DOUBLE TROUBLE: GENDER AND DISABILITY IN THE SOUTH AFRICAN LABOUR MARKET

by

Alexei McGregor

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Author: Alexei McGregor

Supervisor: Prof. Justine Burns

Faculty: Commerce

University: University of Cape Town

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ABSTRACT

Persons with disability often live on the margins of society, experiencing barriers to both labour market participation and employment. This dissertation considers the nature and magnitude of the barriers facing persons with disability within South Africa's labour market. Three important points are found. Firstly, careful consideration must be given to defining and measuring disability. If this is not done, results may be seriously biased. Secondly, the barriers to labour market participation faced by those with disability are substantial, and larger than the barriers to employment. Thirdly, disabled women are disadvantaged due to both their gender and disability status, referred to as 'double discrimination'. However, disability is a larger constraint in terms of participation among males with disability than females with disability, relative to their abled counterparts. Although disability is important, gender is the primary reason for low participation and employment among disabled women. This has important implications for South African policy design and implementation.

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DECLARATION

I, Alexei McGregor, declare that the dissertation which I hereby submit for the degree MCom at the University of Cape Town, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

Signed by candidate

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INTRODUCTION

One billion of the world's population live with some type of disability (WHO, 2011). Of these, 80% live in developing countries. Yet despite the prevalence of persons with disability, they remain one of society's most marginalised groups. Among the poorest living in developing countries, 20% have a disability (WHO, 2011).

Employment and labour force participation play essential roles in combating poverty, promoting social inclusion and preserving human dignity. This sentiment was reflected in the 1975 "Fundamental Principles of Disability":

> "*Poverty principally associated with physical impairment is caused by our [persons with disability] exclusion … due to the way employment is organised. This exclusion is linked with our [persons with disability] exclusion from participation in the social activities and provisions that make general employment possibl*e" (Barnes, 2016).

If the disabled community is to be brought forward from the margins of society, employment and participation among individuals with disability needs to be further examined. In addition, the prevalence of disability is on the rise (WHO, 2011).[1] Thus in the years ahead, understanding the barriers faced by persons with disability within the labour market will become increasingly important.

Disability is understood as resulting from the interaction between body and environment, leaving an individual unable to participate fully within society (WHO, 2011). The adoption of the Convention on the Protection and Promotion of Rights and Dignity (CRPD) of persons with disability, by the United Nations General Assembly in 2006, marked a paradigm shift in how disability is viewed from a developmental perspective. Under the CRPD, disability and the exclusion that results from disability, is viewed as a human rights failure, rather than a social welfare issue (Mizunoya & Mitra, 2013). Moving forward, it is felt that disability has a key place within the developmental debate and in measuring the success of development objectives.

Despite this, and the majority of persons with disability living in developing economies, disability has received relatively little attention within the developmental

[1] This is due in part to an aging population, but also due to the increasing prevalence of chronic health conditions such as cancer, mental health disorders, cardiovascular diseases and diabetes.

debate (Mizunoya & Mitra, 2013). For example, disability is not explicitly mentioned in the eight Millennium Development Goals (MDGs), nor in its 21 targets for achieving these goals (United Nations, 2011). This speaks more broadly to how persons with disability are too often excluded from the development narrative and remain invisible to development objectives.

Recent years have seen some progress. The 17 Sustainable Development Goals (adopted in 2015), specifically include persons with disability (United Nations Development Programme, 2016).[2] However, many questions remain about the effects of disability on the labour market when viewed through an economic lens. If basic human rights are to be upheld and maintained, thereby allowing for the possibility of inclusive development, addressing this gap in the literature is key. This dissertation attempts to make a contribution to this literature in a South African context.

South Africa has established a strong legislative framework to combat and prevent the marginalisation of individuals with disability. Most of this legislation was established in the early years after democracy, between 1992 and 2000, with the post-apartheid period seeing an important shift towards greater recognition regarding disability.[3] Persons with disability are specifically stipulated in South Africa's 1996 Constitution, thereby safeguarding their rights to equal opportunity and ensuring that they are protected against discrimination (Nhlapo, Watermeyer & Schneider, 2006).[4]

The 1998 Employment Equity Act (EEA) is the principal legislation that protects the rights of marginalised groups, including persons with disability, in the workplace. It aims

[2] 11 of the SDG's 169 targets specifically refer to persons with disability.

[3] This was facilitated by an alliance, formed during the transition period, between Disabled People South Africa (DPSA) and the African National Congress (ANC), which provided persons with disability with a greater voice in designing South Africa's future. This active role of those with disability during the transition period played an essential part in ensuring that the disabled were specifically stipulated in the 1996 Constitution.

[4] The White Paper on the Integrated National Disability Strategy (INDS) (1997) took its cues from the Constitution in setting a blueprint for integrated and inclusive disability legislation and policy. Its primary objective was to integrate disability issues within government's planning, programmes and development strategies. The INDS was later updated by the White Paper on the Rights of Persons with Disabilities (WPRPD) (2015), which hoped to further accelerate policy transformation with regard to equality, inclusion and integration. These white papers are not designed to be sector specific, nor are they a policy shift. Rather the white papers provide a broad platform for directing change across the public, private and civil sectors.

to create a workforce representative of the general population.[5] The EEA protects persons with disability from discrimination and prejudice in the work place or during the hiring process.[6] Furthermore, statutory provisions bind state bodies and government departments to a 2% disability quota. The target was originally implemented in 2005 but, given the lack of progress, this same target remained unchanged in 2015. Furthermore, the National Skills Development Strategy requires that 4% of traineeship positions go to those with disability (Tesemma, 2014), thereby providing the opportunity for the disabled to become more competitive in the labour market.

Despite the laudable goals, such legislation has been met with limited success. The 7.5% of South Africans with disability[7] continue to face significant barriers in the labour market that are not experienced by the abled, culminating in low labour force participation and employment (Stats SA, 2014). The Commission for Employment Equity (Department of Labour, 2016) found that persons with disability accounted for only 1.2% of the workforce in 2015.

The high prevalence of poverty and dependency within the disabled population can be attributed partly to these low levels of economic activity and poor success within the labour market among persons with disability (Graham, Moodley, Ismail, Munsaka, Ross & Schneider, 2014). Disabled women in particular face barriers that hinder their labour market participation and success as they experience the disadvantages associated with both their disability and their gender (WHO, 2011).

This dissertation examines the effects of disability on the probability of being economically active and employed in South Africa. In doing so, four definitions of disability are used: Broad, Wide, UN and Narrow disability.[8] These definitions vary in inclusivity and the severity of disability required to be classified as 'disabled'. Measuring

[5]To meet the EEA requirements, the Code of Good Practice: Key Aspects on the Employment of People with Disabilities (2002) provides guidance to employers and employees on promoting fair treatment and opportunity to those with disability (Marumoagae, 2012).

[6] Perpetrators of hate speech, harassment and discrimination outside the work environment are held accountable under the Promotion of Equality and the Prevention of Unfair Discrimination Act (PEPUDA), rather than the EEA.

[7] This is South Africa's official disability prevalence. It is calculated by Stats SA (2014) using national Census data and the UN Disability Index (the international standard disability measure).

[8] The Broad, UN and Narrow definitions of disability have been used in government publications such as the Department of Social Development (2015) and Stats SA (2014) to assess the effects of disability on employment and participation.

disability empirically is complex, but it is a challenge with serious implications. This dissertation interrogates whether it matters which definition is used and finds the Broad definition to be a poor empirical measurement for disability when considering the effects of disability on labour force participation and employment. This is due to inclusion of mild seeing difficulties which behave differently from other mild limitations.

Disability is found to have a negative effect on labour force participation and employment in South Africa. Currently, the negative effects of disability are more strongly felt in labour force participation than in employment. For example, disability, defined according to the Narrow definition, decreases the odds of being economically active by 55% compared to an abled individual. On the other hand, the odds of an individual, defined as disabled according to the Narrow definition, being employed are 17.2% lower than for individuals without disability. As the definition for disability becomes increasingly strict, moving from the Broad to the Narrow definition, so the negative effects of disability within the labour market grow.

In this dissertation there is a specific focus on gender and its relationship to disability. There is little difference in labour force participation between disabled men and women. However, disabled females do relatively worse than disabled males with respect to employment. Thus, a larger proportion of disabled women than disabled men are actively searching but not finding employment. Under the Narrow definition, being female and disabled is found to negatively affect the likelihood of being employed by 20.3% compared with a disabled male. These results suggest that disabled women face greater barriers to the demand for their labour, not in supplying labour.

Finally, this dissertation argues that the barriers facing disabled males and females probably differ in both nature and magnitude. With respect to labour force participation and employment, the biases and barriers associated with gender may be more strongly felt among disabled women than the barriers resulting from disability. While this has been shown to be the case for other developing countries, to date such research has not previously been conducted in South Africa.

CHAPTER 1: THE THEORY BEHIND THE ECONOMIC MARGINALISATION OF PERSONS WITH DISABILITY

Employment and economic participation have significant effects on class, power and status. Persons with disability face labour market '*barriers*' which hinder their success, and this contributes to their social and economic deprivation. A standard labour supply–demand model is used as a theoretical framework to understand the '*barriers*' that influence employment and participation among persons with disability. Furthermore, the labour model is used to argue that disabled men and women face different barriers within the labour market.

1.1 BARRIERS TO WORK AND EMPLOYMENT

The literature has employed an economic lens to provide greater clarity regarding the forces affecting persons with disability within the labour market. Authors such as Stern (1996), Currie and Madrian (1999) and Mizunoya and Mitra (2013) have used the basic *labour supply–demand model*, updated to account for disability.

The basic labour model considers the interaction between the supply of and demand for labour in determining employment and wages. Employers demand labour, increasing the quantity of labour demanded when wages are low. The wage offered by employers to job searchers is dependent on the marginal product of a worker. On the other hand, workers supply labour, and this supply is determined by the trade-off between leisure time and supplying labour at every wage level. Workers have a preference for work rather over leisure when wages are high. The market equilibrium balances the conflicting wage interests between employers and workers; this equilibrium is referred to as the *market wage,* which must be larger than or equal to an individual's reservation wage[9] if an individual is to accept employment. At equilibrium the market wage will equal the marginal product. If the marginal product of persons with disability is lower than that of those without disability, the labour model predicts that persons with disability will have a lower wage. Changes in the conditions that determine the demand for and supply of labour, such as disability, will shift these demand and supply curves

[99] The lowest wage a worker is willing to accept to supply labour.

The labour supply–demand model suggests that the demand for and labour supply of disabled adults is lower than the demand for and supply of labour without disability. Consequently, employment and participation will be lower among those with disability.

Other frameworks have been employed to understand and explain the effect of disability within the labour market. To better account for social, political, economic and individual-level factors, authors such as Welch (2002), Mitra (2006), Saleeby (2007) and Graham et al. (2014) have used Sen's (1999) *capability approach*. Sen (1999) argues that poverty should be understood through an individual's capabilities, their ability to access entitlements, or the quality of life that they have reason to value. Basic capabilities include education, food security, health, gender equality and equal employment opportunities. Income and material assets are the means to achieving this wellbeing, not the end goals in themselves.

The capability approach allows better for disability and poverty to be viewed as a multi-dimensional issue, resulting from a wide range of deprivations (Graham at al. 2014). Unlike the labour model, the capability approach is not a formal economic model, rather it elucidates the barriers that prevent the participation of individuals within society and the economy.

The difference between these two approaches is that the labour model looks specifically at those factors that affect wages, employment and participation. Sen's (1999) capability approach is broader and considers wages and employment as means of combating poverty, promoting humans rights and encouraging social inclusion.

Given this strong focus on inclusion and empowerment, the capability approach is consistent with the current understanding of disability, discussed below. Regardless of whether the capability approach or the labour model is used, the mechanics work the same. In this dissertation the focus is given to the labour supply–demand model. However, the points discussed below under the labour supply–demand model also apply to the capability approach. The demand-side factors are considered first, followed by the supply–side factors.

1.1.1 Demand-side factors

Looking *first* at the demand for labour, employers may be hesitant to employ disabled candidates if their associated marginal cost is higher, or perceived to be higher, than that of an abled candidate (Mizunoya & Mitra, 2013). A disabled employee may be perceived as having a lower productivity and face greater restrictions in the diversity of activities he or she can perform. The effect of disability on productivity is difficulty to calculate and is dependent on the nature of the person's disability, the task at hand, the work environment and the availability of technology that compensates for the effect of disability (WHO, 2011). However, the assumption among employers that disabled workers have a lower marginal product lowers the demand for their labour.

Accommodating disability may also include additional costs, for example the installation of ramps or lifts for a wheelchair user (Mizunoya & Mitra, 2013). Such costs may further contribute to an employer's reluctance to hire disabled persons. Alternatively, employers may lower the market wage offered to a disabled candidate to compensate for these higher marginal costs.

Secondly, labour market imperfections, such as stigma, prejudice and discrimination, inform economic behaviour and influence employment decisions. Various theories have been developed to explain the presence of discrimination through an economic lens.

Economic models often assume rationality. However in reality, employers are not rational and their preferences for discrimination differ. Becker (1971) expands traditional rational choice theory to incorporate a wider set of preferences, prejudices and values. This allows for greater understanding of the discrimination faced by minority groups.

Becker (1971) understands discrimination as incorporating both prejudice and ignorance. Thus discrimination cannot be rectified by knowledge alone. All individuals have a different 'preference for discrimination'. Individuals with a higher 'preference for discrimination' are willing to forfeit profit or wages so to avoid employing or working with a group they dislike.

Becker (1971) argues that discrimination against a particular group depends on the group's physical and social distance. For example, the growing prevalence of a minority group may bring with it greater knowledge, and may lower prejudice against this minority

group. On the other hand, it may increase the level of prejudice experienced as the majority increasingly fears the group's power (Becker, 1971).

Environmental, social and political barriers increase the physical and social distance between persons with and without disability. For example, in South Africa the majority of children with disability currently attending school are enrolled in special needs schools (Donohue & Bornman, 2014). Consequently, children with disability are often unable to integrate with their peers, contributing to the social and physical distance between those with and without disability.

