender – female; race – African; age – 15-24 years; education – none; geo-type – traditional; province – Eastern Cape.