Arrow (1998) argues that stereotypes can persist, despite employers not having a 'taste for discrimination', through statistical discrimination (Arrow, 1998). Statistical discrimination considers how inequalities may persist even when employers are rational, as stereotypes are made based on a group's average behaviour. Arrow (1998) illustrates this using the example of race and education. Black and white populations have a difference in average productivity due to an unobserved cause, for example the quality of the education they have received. Over time, employers may use an observable characteristic, namely race, to explain the difference in productivity instead of the unobserved cause, education.

The same is true for disability. For example, in South Africa persons with disability attend fewer years of schooling and often receive a lower quality of education (DSD, DWCPD & UNICEF, 2012). Differences in curriculum between special needs and conventional schools may leave learners with disability unprepared for the work place.[10] Consequently, employers may view persons with disability as being less productive, rather than attributing this to differences in educational attainment.

The available empirical literature points strongly towards persons with disability facing discrimination and prejudice within the labour market.[11] Weinberg (1976) finds that those with physical or sensory disability are typically thought to be less intelligent, less aggressive and more dependent on others. Coleman, Brunell & Haugen (2015) find that incompetence is one of the most common descriptors attached to individuals with either

[10] Special Needs School do not necessarily provide all conventional subjects.

[11] The available literature on this topic has typically been conducted by psychologists, in developed countries.

physical or intellectual disability or both. Dovidio, Pagotto and Hebl (2011) and Liesener and Mills (1999) both find that the physically disabled are typically treated like children when asking for or needing assistance. This bias is so prevalent and entrenched that even those professionals working with individuals with disability typically associate child-like characteristics of dependence and incompetence with disability (Robey, Beckley & Kirschner, 2006).

Accordingly, although employers may feel compassion, sympathy or fondness towards a disabled individual, such stereotypes often negate respect (Robey, Beckley & Kirschner, 2006). Perceptions such as these unintentionally influence expectations and judgements among employers towards persons with disability. These are significant barriers to persons with disability wishing to participate in and realise their full potential within the economy

Disability stereotypes and stigmas are not homogeneous, but rather interact with personal characteristics. The literature points to disabled females facing different biases and stigmas compared with their male counterparts. Disabled women may be victims of a type of 'double discrimination' as they are subjected to both gender and disability stereotypes. For instance, Weinberg's (1976) suggest that with regard to incompetence, weakness, unattractiveness and heroism, disabled men and women are stereotyped in the same way. However, disabled women are typically considered to be more dependent on others than disabled men.

Furthermore, Coleman et al. (2015) consider how perception and stigma can change with disability type and gender. Their findings suggest that people prefer to interact with physically disabled women rather than intellectually disabled women. In other words, there is a preference for greater social distance in respect of women with intellectual disability compared with women with physical disability. These differences in perception are not found towards males with physical or intellectual disability. Consequently, employers and colleagues are likely to interact with disabled females and males differently.

It is worth noting that demand and supply factors can often interlink. While some factors will affect solely either the demand or supply for labour, others, such as stigma and bias, will affect both sides of the market. 'Self-stigma' refers to when an individual

internalises the negative views held by society (Werner & Schulman, 2015).For example, Wang and Dovidio (2011) find disabled students primed in relation to their disability status felt less autonomy than those primed according to their student status. Biases and stigma affect how persons with disability behave and think, and can discourage risk taking or job searching (Werner & Schulman, 2015). Negative ideas of self-worth may further isolate individuals with disability and affect their labour supply choices.

Thirdly, the economic literature has strongly established that education improves productivity and an employer's willingness to hire. Consequently, better educated individuals typically enjoy higher wages, lower unemployment and possess greater job security (Lamichhane & Sawada, 2013).

Education is specifically mentioned here due to the generally low educational attainment of those with disability in South Africa (Stats SA, 2014).[12] This is especially true for disabled females.[13] Furthermore, the persistence of low educational levels among persons with disability reinforces stigmas and the idea of dependency. All else being equal, if average educational attainment is lower among individuals with disability than among the abled this will translate into a wage penalty.

This is separate from how education is rewarded. However, little work has been done on estimating the returns on education among those with disability. Looking at the United States, Hollenbeck and Kimmel (2001) find that the returns on education among individuals with disability are positive, and are roughly equal to the expected returns on

12 Stats SA (2014) Loeb et al. (2008), the Department of Social Development (2015), Graham et al., (2014) and Tesemma (2014) all find that disability negatively affects educational attainment within South Africa. Graham et al. (2014) find that the abled population receives, on average, 2.7 more years of education compared to persons with disability. DSD, DWCPD, UNICEF (2012) found that 37% of children with disability between the ages of 16 and 18 had dropped out of school, compared to a 14% drop-out rate among children without disability. As the degree of disability grows, so do the negative effects on educational attainment. Consequently, only 5.3% of those with 'severe difficulties' had attained higher education, and 23.8% had no formal education whatsoever (Stats SA, 2014).

13Among persons aged 20 years and above, disabled females have an average lower educational attainment than disabled males. For example, among severely disabled men and women 20.6% and 23.8% respectively have no formal education (Stats SA, 2014). The level of higher educational attainment was 6.2% and 5.3% among severely disabled men and women respectively (Stats SA, 2014). However, current school attendance suggests that there have been improvements. According to the 2011 Census, there is only a marginal difference between the sexes in primary school attendance, with disabled boys representing a slightly larger proportion than disabled girls. Within tertiary education, there is no disparity between the attendance of disabled males and females (Stats SA, 2014). As these individuals enter the labour market, the disparity between disabled male and female educational attainment may shrink.

education within the abled population. On the other hand, using Nepal as a case study, Lamichhane and Sawaba (2013) find the wage returns on education are higher among individuals with disability than among individuals without. While more work is needed if the magnitude of the returns on education among persons with disability is to be understood within a South Africa context, the literature strongly points to these being positive.

1.1.2 Supply-side factors

Considering next the supply side, disability may change an individual's preference for work and leisure. The reservation wage is influenced through a number of channels. For instance, the opportunity cost of working and job searching may be higher among persons with disability due to additional travel time and expenses (Mizunoya & Mitra, 2013). Physical barriers are a major obstacle to persons with disability within the labour market (McKinney, 2013). Inaccessible public spaces and transport makes it difficult for persons with disability to job search, attend job interviews, arrive at work on time, and fully participate within society. Persons with disability mostly find using public transport in South Africa mentally and physically exhausting (McKinney, 2013). Additional stresses such as these may increase the reservation wage among persons with disability.

According to Walter Oi, a blind economist, disability "steals time" (Anand & Ben-Shalmon, 2014). Anand and Ben-Shalmon (2014) find that persons with disability use time differently to the physically abled, with everyday and health-related activities requiring significantly more effort. Consequently, time for study, leisure and paid work is scarcer. Pagan-Rodriguez (2012) finds that individuals with disability report feeling rushed, and generally experience greater levels of stress as a result of this time pressure. The additional time required for everyday self-care, rehabilitation and health care activities may increases the reservation wage among persons with disability.

As noted above, employers may lower the market wage offered to persons with disability due to higher marginal costs or due to their perception that disabled workers are less productive. A low market wage combined with a high reservation wage may motivate persons with disability to exit the labour market.[14] Thus the choice not to

[14]It can also be argued that disability may lower the reservation wage due to the greater income pressures faced by persons with disability (Mizunoya & Mitra, 2013). For example, persons with disability often have

participate in the labour market may be exacerbated if disability increases the reservation wage.

Information and communication barriers often mean that persons with disability are unaware of the job opportunities available to them or how to access these job opportunities. Most of the formats in which employers advertise are largely inaccessible to persons with disability. From interviewing persons with disability in South Africa, McKinney (2013) found that those with visual disabilities struggled to access job advertisements in written text. Those with physical disabilities often struggle to unfold, hold and turn the pages of a newspaper.

Many organisations are increasingly using email and the internet to advertise job opportunities. However, many of those with disability do not have computers or the computer skills to access these opportunities (McKinney, 2013). Furthermore, most information and communication technologies, such as the internet, television and telephones, are incompatible with assistive devices (WHO, 2011). For example, in 2008 the five most popular social networking platforms were inaccessible to those with visual impairment (WHO, 2011).[15] Thus, barriers to information prevent persons with disability from job searching effectively and likely contributes too many exiting the labour market.

Finally, social assistance may be a disincentive to participation. The Disability Grant, under the Social Assistance Act (1992), is a compensation programme awarded to those unable to work.[16]The literature has hypothesised that the Disability Grant may lower the incentive to job search (WHO, 2011; Mizunoya & Mitra, 2013). However, as of yet there is little evidence to support this claim. Rather, Mitra (2010) finds that during the early 2000s, the period that saw a significant increase in the number of Disability Grant recipients, there was little effect on labour market behaviour among persons with disability.

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higher medical costs. However, the literature has more strongly argued for disability increasing the reservation wage.

[15]Given the speed at which technology develops, it is difficult to regulate this.

[16] Currently, the Disability Grant is South Africa's third-largest social assistance grant, after family and children grant and pension grants.

1.1.3 Conclusions from the labour market model

Based on the demand-side and supply-side factors, the labour market model suggests that individuals with disability will have a higher reservation wage and a lower market wage, lowering the likelihood of their employment and participation.[17] The limited work opportunities available to those with disability are typically less attractive, with individuals with disability more often finding themselves in insecure positions, without written contracts, earning lower wages or within the informal economy (Graham et al., 2014).

To provide clarity, Figure 1-1 summarises the above discussion, showing the factors that affect the demand for and supply of labour among persons with disability. The arrow indicates a downward force on supply and demand. It should be noted that while the literature hypothesises that higher marginal costs and social assistance may lower the demand for and supply of disabled labour respectively, little evidence has been found to support this.

It is worth noting that, although it is useful, the labour market framework is unable to construct a full picture. Individual-level factors strongly shape outcomes. For instance, one finds individuals with severe activity limitations do not experience any of the adverse outcomes associated with disability, depending on how he or she "*navigate[s] the social environment using the range of personal, social and financial resources he/she may have available*" (Graham et al., 2014). Some of these factors can easily be controlled for through regression analysis, for example gender and education. However, there are many unobserved characteristics, such as attitude and the emotional effects of discrimination that cannot be controlled for given the available data.

[17] Alternatively, greater income constraints and pressure, due to additional living expenses, may lower the reservation wage among those with disability. However, the literature leans more towards disability increasing the residual wage.

Figure 1-1: Summary of the labour demand–supply model among persons with disability

Demand side	Direction	Evidence	Gender differences
Higher marginal costs	↓	N/A	
Discrimination	↓	- Perceived to be more dependent on others (Weinberg, 1976). - Associated with incompetence (Coleman, Brunell & Haugen, 2015).	- Disabled females are thought to be more dependent on others that disabled men (Weinberg, 1976). - A preference for greater social distance in respect of women with intellectual disability (Coleman, Brunell & Haugen, 2015).
Educational attainment	↓	- Higher school drop-out rates among persons with disability (UNICEF, 2012) -Lower average years of education (Stats SA, 2014)	- Disabled females have, on average, lower educational attainment that disabled men (Stats SA, 2014)
Supply side			
Preference for leisure over work	↓	- Greater time constraints - Higher levels of stress (Anand & Ben-Shalmon, 2014)	
Physical barriers		-Using public transport is mentally and physically exhausting (McKinney, 2013)	
Information and communication barriers	↓	-Communication technologies incompatible with assistive devices (McKinney, 2013) -Popular social networking platforms inaccessible (WHO, 2011)	
Disability Grant	↓	N/A	
Self-stigma	↓	-Priming in relation to disability lowers feeling of autonomy (Werner & Schulman, 2015)	

1.2 LOW LABOUR FORCE PARTICIPATION AND EMPLOYMENT AMONG THOSE WITH DISABILITY

Both the labour supply–demand model and the capability approach suggest that labour force participation and employment will be lower among persons with disability. The empirical findings from the literature largely reflect this, both internationally and within South Africa.

The negative effects of disability on labour force participation are strongly established (WHO, 2011; Gannon, 2005; Campolieti, 2002; Parsons, 1982). The Organisation for Economic Co-operation and Development (OECD) found that economic activity was 2,5 times lower among persons with disability compared to those without, at 20% and 49% respectively (WHO, 2011).

The same is found within the local literature, with few individuals with disability joining the South African labour force (Mitra, 2008; Stats SA 2014, Graham et al., 2014). Graham et al. (2014) calculate that 47% of persons with disability are economically inactive, compared to 34% of those without disability.[18] As the degree of activity limitation grows, so do the negative effects of disability on labour participation (Stats SA, 2014).

Among those individuals with disability who have been economically active in the past, but are currently not participating, their disability is identified as the main motivation for ceasing economic activity (Graham et al., 2014). Furthermore, Graham et al. (2014) find that a large proportion of those persons with disability currently inactive are discouraged, having a desire to work but taking no steps to obtain employment. Within a context of high unemployment, as is the case in South Africa, the labour market is often difficult to access. However, Graham et al.'s (2014) findings suggest that this is particularly true for those with disability.

The empirical evidence also points to a strong gender disparity in labour force participation. As the discussion above suggests, disabled women face greater barriers to participation than their male counterparts. Within South Africa, disabled women remain

[18]Calculated using the National Income Dynamics Study (NIDS), 2008.

inactive for longer periods of time, and are more likely never to have actively searched for work (Graham et al., 2014).

The relationship between disability and employment is complex, partly owing to the low levels of economic activity within the disabled community. The unemployment rate among persons with disability is often lower than or equal to that found within the abled population (Mitra, 2008; Graham et al, 2014; Stats SA, 2014). For example, Mitra (2008) calculated 2006 unemployment rates within South Africa at 23.1% and 28.65% for the disabled and abled working age population respectively. More recently, Stats SA (2014) calculated 2011 unemployment rates among the disabled and abled at 27.3% and 27.6% respectively.

The similarity in these employment rates should not be interpreted as evidence that individuals with disability do not face significant hurdles in relation to accessing jobs. Rather, these numbers reflect the much lower labour market participation rates of the disabled. In other words, only a small proportion of individuals with disability within the working age population are employed, but the unemployment rate remains low given their limited degree of economic participation to begin with. Metrics such as the unemployment rate, which only includes individuals within the labour force, may conceal the true effects of disability. Consequently, the literature has more often used the employment rate, as a percentage of the working age population, as an indicator for the success of individuals with disability within the labour market (Stats SA, 2014; WHO, 2011).

Disability has been found to affect employment as a percentage of the working age population negatively (WHO, 2011; Palmer & Harley, 2011; Mizunoya & Mitra, 2013). This is true within both developed and developing countries. For example, using a sample of 27 countries, the Organization for Economic Co-operation and Development (OECD) found that among those with disability, average employment was half that of persons without disability (WHO, 2011).

South Africa is no exception. Using the 2011 Census, Stats SA (2014) found that within five of the six functional domains (seeing, hearing, communication, walking, remembering and self-care), employment was lower among those with an activity limitation and higher among those without, the exception being sight. As the degree of

activity limitation grows, so do the negative effects on employment (Stats SA, 2014). Similar results on the negative effects of disability on employment within South Africa are found by Mitra (2008), the Department of Social Development (2015) and Graham et al. (2014).[19]

The Commission for Employment Equity (CEE) was established as a statutory body under the Employment Equity Act (EEA, No. 55 of 1998) to advise on matters pertaining to policy implementation and the objectives of the EEA (Department of Labour, 2016). Based on information submitted by a range of designated employers, the CEE constructs estimates on the prevalence of disabled persons within the workforce. The Commission's findings for 2011–2015 are summarised in Table 1-1. Between 2011 and 2015, the disabled represented less than 1.5% of the workforce. Thus workforce participation among those with disability has yet to pass the 2% target set for the public sector in 2005. Although persons with disability account for 7.5% of South Africa's population, they continue to make up a proportion of the workforce far below this level.

Table 1-1: Workforce profile representation of people with disability, from 2011 to 2015

2011	2012	2013	2014	2015
0.8%	1.4%	0.9%	1.2%	1.2%

Table 1-1 has been constructed using the findings from the 12th–16th *Commission for Employment Equity Annual Reports* (2012–2016). The CCE generates these figures using information submitted by designated employers.

As was also the case with respect to labour force participation, in South Africa employment rates are lower among disabled females than disabled males. Mizunoya and Mitra (2013) note that the literature does not typically distinguish employment rates among the disabled by gender, and consequently statistics are limited. Despite this dearth of information from the literature, the World Health Surveys analysis for 51 countries found employment rates of 52.8% among disabled men and 19.6% among

[19] This result persists across a number of data sources. Mitra (2008) uses the 1998/1999 Occupational Health and Safety (OHS) figures and the 2002–2006 General Health and Safety (GHS) figures. The Department of Social Development (2015) uses the 2011 Census and the 2011 GHS, and Graham et al. (2014) use the 2008 National Income Dynamics (NIDS) Wave 1 study.

disabled women (WHO, 2011). Comparatively, within the abled population, 64.9% of men and 29.9% of women are employed (WHO, 2011). Stat SA (2014) found a similar gender disparity within South Africa, with higher employment rates among disabled men than disabled women at 66.6% and 58.1% respectively. This may suggest that persons with disability are doing better in South Africa with respect to employment than elsewhere. However, it is worth noting that these results are not directly comparable. They are calculated using different data sources, recorded over different times and use different measurements for disability.

As discussed above, the literature has clearly identified disabled women as experiencing lower labour force participation and employment when compared to their male counterparts. However, there is still great uncertainty about how gender and disability interact within the labour market, especially in developing countries.

Mizunoya and Mitra (2013) have contributed to this literature, using a 'disability gap in employment' to illustrate the difference in employment between the disabled and abled population separated by gender. The disability gap in employment among males is the difference between abled male employment and disabled male employment. Similarly, for females the disability gap in employment is the difference between abled female employment and disabled female employment. Mizunoya and Mitra (2013) separate their analysis by gender in this way to better account for gender-related employment barriers. Table 1-2 taken from Mizunoya and Mitra's (2013) shows the employment rate among those with and without disability within 15 developing countries in sub-Saharan Africa, Asia and Latin America.

Table 1-2: Employment rate by gender and disability status (*Source:* Mizunya & Mitra, 2013)

Country	Males				Females			
	N	With disability	Without disability	Gap	N	With disability	Without disability	Gap
Sub-Saharan Africa								
Burkina Faso	1,972	0.55	0.85	0.30 ***	2,311	0.20	0.36	0.15 ***
		(0.05)	*(0.01)*			*(0.04)*	*(0.02)*	
Ghana	1,488	0.75	0.76	0.01	1,774	0.18	0.78	-0.02
		(0.06)	*(0.02)*			*(0.04)*	*(0.01)*	
Kenya	1,642	0.62	0.75	0.13	2,223	0.55	0.51	-0.04
		(0.11)	*(0.02)*			*(0.07)*	*(0.02)*	
Malawi	1,927	0.67	0.67	0.00	2,617	0.35	0.36	0.02
		(0.04)	*(0.02)*			*(0.04)*	*(0.01)*	
Mauritius	1,627	0.64	0.90	0.27 ***	1,644	0.33	0.42	0.09 *
		(0.04)	*(0.01)*			*(0.03)*	*(0.01)*	
Zambia	1,381	0.72	0.72	0.00	1,633	0.53	0.47	-0.06
		(0.08)	*(0.02)*			*(0.05)*	*(0.02)*	
Zimbabwe	1,245	0.44	0.47	0.03	2,249	0.28	0.18	-0.10 **
		(0.06*)*	*(0.02)*			*(0.03)*	*(0.01)*	
Asia								
Bangladesh	2,264	0.89	0.87	-0.02	2,689	0.11	0.12	0.02
		(0.03)	*(0.01)*			*(0.01)*	*(0.01)*	
Lao PDR	2,080	0.75	0.83	0.08	2,348	0.70	0.79	0.09
		(0.06)	*(0.01)*			*(0.06)*	*(0.01)*	
Pakistan	3,185	0.83	0.87	0.04	2,542	0.11	0.14	0.03
		(0.04)	*(0.01)*			*(0.03)*	*(0.01)*	
Philippines	4,182	0.62	0.73	0.11 **	4,820	0.37	0.36	-0.02
		(0.03)	*(0.01)*			*(0.03)*	*(0.01)*	
Latin								

Country	Males				Females			
America								
Brazil	1,582	0.72	0.77	0.05	1,403	0.30	0.40	0.10 **
		(0.04)	*(0.01)*			*(0.03)*	*(0.02)*	
Dominican Republic	1,740	0.78	0.87	0.09	2,047	0.46	0.39	-0.07
		(0.07)	*(0.01)*			*(0.05)*	*(0.02)*	
Mexico	13,740	0.70	0.86	0.16 ***	19,092	0.25	0.28	0.03
		(0.03)	*(0,00)*			*(0.02)*	*(0.00)*	
Paraguay	2,010	0.81	0,85	0.04	2,415	0.38	0.44	0.06
		(0.05)	*(0,01)*			*(0.04)*	*(0.01)*	

Standard errors included within parentheses, *** P≤0.001 ** P≤0.05 *P≤0.1

Data source: World Health Surveys, 2002–2003

As seen in Table 1-2, Mizunoya and Mitra (2013) find that the disability gender gap varies between countries. Some have large differences in the disability gap, while others have a smaller difference. For example, the disability gap among males in Mauritius is larger at 27%, while the gap among females is relatively smaller at 9%. With the exception of two countries, Brazil and Lao, the disability gap is larger among males than females.

Mizunoya and Mitra (2013) argued that among men, disability may be a larger driver of the difference in employment outcomes relative to other factors. On the other hand, among women, the effects of disability on employment outcomes may largely be determined by gender-related barriers. This is not to say that disabled females are better off than disabled males, only that the gap between abled and disabled women is smaller than the gap between abled and disabled men. Thus the effects of disability on employment are not homogeneous across countries.

Mizunoya and Mitra's (2013) paper adds greater understanding to disability and its interactions with gender and what drives success within the labour market. These

authors noted that they excluded South Africa from this study due to problems with non-random missing data.[20]

Creating a profile of disability with respect to gender in South Africa's labour market will add value. Before this can be done, however, disability must be defined and measured.

[20] Mizunoya and Mitra (2013) use the 2002-2003 World Health Survey. Accordantly, non-random missing data is not necessary problematic to this dissertation which uses the GHS 2011-2015.

CHAPTER 2: THE CHANGING PARADIGMS OF DISABILITY

2.1 CONCEPTUALISING DISABILITY

Before an analysis of disability can take place, an understanding of how disability is defined and measured is required. The understanding of disability and the complex processes resulting from disability has evolved with time. This is largely because

"…each definition [of disability] is embedded within the broader constructs of how society works, who is in and who is out, and under what conditions decisions are made … It is crucial, therefore, that these definitions be understood as emergent from particular histories and discursive formations" (Soudien & Baxen, 2006).

In the past, disability has been understood using two broad conceptual models: the medical and social models. The 'medical model' views disability as solely resulting from an individual's psychological or physical impairments. Under the medical model disability is specific to the individual, and thus intervention is focused at the individual level through medication and other treatments (Mont, 2007).

The medical model's flaw is that it defines the disabled individual as 'the problem' or as having some 'deficiency'. Persons with disability are the target of interventions which aim to 'fix' them and thus individuals with disability hold sole responsibility for structuring their lives to function within an environment designed by and for the abled population (Soudien & Baxen, 2006). The disabled are thought of as victims and as being dependent on the support of the abled. Under the apartheid government, this was how disability was understood and treated, further contributing to the marginalisation of persons with disability within society (Dlamini, 2016).

The 'social model' was a reaction to the medical model and can be understood as its antithesis. It was developed during the 1960s primarily by activists, academics and the 'international disabled peoples movement' who themselves were disabled and felt that the medical model failed to explain the experience of disability (Lang, 2007; Chirikos & Nestel, 1984). Proponents for the social model argued that the medical model would not allow for structural changes which would promote inclusivity and development.

The social model views individuals as functioning within a culture and environment that is organised and designed for abled individuals, resulting in the exclusion of persons with disability (Mont, 2007). Here the focus is on removing social barriers, economic barriers and power structures which prevent the disabled from having personal autonomy and participating fully in society. The social model's focus on inclusion and empowerment is consistent with Sen's (1999) capability approach.

Unlike the medical model, intervention in the social model is inclusive and requires participation from both the abled and disabled population. The primary criticism of the social model is that by fully separating body and environment it has a "disembodied notion of disability" (Lang, 2007). In other words, environmental factors are important. However the body still has a role in determining an individual's ability to participate in society.

2.2 DEFINING DISABILITY

Neither the social nor the medical models are adequate when used independently from one another. The International Classification of Functioning, Disability and Health (ICF)[21] aims to set an international standard in defining and measuring disability. It was approved as an official World Health Organization (WHO) framework in 2001.

By merging the social and medical models it understands disability as a "bio-psycho-social synthesis" (WHO, 2013). Thus disability becomes a multi-dimensional concept, resulting from the interaction between an individual's health conditions, their surrounding environment and personal factors. In defining disability the International Classification focuses on an individual's level of functioning within society, rather than on a specific medical impediment. Rather, disability is understood through the effects it has on participation and functioning

The International Classification can be understood in two parts, namely functioning and contextual factors. Firstly, functioning is determined by the interaction between three levels: the impairment of body functions and structures, activity limitations and participation restrictions.

[21] Hereafter referred to as the International Classification.

Body function (for example, sight and muscle force) and structure impairments (for example, the eye and muscles) are directly connected to the body. The medical model focused its understanding of disability primarily at this level of functioning. Activity limitations are concerned with more complex actions and tasks (for example, walking, reading or writing). Activities typically require an individual to use a range of body-level functions and structures. Participation considers involvement in society and everyday activities (for example, participating in school or job searching).

Secondly, 'contextual factors' relate to environmental and personal factors. Environmental factors include the social, economic and political attitudes that shape a person's life (for example, the availability of lifts and ramps, or a hostile work environment). Personal factors include those characteristics that are not represented elsewhere within the International Classification but have an effect of functioning (for example, gender, age, race, education, or lifestyle).[22]

Unlike the medical or social models, where disability is solely the result of bodily functioning or environment, disability under the International Classification is understood as resulting from the interaction between these environmental and health conditions. While some elements of disability are almost entirely the result of either environmental or medical factors, these can interact in dynamic and often unpredictable ways.

Furthermore, while the International Classification provides a framework for understanding disability, it does not determine the level of functioning that defines which individuals are or are not disabled (WHO, 2013). The disability threshold is dependent on the purpose and objective of each case.

With these changes in the definition of disability, the South African government and academics have updated their understanding of disability. Before 1994, disability was treated and understood using the medical model. The struggles faced by persons with disability were largely marginalised within the socio-political debate. During the transition period, an alliance was formed between the Disabled People of South Africa (DPSA) and the African National Congress (ANC), and the medical model was rejected. This provided

[22] It is worth noting that personal factors have yet to be classified within the International Classification, due to large cultural and social variance. The International Classification aims to be an international tool for understanding and defining disability. Thus including personal factors with the International Classification will probably add a degree of variation that may prevent this objective from being met.

the disabled with a greater voice in designing South Africa's future.[23] For instance, the role played by the disabled community within the transition period was key in ensuring that disability was specifically stipulated within the 1996 Constitution.

The South African literature made use of the International Classification shortly after its introduction. Authors such as Watermeyer (2006) and Loeb, Eide, Jelsma, ka Toni & Maart (2008) make use of the International Classification in understanding disability within South Africa in the late 1990s/early 2000 and 2004/2005 respectively. In preparation for the 2011 Census, Schneider Dasappa, Khan & Khan (2009) understood disability on the basis of the International Classification when considering survey design. More recently, the International Classification has been used in constructing a 'Profile of persons with disability in South Africa' (Stats SA, 2014). It was also used by Graham et al. (2014) and in the 2016 *White Paper on the Rights of Persons with Disabilities* (Dlamini, 2016). Accordingly, the International Classification is well established within South Africa's disability literature and government publications.

2.3 SELF-REPORTED DISABILITY

The International Classification-based approach was used by the Washington Group on Disability Statistics, a United Nations Statistical Commission, when developing a set of measuring tools to capture disability (Madans, Loeb & Altman, 2010). The Washington Group survey questions have been hailed as the best representation of the current disability paradigm under the International Classification (Palmer & Harley, 2011). Questions are focused at both the personal and activity level, as individuals are able to report on this more accurately (Schneider et al. 2009).

Under the Washington Group questions, respondents report on the difficulty they experience in six activity functional domains (seeing, hearing, walking, remembering, self-care and communication), allowing for a range of severity (no difficulty, some difficulty, a lot of difficulty and unable to do). Figure 2-1 shows the format of the Washington Group questions, extracted from the General Household Survey (GHS) 2011–2015.

[23] This was seen when, with the ANC's support, the DPSA launched the Disability Rights Charter (1992) which outlined the disabled community's minimum demands moving forward (McClain, Nhlapo & Watermeyer, 2006).

It is worth noting that assistive devices are included for seeing (glasses) and hearing (hearing aid), as seen in Figure 2-1. Limitations in these domains can often be easily overcome through the use of glasses and hearing aids. Such individuals may have a limitation in their body functioning, but often experience few activity limitations. Furthermore, the use of such devices is common in most countries. Thus if an individual is currently using glasses or a hearing aid and this fully corrects for difficulties in seeing or hearing, they will answer as having no difficulty in these activities. This should be kept in mind when interpreting the disability measurements below.

Figure 2-1: Washington Group questions

Does… have difficulty in doing any of the following?	**Respondents report the degree of difficulty for each activity:**
a. Seeing (even with glasses, if he/she wears them) b. Hearing (even with a hearing aid, if he/she wears one) c. Walking a kilometre or climbing a flight of steps d. Remembering and concentrating e. With self-care, such as washing or dressing f. In communication in his/her usual language, including sign language (understanding others and being understood by others)	1. No difficulty 2. Some difficulty 3. A lot of difficulty 4. Unable to do 5. Do not know

Source: GHS 2011–2015

Before continuing, it is worth considering the limitations and strengths of capturing disability using the Washington Group questions. Firstly, the Washington Group has focused its survey design around basic activities. With the exception of self-care, more complex activities have largely been excluded (Palmer & Harley, 2011). The primary reason for this exclusion is the difficulty in designing survey questions to capture complex activities. Higher-order functioning is more likely to be influenced by socio-economic and cultural factors. For example, the difficulty experienced while bathing is also dependent on the availability and type of bathing facilities (Palmer & Harley, 2011). However, such

complexities would interfere with the objective of creating an internationally comparable measure of disability.

This exclusion of complex activities does not appear to be problematic for physical disability. Schneider et al. (2009) find that individuals with complex activity limitations typically report one or more basic limitations. However, the exclusion of such higher-order cognitive functions means that the Washington Group questions are largely unable to capture cognitive and psychiatric disabilities (Palmer & Harley, 2011). This must be kept in mind when interpreting the results below as it is unlikely that they are representative of such disabilities.

Secondly, the Washington Group survey questions capture self-reported activity limitations. Campolieti (2002) finds that self-reported data gives a poor indication of the actual level of difficulty. Rather it provides a good indication of the difficulty experienced or recognised by an individual. Accordingly, the results below should be interpreted as an individual's experience and perception of difficulty, not the level of difficulty itself. The actual or objective level of limitation needs to be tested using other means, for example by measuring sight impairment with an eye examination. This only becomes problematic if one expects individuals with disability from different sub-groups, for example gender or race, to differ in their perception of difficulty. At the time of writing we are unaware of any literature that shows this to be the case. This is explored below, in Chapter 3.

Despite its limitations, the Washington Group's survey questions are largely considered useful in capturing and measuring disability (Mont, 2007; Schneider et al., 2009). Furthermore, Schneider et al. (2009) concluded that the Washington Group's questions are better at capturing and measuring disability compared with past methods of survey design.[24]

One of the strengths of the Washington Group questions is that its methods of measuring disability and activity limitation are inclusive (Schneider et al., 2009). Respondents prefer being questioned on their experience with a specific activity, rather

[24]Prior to this, disability was framed as a polar question, of 'yes' one is disabled or 'no' one is not. This was the case in the 2001 Census, the October Household Survey and the General Household Survey (GHS) 2002–2006. Only those who reported facing limitations with regard to work, schooling or housework due to "long-term physical, sensory, hearing, intellectual, or psychological condition lasting six months or more" are classified as disabled and were asked to report their specific functional limitation.

than on their specific disability (Schneider et al., 2009). Given the social stigma surrounding disability and the common assumption that 'disability' only applies to those with serious impairments, screening for disability using the Washington Group questions typically produces higher disability prevalence and is better able to capture mild forms of disability (Palmer & Harley, 2011). Persons who do not consider themselves disabled, but nevertheless face activity limitations, are likely to be included within our definitions of disability.

The Washington Group questions have since become the standard method for capturing disability and have been used within South Africa's GHS 2009–2015 and 2011 Census. Since this dissertation makes use of the GHS 2011–2015, disability is measured using the Washington Group questions.

CHAPTER 3: A PROFILE OF DISABILITY IN SOUTH AFRICA

3.1 DEFINING DISABILITY: WHO'S IN AND WHO'S OUT?

The International Classification and Washington Group questions allow for disability to be conceptualised and measured. However, they do not assign the cut-off point for who is and who is not included in a disability definition. Choosing which individuals to include and exclude within a disability measurement is no easy task, but one with serious implications.

There is no standard measure for disability (Mizunoya & Mitra, 2013). By using various definitions of disability one is able to determine whether nuances in the definitions make all that much difference. Here we consider four disability measures. Three of these definitions have already been used in South Africa's disability literature (Broad, Narrow, and UN disability index). The various definitions are as follows:

Broad disability: those that report "some difficulty", "a lot of difficulty", or are "unable to do" one or more activity. This is most inclusive definition of disability. The Broad definition was used by the National Department of Social Development in their report *Elements of the Financial and Economic Costs of Disability to households in South Africa: A Pilot Study* (2015) and Statistics South Africa's *Census 2011: Profile of persons with disabilities in South Africa* (2014).[25]

Narrow disability: those that report "a lot of difficulty" or are "unable to do" one or more activities. This is the strictest definition of disability. For the purpose of international comparability, the Washington Group recommends that disability should include those that report having "a lot of difficulty" or "cannot do" for at least one activity (WHO, 2013). Narrow disability has been used by both the Department of Social Development (2015) and Stats SA (2014).

Wide disability: those with a Broad disability in hearing, walking, remembering, self-care and communication, or a Narrow disability in seeing. Following the Broad disability measure, this is the most inclusive disability definition. The Wide definition allows one to

[25] Referred to as a "multiple basic action" disability in the Stats SA (2014) census report.

include those with a single mild disability without the results being skewed by those with "some difficulty" in seeing. The reasons for this are discussed further below.

UN Disability Index: individuals which experience "some difficulty" in at least two activities, or have "a lot of difficulty" or are "unable to do" one or more activities. Following the Narrow definition, the UN Index is the strictest disability definition. The UN Index is a standard measure of categorising disability and is commonly used in Stats SA publications.[26] South Africa's official disability prevalence of 7.5% is calculated using the UN Disability Index (Stats SA, 2014).

Figure 3-1 is a visual representation of the four disability definitions and is included here to provide clarity. The figure groups activity limitation by degree ("some difficulty", "a lot of difficulty", "cannot do" or "no difficulty"). These apply to each of six activity domains for seeing, hearing, walking, remembering, communication and self-care. Boxes are highlighted to indicate whether an individual is included or excluded in the disability definition. For example, under the UN disability definition, individuals are considered disabled if they report "a lot of difficulty" or are "unable to do" one or more activities, or if they report "some difficulty" in at least two activity domains.

The key difference relates to whether or not individuals experiencing "some difficulty" are included. While the difference between definitions appears small at first, these differences may have significant implications when assessing the effect of disability within the labour market. We explore this question further in the empirical section.

This paper captures disability as a binary; an individual is either disabled or abled. Disability is treated as an absolute, rather than a complex process resulting from the interaction between body and environment. Defining disability in this way does not align with the current paradigm of disability under the International Classification of Function, Disability and Health (ICF). One cannot equate two individuals with the same activity limitation as experiencing the same degree of disability. While potentially limiting, simplicity requires a line to be drawn to determine who is and is not included within one's definition of disability.

[26] Also referred to as the 'Second measure'

Figure 3-1: Disability definitions for Broad, Wide, UN and Narrow disabilities, grouped by the degree of activity limitation

Broad	Wide	UN	Narrow
No difficulty	No difficulty	No difficulty	No difficulty
Some difficulty	Some difficulty (excluding seeing)	Some difficulty x2	Some difficulty
A lot of difficulty	A lot of difficulty	A lot of difficulty	A lot of difficulty
Unable to do	Unable to do	Unable to do	Unable to do

3.2 GHS DATA DESCRIPTION

The data used in this analysis comes from the General Household Survey (GHS) for the years 2011 through 2015. The GHS is an annual national household survey conducted each year by Statistics SA (Stats SA)[27]. Six broad areas are covered by the GHS, namely education, housing, access to services, agriculture, food security and health.

The GHS includes all household members within its sample, but does not include collective or institutionalised living quarters such as old age homes, hospitals, prisons, military barracks or school hostels. This is a drawback of using the GHS for disability related research, as it is likely many persons with disability will reside in such quarters. The GHS is benchmarked to the total population.

The sampling weights are calibrated to 5-year age groups, gender, population group, and provincial population estimates. No measures are specifically taken to ensure that the disability data is representative of the national population. When the GHS data from 2011 to 2015 is pooled, it has a total sample size of 445, 950. The sample size among those within the working age population is 284, 573.

[27] The GHS uses a multi-stage design, with probability-proportional-to-size (PPS) sampling selection of primary sampling units within the first stage and systematic sampling for dwelling units in the second. The GHS was further stratified by geography (primary stratification) and the 2011 Census population attributes (secondary stratification). The master sample of the GHS 2011-2015 was originally designed for the Quarterly Labour Force Survey (QLFS). The same master sample is also used in the Incomes and Expenditure Survey (IES), the Domestic Tourism Survey (DTS), Living Conditions Survey (LCS) and the QLFS.

Table 3-1 describes the pooled GHS 2011–2015 data, within both the disabled and abled working age population, when disability is defined according the UN definition. Within the working age population, 50.96% of the sample is female, 78.85% are Africans and 35.8% of respondents are the heads of their households. The majority of respondents live in urban areas. Furthermore, over half the sample is under the age of 35. Although a small proportion of the sample has no formal education whatsoever, the majority have entered, if not necessarily competed, secondary education. In total, 58.74% of the working age population are economically active and 23.35% are unemployed.

Table 3–1: GHS 2011–2015 data description among the working age population (15–65)

	Total		UN definition				
			Disabled		Abled		
	N	%	N	%	N	%	
All	284, 573	-	8, 632	3.03	275, 941	96.97	***
Female	145, 032	50.96	4, 561	52.83	140, 472	50.91	***
African	224,395	78.85	6,880	78.83	217, 516	79.70	*
Head Household	101, 889	35,80	5,040	46,80	97, 849	35.46	***
Married	109,830	38.59	3, 222	37.33	106, 608	38.63	
Disability Grant	7,460	2.62	5,214	1.89	2.246	26.02	***
Urban	206, 500	72.56	5, 896	68.30	200, 603	72.70	***
Age							
15-25	90, 733	31.88	1, 460	16.92	89, 273	32.35	***
26–35	72, 965	25.64	1, 263	14.63	71, 702	25.98	***
36–45	56, 481	19.85	1, 463	16.94	55, 019	19.94	***
46–55	38, 980	13.70	2, 086	24.17	36, 894	13.37	***
56–65	25, 413	8.93	2, 359	27.33	23, 053	8.35	***
Education							
None	9, 405	3.31	1, 334	15.45	8, 071	2. 92	***
Primary	42,393	14.90	2, 541	29.43	39, 852	14.44	***
Secondary	209, 706	73.69	4, 076	47.22	205, 630	74.52	***
Third level	23, 068	8.11	681	7.89	22, 387	8.11	
Labour force participation	167, 156	58.74	2, 777	32.17	164, 380	59.57	***
Employment rate[28]	128, 127	45.02	2, 213	25.63	125, 914	45.63	***
Unemployment rate	26, 848	23.35	532	20.31	36,316	23.4	***

*** P≤0.001 *P≤0.1 The asterisk indicates whether there is a statistically significant difference between the abled and disabled working age populations. Estimated data are weighted. *Data Source:* GHS 2011–2015.

[28]Employment as a percent of the working age population.

Of those within the working age population, 3.03% are defined as disabled, according to the UN definition.[29] The profile of the working age population differs between those with and without disability.[30] As discussed further below, a larger proportion of women, 52.83% are disabled compared to men. A smaller proportion of those with disability live in urban areas compared to those without disability, 68.35% and 72.7% respectively. Those with disability are on average older, for example 24.17% of those with disability are between the ages of 46 and 55 compared to 13.37% of those without disability. Furthermore, a larger proportion of individuals with disability have no formal education whatsoever or have not passed a primary level education, compared with the abled population.[31] These differences are statistically significant at a 1% level.

Mizunoya and Mitra (2013) exclude South Africa as a case study due to a "problem with non-random missing data". In other words, during the data capturing process, respondents with disability were less likely to answer certain survey questions than respondents without disability.

An analysis of the GHS 2011–2015 data does not suggest a problem with non-random missing data. Records with unspecified values for sex, age, and race are discarded by the GHS.[32] Table 3-2 shows the distribution of missing data between the abled and disabled working age population, defined according to the UN definition. With the exception of the Disability Grant,[33] there is no statistically significant difference in the proportion of missing data between those with and without disability

[29]Disability prevalence in South Africa is discussed in greater detail below.
[30]The data description in Table 3-1 broadly reflects the findings of Stats SA (2014). Using the 2011 Census, Stats SA (2014) finds that a larger proportion of persons with disability are female, African, live in rural areas, are older, and, on average, receive fewer years of education. Furthermore, Graham et al. (2014) find that a larger proportion of those with disability are the primary decision makers in the household. Accordingly, the high degree of statistically significant differences between the abled and disabled populations is not usual.
[31]These differences are controlled for through regression analysis, discussed further below.
[32]As a result of these variables being used as a benchmark to weight the data.
[33]This is unsurprising. The GHS only asks those individuals who are currently receiving a social grant about the nature of this grant (i.e., old age, disability, child support, care dependency, foster child, or war veteran's grant). As persons with disability are more likely to receive some type of grant, a larger proportion of persons with disability will answer the question on the nature of these grants.

Table 3–2: Missing data within the abled and disabled working age populations

	Disabled		Abled		t-test
	N	%	n	%	
Marital status[34]	0	0	0	0	
Education year	62	0.61	1, 766	0.64	
Head of household	20	0.20	570	0.21	
Disability Grant	220	2.16	706	0.26	***
Working for wage	59	0.58	1,902	0.69	
Running business	80	0.79	2,496	0.91	
Work without remuneration	98	0.96	3,057	1.11	
Looking for work	4	0.04	69	0.03	

*** P≤0.001 The asterisk indicates whether there is a statistically significant difference between the abled and disabled working age populations. Estimated data are weighted. *Data Source:* GHS 2011–2015

3.3 PREVALENCE OF DISABILITY IN SOUTH AFRICA

The four different definitions of disability given above were used to create a profile of disability prevalence within South Africa. Disability prevalence is calculated as an average, pooling the data from the GHS, 2011–2015.

Table 3-3 shows disability prevalence among the working age (15–65) and general populations (aged 5 and above)[35]. For example, when disability is defined using the UN Index, the average disability prevalence is 5.11% within the general population and 3.03%

[34] There are no unspecified values for marital status within the working age population. However, missing data is present within the general population.

[35] Disability prevalence within the general population is calculated among those aged 5 and above because the GHS 2014 and 2015 did not question children under the age of 5 on their activity limitations.

within the working age population.[36] As one would expect, disability prevalence declines as the definition for disability becomes increasingly strict. For example, the average disability prevalence among the working age population ranges from 9.32% to 2.03% under the Broad and Narrow definitions respectively.

Table 3-3: Disability prevalence among the working age population (15–65) and the general population (aged 5 and above)

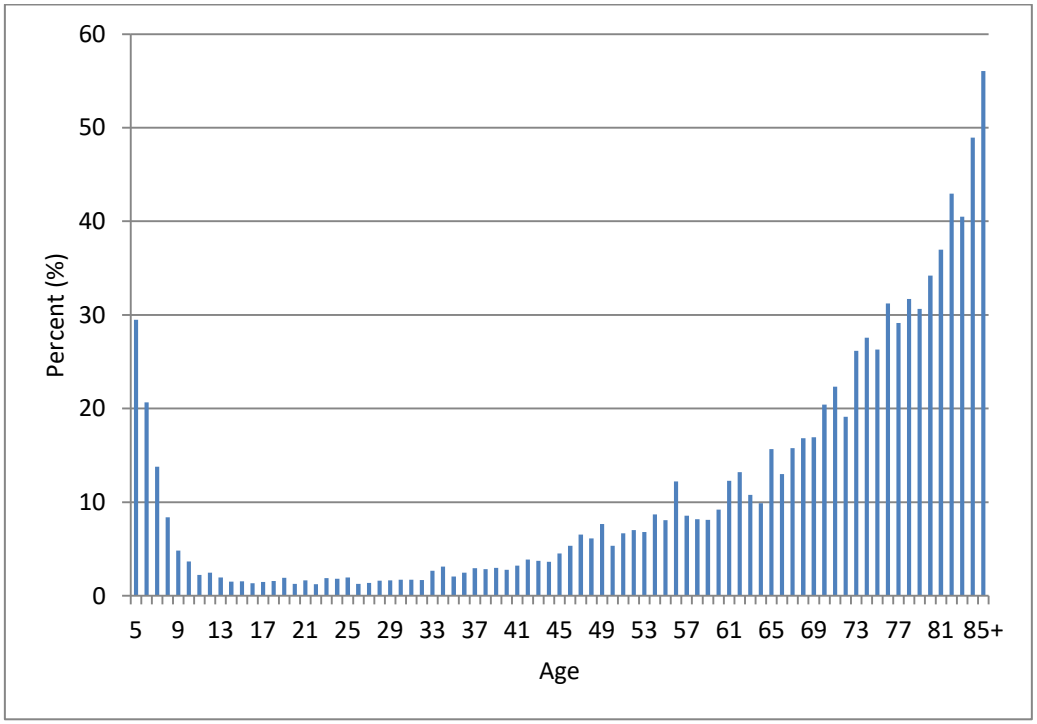
	Working age	General population
Broad	9.32	12.29
Wide	4.61	7.92
UN	3.03	5.11
Narrow	2.03	3.53

Estimates are weighted. Disability prevalence is calculated as an average, pooling the GHS 2011–2015 data.

Age is a key factor in determining disability prevalence, as many individuals develop activity limitations as they get older (WHO, 2011; Stats SA, 2014). Consequently, as seen in Table 3-3, disability is more prevalent within the general population than the working age population. This is further illustrated in Figure 3-2, which graphs UN disability prevalence by age for 2011. Figure 3-2 shows a convex relationship between disability and age. Disability prevalence is high among very young children (below age 9), before declining sharply. Prevalence plateaus between the ages of 10 and 40, before slowly rising as the population ages. Over 50% of those aged 85 years and above are categorised as disabled according to the UN definition. The average age among persons with disability is higher than among those without. The same relationship holds for all definitions of disability.

[36] The disability prevalence calculated from the GHS is lower than 7.5% calculated from the 2011 Census. This is likely due to the GHS not surveying within collective living quarters such as old age homes, hospitals, student housing and prisons. Therefore, the GHS is not representative of institutionalised households.

Figure 3-2: Disability age profile, UN Disability Index



Estimated data are weighted. Among individuals age 85 and above, average disability is calculated and captured within the graph. *Data Source:* GHS 2011.

The origin of disability has consequences for personal characteristics, such as education attainment, work experience, and in the development of coping mechanisms[37] (McKinney, 2013). Consequently, when and how disability develops plays a key role in determining participation and employment among persons with disability (McKinney, 2013). The GHS does not question individuals on how activity limitations originated. Thus, one is unable to distinguish between those individuals that grew up with disability and those who developed disability later in their lives. Some of the indirect consequences of how disability developed can be controlled for within regression analysis, for example education and age. However, other factors, such as the development of coping mechanisms, cannot be controlled for.[38]

[37] McKinney (2013) finds that there are large differences in the experience of disability among those who were born with disability and those who acquired disability later in life. For example, there was greater acceptance and understanding among those who grew up with disability. On the other hand, those who developed disability later in life reported feeling overwhelmed and unable to cope.

[38] This problem is partly solved by using the working age population as the growth in disability is primarily seen among those aged 65 and above.

Women are more likely to be classified as disabled than men (Stats SA, 2014; Department of Social Development, 2015). Table 3-4 shows the disability prevalence among males and females within the working age and general populations. The difference between male and female disability prevalence is calculated for each definition. With the working age population, 4.43% of males and 4.77% of females are disabled when defined according to the Wide definition. When defined using the UN definition, 2.92% of working age males are classified as disabled and 3.14% of females.

As the definition for disability becomes increasingly strict, the difference between disability prevalence among females and males decreases. Defined according to the Broad, Wide and UN definitions, the proportion of disabled females is higher than the proportion of disabled males, statistically significant at a 1% level. For example, the gap between male and female disability prevalence, defined according to the Broad definition, is 2.01%. Under the Narrow definition, the difference between females and males disability prevalence is closer to zero and there is no statistical difference in the proportion of disabled males and females within the working age population. This suggests that women are more likely to report having "some difficulty" in an activity than men. Additionally, the difference between the proportion of men and women who report disability defined under the Broad definition suggests that some difficulty in seeing may be especially prevalent among women.

Table 3-4: Disability prevalence by gender within the working age population and the general population

	Working age			General population		
	Male	Female	Gap	Male	Female	Gap
Broad	8.30	10.31	2.01***	11.08	13.43	2,35***
Wide	4.43	4.77	0.34***	7.45	8.37	0.92***
UN	2.92	3.14	0.22***	4.71	5.48	0.77***
Narrow	2.05	2.01	-0.04	3.41	3.65	0.24***

*** P≤0.001 The asterisk indicates whether there is a statistically significant difference between the proportion of disabled males and females. Estimated data are weighted. *Data Source:* GHS 2011–2015

3.4 DO MEN AND WOMEN REPORT DIFFERENT KINDS OF DISABILITY?

Two points are examined in this section. Firstly, why is the gap between disabled men and disabled women so much larger when disability is defined according to the Broad definition? Secondly, is this gap driven by women reporting different kinds of disability to men?

Table 3-5 shows the prevalence of seeing, hearing, communication, walking, remembering and self-care limitations within the working age population. For instance, 6.47% of individuals have some type of seeing difficulty, 5.72% experience "some difficulty" in seeing, 0.64% have "a lot of difficulty" in seeing and 0.11% are "unable" to see. Similarly, among working age females, 7.57% have some type of seeing difficulty.

Seeing difficulties are the most common activity limitation, primarily due to the prevalence of mild seeing difficulties. With the exception of the Wide definition, those with seeing difficulties account for the largest proportion of individuals categorised as disabled. This is especially true for the Broad and UN definitions which include mild seeing difficulties.

Communication and self-care limitations are the least common activity limitations. This is probably due to self-care and communication being more complex activities when compared with seeing, hearing and walking. This is reflected in the literature, with Schneider et al. (2009) finding that basic activity limitations are more common than complex activity limitations. They argue that individuals find ways to manage basic limitations so as to avoid complex limitations, such as self-care.

Table 3-5: Disability prevalence by activity limitation and gender

	Working age	Male		Female
Seeing – Total	6.47	5.33	***	7.57
Some difficulty	5.72	4.67	***	6.72
A lot of difficulty	0.64	0.53	***	0.75
Cannot do	0.11	0.12	*	0.10
Hearing -Total	1.44	1.38	***	1.50
Some difficulty	1.17	1.11	**	1.23
A lot of difficulty	0.19	0.18		0.20
Cannot do	0.08	0.10	*	0.07
Communication - Total	0.50	0.57	***	0.44
Some difficulty	0.32	0.35	**	0.30
A lot of difficulty	0.08	0.11	**	0.06
Cannot do	0.10	0.12	**	0.08
Walking - Total	1.67	1.58	***	1.76
Some difficulty	1.06	0.93	***	1.18
A lot of difficulty	0.39	0.38		0.39
Cannot do	0.23	0.28	***	0,19
Remembering - Total	1.71	1.68		1.74
Some difficulty	1.15	1.05	***	1.24
A lot of difficulty	0.42	0.46	**	0.38
Cannot do	0.14	0.17	**	0.11
Self-Care - Total	0.69	0.78	***	0.59
Some difficulty	0.39	0.42	**	0.39
A lot of difficulty	0.12	0.15	**	0.12
Cannot do	0.17	0.21	***	0.17

*** P≤0.001 ** P≤0.05 *P≤0.1. The asterisk indicates if there is a statistically significant difference between the proportions of males and females with an activity limitation.

Estimated data are weighted. *Data Source:* GHS 2011–2015.

Looking next to the differences between genders, Table 3-5 shows that a larger proportion of women report that they suffer from activity limitations in seeing, hearing and walking compared with males, significant at a 5% level. Mild seeing difficulties in particular are more prevalent among women than men. Thus, the Broad and UN definitions of disability, which include mild seeing difficulties, will include more women than men.

On the other hand, men are more likely to be experience difficulty in communication and self-care, significant at a 1% level. There is no statistical difference between the proportions of men and women with difficulties in remembering.

Table 3-6 groups activity limitations into three categories: mild ("some difficulty"), moderate ("a lot of difficulty") and severe ("cannot do"). As is also suggested by Table 3-4 and Table 3-5, a larger proportion of women than men report mild activity limitations, 3.17% and 2.77% respectively. On the other hand, severe activity limitations are more common among males. There is no statistical difference between the proportions of men and women with moderate activity limitations. Thus, the differences in disability prevalence among men and women are driven by women reporting significantly more mild actively limitations, specifically in seeing.

Table 3–6: Mild, moderate and severe activity limitations among males and females

	Male	Female
Mild	2.77	3.17***
Moderate	1.52	1.65
Severe	0.68	0.45***

*** P≤0.001. The asterisk indicates whether there is a statistically significant difference between the proportions of males and females with mild, moderate or severe activity limitations. Estimated data are weighted.

Data Source: GHS 2011–2015.

Males and females report differences in both the type and degree of limitation they experience. Thus, how disability is defined fundamentally changes the demographic of who is and is not characterised as disabled. This becomes problematic if the higher prevalence of women defined as disabled is due to a self-reporting bias. For example,

cultural and social norms, which condition men to project capability and strength, may result in men under-reporting physical limitations. The gender differences in self-reported functioning are not fully understood.

The theory supports the finding that disability prevalence is likely to be higher among women than men (WHO, 2011). The International Classification understands social, political and economic environments as affecting health and disability. In other words, individuals will be at a greater or lesser risk of developing disability depending on their surrounding environment.

Women more often function within an environment that places them at greater risk of developing disability. For example, women typically have less access to healthcare and are more likely to live in poverty[39] (WHO, 2011). Thus, the theory suggests that higher disability prevalence among women may result from a larger proportion of women experiencing activity limitations and is not necessarily the result of a self-reporting bias.

Using individuals over the age of 60 in the United States, Louie and Ward (2010), consider if the disparity in disability prevalence among men and woman is due to self-reporting bias. After controlling for age, ethnicity, education level, smoking comorbidities, serum albumin, knee pain, skeletal muscle index, body mass index, and physical performance tests[40] they find similar levels of self-reported physical limitation among older men and women. Similarly, comparing test subjects[41] ability to perform seven tasks with their self-reported activity limitation, Merrill et al. (1997) conclude that women's high disability prevalence is likely a reflection of true disability not a self-reporting bias.

Both Louie & Ward (2010) and Merril et al. (1996) use elderly test subjects. It is possible that the social and cultural norms which may motivate men to under report disability are

[39] Poverty has been found to interact strongly with health and the development of disability. For example, poverty can contribute to malnutrition, low birth weights and unsafe working and living conditions (WHO, 2011). This places individuals at a greater risk to developing disability. Furthermore, a study of 56 developing countries found superior health among those who were financially better off, and worse health among the poor (WHO, 2011).

[40] Physical performance tests included objective measures of functioning such as chair rises and timed walks.

[41] Test subjects were aged 71 and older.

more strongly felt within the working age population.[42] At the time of writing, we are unaware of any literature that has studied reporting bias between men and women within the working age population. Moving forward this gap within the literature needs to be addressed.

3.5 MODELLING THE EFFECTS OF DISABILITY ON EMPLOYMENT AND LABOUR FORCE PARTICIPATION

The primary aim of this dissertation is to assess the probability of persons with disability being economically active and finding employment. To achieve this, two logistic regressions are used for labour force participation and employment.[43] The dependent variables for participation and employment are binary and follow a Bernoulli distribution, where the dependent variable takes on a value of one to indicate 'success' with probability *p*, and zero to indicate 'failure' with probability *1-p*.[44] Maximum likelihood estimation is used to estimate the likelihood of employment and labour force participation.

The logistic regression is used to obtain an odds ratio, which can assess the impact of disability on employment and labour force participation. The odds ratio represents the odds of an outcome given exposure to a certain event or personal characteristics (for example disability), compared to the odds of an outcome without that exposure. In the sections below the odds ratio is used primarily to assess the effects of disability on labour force participation and employment relative to those without disability.[45]

[42] For example, Celentano, Linet & Stewart (1990) find that women aged between 12 and 29 were more likely to report headaches and seek out health care services, even after headache severity had been controlled for. Thus, the authors postulate that there may be great reporting of symptoms among women than men.

[43] Using a probit regression does not change the sign, ordinal magnitude, or the statistical significance of the following results.

[44] Labour force participation takes a value of one when an individual is economically active and zero otherwise. Employment takes on a value of one when an individual is employed, and zero otherwise.

[45] Persons with disability make up a small proportion for the working age population, especially when defined according to the UN and Narrow definitions of disability. Even fewer of these individuals are currently employed or looking for work. This small sample size makes finding statistically significant results difficult. Consequently, disability researchers have often used a high p-value threshold. For example, Mizumya and Mitra (2013) set a p-value threshold of 10%. Low statistical significance is not a reason to

The logistic functions can be represented using the follow specification,

Equation 1-1:

$$\Pr(y_i = 1) = logit^{-1}(\sum_{l=1}^{k} b_l x_i + cz_i) \quad for\ 1 = 1, \dots, n\ and\ \ l = 1, \dots k.$$

where y_i indicates the binary outcome of the dependent variables, labour force participation and employment.

Demographics and individual characteristics are controlled for through x_i. Within both the labour force participation and employment regressions, demographic and individual characteristics controls are included for gender, race, age, age squared, years of education, marital status and province. In addition, within the labour force participation logistic (logit) regression, controls are included for head of household status and whether an individual is the recipient of the Disability Grant. The Disability Grant variable is only included in the labour force participation regression, not the employment regression. Recipients of the Disability Grant are typically not economically active, neither looking for employment nor currently employed. [46] A full break-down of how these controls are constructed and defined can be found in the Appendix, Table A1.

The dummy variable for disability, z_i, and its coefficient, c, are of primary interest. The disability dummy variable takes on a value of 1 to indicate that an individual is disabled, and 0 if an individual is without disability. The logit regression is run separately for each of the three disability definitions, so that each regression produces a single disability coefficient or odds ratio. All else being equal, when the disability coefficient is negative and statistically significant, a disabled individual is less likely to be economically active or employed than an individual without disability. A disability odds ratio equal to one implies that there is no difference in labour force participation or employment between persons with and without disability. As the odds ratio diverges from one, the difference between disabled and abled participation and employment grows. An odds ratio of less than one implies that those with disability are less likely to be employed or economically

avoid research questions relating to disability, or else many questions relating to disability will likely never be answered.

[46] However, it should be noted that many of those who are currently unemployed and would qualify for the Disability Grant are not on the grant.

active than persons without disability. For example, a disability odds ratio within the participation regression of 0.7 means that the odds of a person with disability participating is 30% less than the odds of a person without disability participating.[47]

At times this regression is structured differently. Following Mizunoya and Mitra (2013), the logit regression is run separately for males and females, to better account for gender-related barriers to employment and labour force participation. Despite these changes, the overall structure of the logit regression model remains unchanged.

Logistic regressions require little to no multicollinearity among their independent variables.[48] The presence of strong multicollinearity results in unreliable estimates within the logit regressions. Furthermore, estimates become unstable as high multicollinearity increases the variance of coefficients. This is checked using a correlation matrix among the independent variables specified above. The correlation matrix finds there is sufficiently low inter-correlation between variables (seen in Table A2 in the Appendix).

It is possible that this logit model may suffer from reverse causality. In other words, labour force participation and disability, and employment and disability may be endogenous. There is strong evidence in the literature in support of this concern. Graham et al. (2014) and WHO (2011) note that the relationship between disability and employment and disability and labour force participation is complex, and is probably multidirectional or circular. For example, employment or job searching may negatively affect functioning and mental health through occupational stress or anxiety. Alternatively, employment may prevent the development of activity limitations through access to income, better nutrition and company health care or insurance.

In the presence of reverse causality, regression analysis produces biased estimates. A strategy to account for and deal with reverse causality is to include an instrumental variable, which would determine disability but not employment or labour force participation. However, the literature on this topic is limited and identifying such a variable is difficult (Mizunoya & Mitra, 2013).

[47] Calculated as 1-0.7 = 0.3

[48] Multicollinearity refers to when two or more independent variables are approximately linear combinations of one another.

At the time of writing we are unaware of any papers that use instrumental variables to account for reverse causality between disability and the labour market. Rather the issue of reverse causality has been largely ignored in both the international (Gannon, 2005) and local literature (Cramm et al., 2013; Mitra, 2008). Mizunoya and Mitra (2013) acknowledge that their logit model for the effect of disability on employment is likely to suffer from reverse causality and note that an instrumental variable could correct this. However, no further steps are taken to address the potential problems of endogeneity.

Two key reasons are identified for why the literature on disability within the labour market has largely ignored the problems of reverse causality. Firstly, identifying appropriate instrumental variables is complicated. This is primarily because the circular relationships between disability and an individual's social, political and economic environments are not yet fully understood (WHO, 2011). Secondly, as noted by Graham et al. (2014), there is:

> *"still widespread acknowledgement that we do not understand the nature of this complex relationship, and that we lack data to support theories of the relationship, particularly from developing contexts."*

Before an appropriate instrumental variable can be selected, greater understanding of the complexities of disability is required.

Given this limited literature, it is difficult to determine the direction of this bias. However, poverty has been strongly established as increasing the risk of disability, and this explains why disability prevalence is higher in developing countries (Graham et al, 2014). Employment, through the provision of income, lowers the chance of an individual falling into poverty, and consequently may lower the risk of disability. Accordingly, within the regression specified above, the presence of reverse causality may result in a negatively signed bias. Thus, the results that follow in this dissertation may provide a lower bound to the true effects of disability on employment.

This dissertation recognises that the logit model used may suffer from problems of reverse causality, but no further steps have been taken to correct this.

CHAPTER 4: THE IMPORTANCE OF DEFINITION IN DETERMINING THE EFFECTS OF DISABILITY ON LABOUR FORCE PARTICIPATION AND EMPLOYMENT

The discussion that follows uses the Broad, Wide, UN and Narrow definitions to assess employment and labour force participation rates among persons with disability in South Africa for the period 2011–2015. Furthermore, this discussion considers the importance of definition when considering disability empirically. This is done first by considering the summary statistics, and secondly using regression analysis. The empirical results that follow are calculated using the General Household Survey (GHS) data, pooling together the years 2011–2015.

4.1 DISABILITY, EMPLOYMENT AND LABOUR FORCE PARTICIPATION

Table 4-1 shows employment as a percentage of the working age population, labour force participation and the unemployment rates within the disabled and abled population, according to the Broad, Wide, UN and Narrow definitions.

The labour force participation rate ranges from 28.21% under the Narrow definition of disability to 49.57% under the Broad definition. Within the abled population 59.5% of individuals are economically active. These differences are statistically significant at a 1% level. The difference in participation between the abled and disabled populations is at most 31.16% and at least 10.12%. Thus, labour force participation is lower among those with disability.

Employment as a percentage of the working age population ranges between 22.28% and 40.95% among persons with disability, depending on the definition used. Comparatively, employment within the abled working age population is roughly 45.5% and fairly invariant to the definition used.[49] Consequently, the difference between employment among the abled and disabled is at least 4.49% under the Broad definition and at most 23.22% under the Narrow definition. Thus, Table 4-1 shows there is a

[49] As the definition of disability changes, so do the criteria for who is and is not classified as disabled. Consequently, many of those individuals defined as disabled under the Broad definition are defined as abled under the Narrow definition. This explains the slight changes in employment and labour force participation among the abled population across disability definitions.

substantial difference in labour force participation and employment between those with and without disability.

As one moves from the Broad to the Narrow definitions, employment and participation rates fall among persons with disability, and remain steady among those without disability. Unsurprisingly, employment and participation rates are lowest when only those with severe disability are included within the definition of disability.

Comparing the four disability definitions, employment and labour force participation rates among persons with disability are significantly higher when disability is classified according to the Broad definition. For example, among persons with disability, labour force participation falls from 49.57% to 35.73% when disability is defined according to the Broad and Wide definitions respectively. The only difference between the Broad and Wide disability definitions is the inclusion of mild seeing difficulties. This suggests that the Broad definition behaves differently to the Wide, UN and Narrow definitions due to the inclusion of mild sight limitations.

Table 4-1: Employment and labour force participation within the disabled and abled working age populations

	Broad			Wide			UN			Narrow		
	Disabled	Abled		Disabled	Abled		Disabled	Abled		Disabled	Abled	
Participation	49.57	59.69	***	35.73	59.85	***	32.17	59.57	***	28.21	59.37	***
Employment	40.95	45.44	***	28.07	45.84	***	25.63	45.63	***	22.28	45.50	***
Unemployment	17.38	23.86	***	21.43	23.40	***	20.31	23.40	***	21.02	23.37	*

*** P≤0.001 *P≤0.1 . The asterisk indicates whether there is a statistically significant difference between the proportions of employment, economic activity or unemployment within the disabled and abled populations. Estimated data are weighted.
Data Source: GHS 2011–2015.

Perhaps seemingly counterintuitively, across all definitions of disability, the unemployment rate is lower among persons with disability. For instance, 20.31% of those classified as disabled according to the UN definition are unemployed. Comparatively, 23.4% of those classified as abled are unemployed. There is a statistically significant

difference in the proportion of unemployment between the abled and disabled populations. As discussed above, the literature finds similar results.

It may appear counterintuitive that persons with disability can simultaneously have low employment and unemployment rates. However, despite low employment within the working age population, the extent to which persons with disability do not participate also lowers the unemployment rate.

4.2 CAPTURING THE NEGATIVE EFFECT OF DISABILITY ON LABOUR FORCE PARTICIPATION AND EMPLOYMENT

Table 4-2 shows the Broad, Wide, UN and Narrow disability coefficients and odds ratios for the logit regressions run on labour force participation and employment.

Result 1: Regardless of the definition used, persons with disability are significantly less likely to be economically active.

The disability coefficient on labour force participation is negative and statistically significant at a 1% level across all definitions. The odds ratio of disability on participation ranges from 0.777 under the Broad definition to 0.45 under the Narrow definition. This implies that when using the Broad and Narrow definitions, disability decreases the odds of being economically active by 22.3%[50] and 55%[51] respectively compared to an abled individual. Reflecting the literature, persons with disability have a lower probability of being economically active, with these negative effects growing with the degree of disability.

[50] Calculated using the odds ratio [1–0.777 = 0.223]
[51] Similarly calculated using the odds ratio [1–0.45]

Table 4-2: Disability coefficients in a logistic regression on the probability of being economically active and employed

	Broad	Wide	UN	Narrow
Probability that an individual is economically active:				
Individual is disabled	-0.253***	-0.573***	-0.634***	-0.798***
	(0.017)	*(0.023)*	*(0.028)*	*(0.036)*
Odds ratio	0.777***	0.564***	0.53***	0.45***
	(0.013)	*(0.013)*	*(0.015)*	*(0.016)*
Probability that an individual is employed:				
Individual is disabled	0.018	-0.071*	-0.105**	-0.189***
	(0.025)	*(0.037)*	*(0.048)*	*(0.062)*
Odds ratio	1.019	0.932*	0.9**	0.828***
	(0.026)	*(0.035)*	*(0.043)*	*(0.051)*

*** P≤0.001 ** P≤0.05 *P≤0.1. Standard error for disability coefficient in parentheses
Note: Additional controls for labour force participation are included, but not reported here are gender, race, age, age squared, education year, head of household, marital status, province and Disability Grant.
Note: Employment logit including only those within the labour force. Additional controls for employment are included, but not reported here are gender, race, age, age squared, education year, marital status and province.
Data Source: GHS 2011–2015.

Result 2: Among those participating in the labour market, disability reduces the probability of finding employment. However, these effects are smaller than found within the participation regression.

Looking next at employment, the disability coefficients range from 0.018 to -0.189 under the Broad and Narrow definitions respectively. Significance on the disability coefficients grows as the definition becomes increasingly strict. For instance, under the Broad definition, the disability coefficient holds no statistical significance. On the other hand, under the Narrow definition, the disability coefficient is statistically significant at a 1% level.

Table 4-2 suggests that among those choosing to participate, the odds of an individual, defined as disabled according to the Narrow definition, being employed are 17.2% lower than for individuals without disability. Similar results hold when the Wide and UN definitions are used. Conversely, under the Broad definition there is no evidence to suggest that disability lowers the probability of being employed.

Persons with disability are significantly less likely to participate, as well as to be employed. However, the absolute value of the disability odds ratio in the labour force participation regression is smaller than that in the employment regression. For example, under the Narrow definition, the absolute value of the odds ratio on employment is 0.828 compared to that of 0.45 on labour force participation. This suggests that currently persons with disability struggle more so in participating than in successfully finding employment.

4.3 DOES THE DEFINITION MATTER?

Tables 4-1 and 4-2 both suggest that using a Broad definition for disability produces different results than using the Wide, UN and Narrow definitions. When using the Broad definition, the difference in labour force participation between those with and without disability is comparatively small. Furthermore, only when disability is defined in this way is there no statistical difference on the probability of being employed between those with and without disability. Thus, the inclusion of "some difficulty" in seeing (i.e. the Broad definition) has large implications when studying the effects of disability on participation and employment.

As established above, disability is understood as resulting from the interaction between body and environment, leaving an individual unable to participate fully within society (WHO, 2013). If a limitation in one of the six functional domains does not affect participation or success within the labour market, it should be excluded from our disability definitions. Here we assess whether this is the case, and whether the inclusion or exclusion of mild seeing difficulties matters.

Moving forward, "mild" activity limitations is used to refer to individuals that report "some difficulty" in the six activity domains.

Table 4-3 shows the labour force participation and employment rate among those within the labour market. This is separated between those with mild seeing difficulties and those with any other mild limitation (excluding seeing). The labour force participation rate among those with and without a mild activity limitation, excluding seeing, is 38.07% and 59.85% respectively, statistically different at a 1% level. On the other hand, there is no statistical difference between the proportions of economically active individuals with and without mild sight limitations. Thus, Table 4-3 suggests that, unlike other mild activity limitations, mild seeing difficulties have little effect on labour force participation

Among those choosing to participate in the labour market, those with no mild activity difficulties (excluding seeing) have an employment rate of 76.61%. Comparatively, employment among those with a mild seeing difficulty and a mild activity difficulty (excluding seeing) is 84.45% and 78.55% respectively. Employment is substantially higher among those with mild seeing difficulties, statistically significant at a 1% level. Stats SA (2014) and the National Department of Social Development (2015) find similar results with respect to mild sight limitations and employment.

Table 4-3 suggests that mild difficulties in seeing have little effect on the propensity to participate and are positively associated with employment. The same is not evident among other mild limitations.

Table 4–3: Labour force participation and employment by mild seeing difficulties and other mild difficulties (excluding seeing)

	Mild seeing limitation		Mild limitation (excluding seeing)	
	Some difficulty	No difficulty	Some difficulty	No difficulty
Participation	59.45	58.70	38.07	59.37 ***
Employment	84.45	76.18***	78.55	76.61 **

*** P≤0.001 ** P≤0.05 The asterisk indicates whether there is a statistically significant difference between the proportions of economic activity or employment among those with "some difficulty" and those without.
Employment calculated as a percentage of those within the labour force,
Estimated are weighted. *Data Source*: GHS 2011–2015

The consequences of including mild seeing difficulties within the Broad definition of disability are further examined using regression analysis. A "mild" dummy variable was constructed for each of the six activity limitations (mild seeing, mild hearing, mild walking, mild remembering, mild self-care and mild communication).[52]

Table 4-4 summarises the results from a logit regression run on labour force participation and employment, showing only the mild coefficients for each activity limitation type. The logit uses the same structure as before, but the variable for mild activity limitations is used in place of the disability variable. The regression was run separately for each of the six mild activity limitations. The final column in Table 4-4, namely Mild, groups all those that report "some difficulty" in a functional domain, with the exception of seeing.

Result 3: Mild seeing difficulties are the only mild activity limitation not associated with a negative effect on labour force participation.

Considering labour force participation, the mild coefficients are negative and statistically significant for all activity limitations, with the exception of seeing. For example, the coefficient and the odds ratio for persons with "some difficultly" in hearing are -0.175 and 0.839 respectively, statistically significant at a 1% level. Therefore, the odds of an individual with mild hearing limitations participating in the labour market are

[52] For example, mild seeing takes a value of one when an individual has "some difficulty" in seeing and a value of zero when an individual has "no difficulty in seeing".

16.1%[53] less than for individuals without any hearing limitations. When activity limitations are grouped to exclude "some difficulty" in seeing, the odds of those with a mild limitation participating in the labour force is 36.7% lower than those without.

Sight is the only mild activity limitation to behave differently, reflecting the findings from Table 4-3.Those with mild seeing difficulties are equally as likely to participate in the labour market as those without mild sight limitations.

Table 4–4: Mild activity limitation coefficients in a logistic regression on the probability of being economically active and employed

	Seeing	**Hearing**	**Walking**	**Remembering**	**Self-care**	**Communication**	**Mild (excludes seeing)**
Probability that an individual is economically active:							
Individual has a mild limitation	0.017	-0.175***	-0.679***	-0.445***	-1.009***	-0.638***	-0.458***
	(0.020)	*(0.042)*	*(0.047)*	*(0.043)*	*(0.090)*	*(0.097)*	*(0.028)*
Odds ratio	1.02	0.839***	0.507***	0.641***	0.365***	0.528***	0.633***
	(0.021)	*(0.036)*	*(0.024)*	*(0.028)*	*(0.036)*	*(0.051)*	*(0.017)*
Probability that an individual is employed:							
Individual has a mild limitation	0.074**	-0.017	0.010	0.023	0.120	0.149	-0.013
	(0.030)	*(0.065)*	*(0.086)*	*(0.069)*	*(0.166)*	*(0.162)*	*(0.045)*
Odds ratio	1.076**	0.983	1.010	1.024	1.128	1.161	0.988
	(0.033)	*(0.064)*	*(0.087)*	*(0.071)*	*0.187*	*(0.189)*	*(0.044)*

*** P≤0,001 ** P≤0,05 Standard error for disability coefficient in parentheses

Note: Within the labour force participation logit, additional controls are included, but not reported here are gender, race, age, age squared, education year, head of household, marital status, province and Disability Grant. Within the employment logit, additional controls are included, but not reported here are gender, race, age, age squared, education year, marital status and province.

Among those choosing to participate, mild seeing difficulties are positively associated with the probability of successfully finding employment, statistically significant at a 5%

[53] Calculated from the mild hearing limitation odds ratio [1–0.839]

level. Persons with mild sight limitations are 7.6% more likely to be employed than those without any seeing difficulties. As was also the case for participation, mild seeing difficulties are the only activity limitation to behave in this way.

Within the five remaining activity domains there is no statistically significance difference in employment between those with and without mild limitations. Thus, mild activity limitations are not associated with negative effects on employment. This in itself comes back to the issue of definition, and whether those with mild activity limitations should be included within a definition of disability. Thus Table 4-4 suggests that the Narrow definition may be best at assessing the effect of disability on employment.[54]

In summary, Tables 4-3 and 4-4 show that mild seeing difficulties have no effect on participation, and are positively associated with the success of finding employment. When seeing difficulties are excluded, mild activity limitations have large implications within the labour market, specifically on participation.

It is beyond the scope of this dissertation to consider fully why "some difficultly" in seeing behaves differently from other mild activity limitations. Potential reasons include, firstly, that "some difficulty" in seeing may have fewer or less obvious consequences within the workplace and thus individuals are better able to function within this environment. Secondly, mild seeing difficulties are more closely related to age than other activity limitations. A larger proportion of those with mild seeing difficulty will have already established their careers and gained work experience before developing difficulties with sight. Thirdly, given its prevalence, fewer stigmas may be attached to mild difficulties with sight.[55]

Two key points are extracted from this discussion.

Firstly, the inclusion of mild seeing difficulties within the definition of disability does not reflect the current paradigm in understanding disability. Persons with mild seeing difficulties are equally as likely to participate in the labour market and have greater

[54] Under the UN definition, an individual is classified as disabled if he or she has at least two mild activity limitations. There continues to be no statistically significant effect on employment if an individual simultaneously experiences two mild activity limitations, regardless of the type of limitation.

[55] As also noted above, assistive devices are included for sight limitations. If an individual is currently using glasses, and this corrects for his or her difficulties in seeing, he or she will be marked as having no difficulty seeing. Consequently, access to glasses does not explain this finding.

success in finding employment. With respect to employment and participation, the abled population and those with mild seeing difficulties function within the labour market equally well. Given the objectives of this dissertation, disability definitions should exclude mild sight limitations.

Mild seeing difficulties are very prevalent. As discussed above, 5.72% of working age individuals experience 'some difficulty' in seeing. Mild seeing difficulties account for the largest share of individuals within the Broad disability definition. Consequently, the Broad definition of disability is heavily skewed by those with mild seeing difficulties, and the negative effects of disability are suppressed. This makes the Broad definition a poor measure for capturing the effects of disability on participation and employment.[56] From here on the Broad definition of disability will not be used in this study.

It is worth noting that the UN index includes those with mild limitation in at least two activities. This could potentially include mild sight limitations. The UN measure is not adapted to exclude mild seeing difficulties as it is an international standard and this dissertation wished to reflect this.

Secondly, mild difficulties in hearing, walking, remembering, self-care and communication have significant implications for labour force participation. The discussion above suggests that obstacles to participation are key in understanding the marginalisation of persons with disability, perhaps more so than the obstacles to employment. Thus, definitions that include mild activity limitation, such as the Wide and UN definitions, are needed if the effects of disability within the labour market are to be fully captured.

On the other hand, mild difficulties have no statistical effect on employment. Consequently, the Broad, Wide and UN definitions, which include mild activity limitations, may be less suited to assessing employment among those with disability. Rather, as the only definition to exclude mild sight limitations, disability defined according to the Narrow definition may be most applicable when considering employment.

[56] The Department of Social Development (2015) has used the Broad definition to quantify the effects of disability on labour force participation and employment. This dissertation recommends against doing so in the future.

Despite this, the UN definition of disability has been extensively used in academic and government publications to assess the effects of disability on employment.[57] For the remainder of this dissertation the primary focus will be on the Narrow definition when discussing employment.[58]

[57] For example, Stats SA (2014) primarily uses the UN definition of disability to assess the effects of disability on employment.

[58] While the Narrow definition of disability is best for assessing the effects of disability on employment, the Wide and UN definitions are still reported for robustness.

CHAPTER 5: IS THERE A GENDER PENALTY FOR DISABLED WOMEN?

The literature identifies disabled women as facing larger barriers than disabled men due to the combined disadvantages associated with gender and disability (WHO, 2011). However, Mizunoya and Mitra's (2013) work suggests that disability may represent a larger barrier among disabled men relative to abled men, while gender represents a larger barrier among disabled women relative to abled women. As of yet, this has not been considered in a South African context.

Next this dissertation considers how males and females with disability in South Africa fare differently with respect to labour force participation and employment. As also done above, results are calculated using the General Household Survey (GHS), pooling together the data from 2011–2015.

In this chapter two methods are used to assess the interaction between disability and gender. Firstly, while holding disability status fixed, a comparison is made between men and women. This allows one to assess the degree to which disabled women perform worse than disabled men.

Secondly, while holding gender fixed, a comparison is made between persons with and without disability. Holding gender fixed, one is able to consider the effects of disability among individuals facing the same gender barriers, and determine whether the effects of disability itself are felt more strongly among men or among women. By comparing the magnitude of the effects of being female to the effects of disability one is able to determine whether the barriers faced by women are primarily the result of disability or of gender.

5.1 PARTICIPATION AND EMPLOYMENT AMONG DISABLED MALES AND FEMALES

Table 5-1 shows labour force participation and employment among those with and without disability, separated by gender.

Table 5-1: Employment and labour force participation within the disabled and abled populations, separated by gender

	Participation			Employment			Unemployment		
	Male	Female		Male	Female		Male	Female	
Wide									
Disabled	38.28	33.45	***	30.99	25.46	***	19.04	23.88	***
Abled	66.92	53.03	***	52.95	38.98	***	20.87	26.49	***
UN									
Disabled	33.2	31.24	**	27.25	24.19	***	17.93	22.57	**
Abled	66.63	52.77	***	52.72	38.79	***	20.87	26.49	***
Narrow									
Disabled	28.02	28.40		22.94	21.62		18.11	23.86	**
Abled	66.44	52.58	***	52.59	38.67	***	20.85	26.44	***

*** P≤0.001** P≤0.05 The asterisk indicates whether there is a statistically significant difference in the proportions of employment, economic activity or unemployment between males and females.
Estimated data are weighted. *Data Source:* GHS 2011–2015.

Labour force participation among disabled males ranges between 28.02% and 38.28%, depending on the definition used. Comparatively, labour force participation ranges between 28.4% and 33.45% among disabled females. Thus using the Wide and UN definitions of disability, disabled males participate more than disabled females.

However, there is no statistical difference between the proportions of economically active disabled men and women when disability is defined according to the Narrow definition. Table 5-1 suggests that disabled men and women, defined according to the Narrow definition, are equally as likely to participate within the labour market, once again pointing to the importance of definition in evaluating labour market outcomes for individuals with disability.

Along with lower participation, the unemployment rate is higher among disabled females than disabled males. For example, using the Narrow definition for disability, unemployment among disabled males and females is 18.11% and 23.86% respectively.

Across all definitions of disability, there is a statistically significant difference in the proportion of unemployed disabled males and females, significant at a 5% level. Therefore, with the exception of the Narrow definition, disabled men participate more and have greater success within the labour market than disabled females.

Hence it appears that disabled women fare worse than disabled men, which suggests a gender penalty within the disabled community. However, this penalty is also evident when comparing abled women to abled men, with abled women also faring worse. Taken together, this points to the importance of gender as a discriminating factor in terms of labour market outcomes.

However, Table 5-1 also suggests that the difference between abled and disabled male labour force participation is larger than the difference between abled and disabled female participation. Therefore, disabled males participate less relative to abled males, than disabled females relative to abled females. In other words, the negative relationship between disability and participation is larger among males than females. This suggests that the barriers faced by disabled males and females may differ. While disability may primarily explain low participation among disabled men, for women it appears that both gender and disability matter.

Next a regression was run to determine the effects of gender on labour market outcomes within the disabled community. Table 5-2 summarises the results from a logit model run on labour force participation and employment respectively. Regressions were run separately for the abled and disabled populations. Only the coefficient and odds ratio for the female variable are shown.[59]

Result 4: On balance, there is no significant difference in the likelihood of participation in the labour market between men and women with disability.

Interpreting Table 5-2, the female coefficient on participation varies from -0.253 when disability is defined according to the Wide definition to 0.013 under the Narrow definition. The female coefficient among the abled population is roughly -0.705. Thus abled females are 29.5% less likely to participate than abled males.

[59] Female is coded as a dummy variable, taking on a value of one when an individual is identified as female and zero if male.

Only when disability is defined under the Wide definition is the female variable statistically significant. Based on this odds ratio, defined according to the Wide definition, a disabled female is 22.3% less likely to participate within the labour market than a disabled male.

The negative relationships between being female and disabled on labour force participation do not hold across all definitions of disability. Reflecting the findings from Table 5-1, among those with disability, defined according to the UN or Narrow definitions, being female has no statistically significant effect on the probability of participating.

Table 5-1: Gender coefficient for logistic regression on the probability of economic activity or employment, within the disabled and abled working age populations

	Wide		**UN**		**Narrow**	
	Disabled	Abled	Disabled	Abled	Disabled	Abled
Probability that an individual is economically active:						
Female coefficient	-0.253***	-0.709***	-0.077	-0.706***	0.013	-0.702***
	(0.045)	*(0.01)*	*(0.057)*	*(0.01)*	*(0.072)*	*(0.01)*
Female odds ratio	0.777***	0.492***	0.926	0.494***	1.013	0.496***
	(0.035)	*(0.005)*	*(0.052)*	*(0.005)*	*(0.073)*	*(0.005)*
Probability that an individual is employed:						
Female coefficient	-0.243***	-0.372***	-0.162*	-0.371***	-0.227*	-0.369***
	(0.073)	*(0.013)*	*(0.096)*	*(0.013)*	*(0.125)*	*(0.013)*
Female odds ratio	0.784***	0.689***	0.851*	0.69***	0.797*	0.692***
	(0.057)	*(0.009)*	*(0.082)*	*(0.009)*	*(0.100)*	*(0.009)*

*** P≤0.001 *P≤0.1. Standard error for disability coefficient in parentheses. Gender: Female =1, Male=0
Note: Additional controls for LFP included, but not reported here, are, race, age, age squared, education year, head of household, marital status, province and Disability Grant.
Note: Additional controls for employment included, but not reported here are, race, age, age squared, education year, marital status and province.

Result 5: While disabled women and men are equally as likely to participate within the labour market, disabled women are significantly less likely to be employed.

Looking next at employment within the labour market, the female coefficient on employment is negative and holds statistical significance across all definitions of disability. Accordingly, among those individuals choosing to participate, being female lowers the probability of being employed. This is true within both the abled and disabled populations. For example, under the Narrow definition, disability among women negatively affects the likelihood of being employed by 20.3% compared to disabled men. Within the abled population, the odds of an abled female being employed are 30.8% less than the odds of an abled male.

Disabled women fare worse than disabled men, suggesting a gender penalty within the disabled community. Again, this penalty is also evident when comparing abled women to abled men, with abled women also faring worse. Taken together, this suggests that gender is an important discriminatory factor in terms of labour market outcomes for all women.

5.2 DO WOMEN WITH DISABILITY DO WORSE BECAUSE OF THE NATURE OF THEIR DISABILITY?

It is interesting to note that the absolute value of the gender coefficient on employment sees little change between the Wide and Narrow definitions. Within the disabled community, being female lowers the odds of being employed by 21.6% and 20.3% compared to males when disability is defined according to the Wide and Narrow definitions respectively. Thus, the degree of disability appears to have little effect on the proportions of disabled men and disabled women employed.[60]

As discussed above, the disability definitions group together activity limitations in seeing, hearing, walking, remembering, self-care and communication. However, women

[60]The UN disability coefficient does not follow this pattern. This is probably due to the inclusion of mild seeing difficulties within the UN definition. A larger proportion of females experience "some difficulty" in seeing. Furthermore, based on the discussion above, mild seeing difficulties are associated with positive effects on employment. Consequently, the inclusion of mild seeing difficulties in the UN definition of disability probably suppresses the negative effects of being female on employment, explaining the low coefficient. This is not evidence against the degree of disability having little effect on employment among disabled males and females, given that only mild seeing difficulties are included, so the UN index remains an internationally standard measure.

and men differ with regard to their prevalence of certain types and severity of activity limitations. Here we consider whether the negative relationship between being female and employment are driven by differences in the type or severity of activity limitation reported.

Table 5-3 shows the female coefficients for a regression on employment, run separately among those with each activity type. For example, among those with a Broad sight limitation within the labour force, there is no statistically significant difference in the probability of employment between men and women. Only when the logit regression is run among those with a Broadly defined hearing limitation or a Narrowly defined walking limitation are the gender coefficients statistically significant at a 10% level.

Table 5–3: Logit regression on employment separated by limitation type and severity

	Broad activity limitations	Narrow activity limitations
Female coefficient, among those with sight limitation	0.055	-0.074
	(0.061)	(0.186)
Female among those hearing limitation	-0.209 *	-0.195
	(0.123)	*0.321)*
Female coefficient among those with walking limitation	0.117	0.769 *
	(0.164)	(0.398)
Female coefficient among those with remembering limitation	-0.045	-0.569
	(*0.136)*	*(0.356)*
Female coefficient among those with self-care limitation	0.104	0.539
	(0.326)	*(0.671)*
Female coefficient among those with communication limitation	-0.097	n/a[61]
	(0.339)	

*P≤0.1. Standard error for disability coefficient in parentheses
Note: Additional controls included, but not reported here, are, race, age, age squared, education year, marital status and province. *Data source:* GHS 2011–2015.

[61] The sample size of individuals with Narrow limitations in communications who are participating within the labour market is too small to run the logit regression.

Based on the findings from Table 5-2, using the Narrow definition, disabled women are less likely to find employment. However, among those with a Narrow walking limitation, women are more likely to be employed than men. This suggests that Narrow walking limitations do not contribute to the negative gender coefficient found in Table 5-2.[62]

However, the lack of statistical significance in the female coefficients for seeing, hearing, self-care, and remembering suggests that no single activity limitation explains the negative relationship between being female and employment; rather it is explained by the distribution of gender within the disability definition as a whole. Consequently, the negative relationship between being female and employment do not appear to be driven by differences in a single type of activity limitation. In other words, women do not experience worse employment outcomes because they have different activity limitations compared to their male counterparts.

5.3 DOUBLE DISCRIMINATION

Based on the discussion in Chapter 4, persons with disability are less likely to participate and find success within the labour market. Table 5-2 shows that within the disabled community, women with disability face greater barriers to employment than men with disability. This difference is not explained by differences in the type or severity of activity limitation reported between men and women.

Although there is no statistical difference in the proportions of severely disabled men and women participating in the labour market, disabled women are less likely to be employed. Hence, a larger proportion of disabled women than disabled men are actively searching but not finding employment.

Results 4 and 5 may suggest that the barriers faced specifically by disabled women within the labour market are primarily demand side, rather than supply side. This is also reflected in the labour market theory where most of the gender differences identified affect the demand for labour rather than the supply of labour (see Figure 1-1). This has important implications for policy design as it implies that focus must be directed towards

[62] Similarly, among those with a Broadly defined hearing limitation, being female negatively affects the probability of being employed. This may suggest that hearing limitations, which are more prevalent among women, significantly contribute to the negative female coefficient among those with a Wide disability shown in Table 5-2.

employers and employment services if the gap between disabled men and women is to be closed.

It would appear then that disabled women face a double discrimination within the labour market, resulting from both their gender and their disability status. Consequently, disabled men do better within the labour market than disabled women. However, there is no reason to assume that the effects of gender and disability are felt equally. In what follows we use regression analysis to consider how the barriers facing disabled males and females differ in nature and magnitude.

A logit regression is run separately by gender. Women face the same gender barriers, regardless of their disability status. Thus separating the regression by gender allows one to consider the effects of disability among individuals who face the same gender barriers. Mizunoya and Mitra (2013) used the same method to assess employment among men and women with and without disability.

Table 5-4 shows a logistic regression for participation and employment within the labour force separated by gender. Only the disability coefficients and odds ratios are shown. Using Table 5-4, comparisons will be made between abled men and disabled men, and between abled women and disabled women to assess the relationship between disability, labour force participation and employment. [63]

From here on, the UN definition is used primarily to consider the effects of gender and disability on labour force participation and employment. This is done for clarity. However, the Wide and Narrow definitions of disability are still presented in the tables for the sake of comparison.

[63] A Wald test is performed on the each of the six regression runs on labour force participation to ensure that the disability coefficient is different from zero and that the inclusion of a disability variable creates a statistically significant improvement in the model's fit. Within both the male and female population, the null hypothesis that the coefficient for Wide, UN and Narrow disability is equal to zero is rejected at a 1% level. Thus the inclusion of a disability variable improves the fit of the model.

Table 5–4: Disability odds ratio within a logistic regression on the probability of being economy active and employed, separated by gender

	Wide	UN	Narrow
Probability that an individual is economically active:			
Individual categorised as disabled within the male population	0.423 ***	0.362 ***	0.300 ***
	(0.016)	*(0.017)*	*(0.017)*
Individual categorised as disabled within the female population	0.691 ***	0.686 ***	0.610 ***
	(0.020)	*(0.025)*	*(0.028)*
Probability that an individual is employed:			
Individual categorised as disabled within the male population	0.936	0.871 *	0.839 *
	(0.053)	*(0.064)*	*(0.080)*
Individual categorised as disabled within the female population	0.929	0.908	0.805 ***
	(0.047)	*(0.058)*	*(0.066)*

*** P≤0.001 *P≤0.1. Standard error for disability coefficient in parentheses.
Note: Additional controls for labour force participation included, but not reported here, are disability race, age, age squared, education year, head of household, marital status, province and Disability Grant.
Note: Additional controls for employment included, but not reported here, are disability, race, age, age squared, education year, marital status and province.
Logit run separately for working age males and females.

Result 6: Disabled males participate less relative to abled males than disabled females relative to abled females.

Interpreting Table 5-4, among working age males, the odds ratio on labour force participation is 0.362 defined according to the UN definition. In comparison, among

working age females, the disability odds ratios is 0.686. The results are statistically significant at a 1% level, across all disability definitions.

Consequently, defined under the UN definitions, if one is male, disability decreases the odds of being economically active by 63.8%, compared to abled males. Comparatively, disability among females decreases the odds of being economically active by 31.4%, compared to abled females.

Disabled males are participating less than disabled females, relative to their abled counterparts. In other words, among individuals with disability, the lowering of labour force participation is significantly more pronounced among males than females.[64] This is exacerbated as the definition for disability becomes increasingly strict.[65]

Result 7: With respect to employment, the gap between women and men with disability, relative to their abled counterparts, is small.

With respect to labour force participation, the finding that the effects of disability are more pronounced among males than females is clear and consistent across all definitions of disability. This is not the case for employment, where the effects of disability between males and females is dependent on the definition. [66]

Using the UN definition of disability, disabled women and abled women are equally as likely to be employed. However, among males, disability negatively affects the probability of employment. If one is male, disability decreases the odds of being employed by 12.9%,

[64] The same is also found under the Wide and Narrow definitions of disability.

[65] When the Narrow definition of disability is broken up into its components of severe activity limitations in seeing, hearing, walking, remembering, communication and self-care, all show the negative effects of activity limitation on labour force participation to be larger among males than females (as seen in the Appendix, Table A3). The same is found for Broad limitations in seeing, hearing, walking, remembering, self-care and communication. Therefore, the results from Table 5-4 are not driven by a specific type or severity of activity limitation. Rather, across all types of activity limitation, the effects of disability on labour force participation are significantly more pronounced among males than females.

[66] A Wald test was performed on each of the six regressions run on employment. When disability is defined according to the Wide definition, one fails to reject the null hypothesis that the disability coefficient is equal to zero. This is true for both the male and female populations. The Wald test suggests that including the Wide disability variable does not improve the model's fit. Defined according the Narrow definition, the null hypothesis that the disability coefficient is equal to zero is rejected at a 10% level among both males and females. Thus, under the Narrow definition of disability, the inclusion of a disability coefficient improves model's fit.

compared to abled males. Thus, under the UN definition, the negative relationship between disability and employment are more strongly seen among males than females.[67]

However, the difference in employment between males and females is small, and significantly less pronounced than was seen for labour force participation. Therefore, among those choosing to participate within the labour market, the effects of disability on employment are relatively equal between the male and female populations.

To summarise, disabled men fare worse than disabled women with respect to labour force participation relative to their abled counterparts. Thus disability is a larger constraint in terms of participation among males with disability than females with disability. Simultaneously, based on the discussion above, all women participate less than men. Thus disabled women experience a '*double discrimination*' on labour force participation.[68]

On the other hand, disabled men and women fare the same in terms of employment relative to their abled counterparts. Among those choosing to participate, the effect of disability is small. However, again, all women, abled and disabled, do worse than men. Therefore, there is still a significant gender effect in determining employment outcomes. Accordingly, the double discrimination against disabled women is felt primarily with regard to participation, and not employment.

5.4 GENDER, AND NOT DISABILITY, IS THE PRIMARY BARRIER FACED BY DISABLED WOMEN

The above discussion considers the effect of gender and disability on labour force participation and employment and finds that disabled women experience a double discrimination with respect to labour force participation However, there is no reason to

[67] There is no statistical significance in the disability odds ratio among both males and females when defined according to the Wide definition. Thus, when mild activity limitations are included in the definition of disability, there is no evidence to suggest that the effects of disability on employment are larger among either males or females. The same is not found under the Narrow definition of disability, which, as discussed above, is the best definition for assessing the effects of disability on employment. Among those males participating within the labour market, disability defined according to the Narrow definition decreased the odds of being employed by 16.1% compared to abled males. On the other hand, a Narrowly defined disability among females lowers the odds of being employed by 19.5% compared to abled females. Both are statistically significant at a 10% level. Therefore, under the Narrow definition, disabled males do better relative to abled males than disabled females relative to abled females. However, this difference is small.

[68] These results are further confirmed in Table 5-5.

assume that the effects of gender and disability are of equal magnitude or importance among men and women. Rather, Table 5-4 suggests that the barriers facing disabled males and females are likely to differ in nature and magnitude.

Gender is a barrier to participation and employment, and contributes to the outcomes experienced by disabled women. Based on the results from Table 5-2, defined under the UN definition, an abled woman is 50.6% less likely to participate compared to an abled man. From Table 5-4, a disabled woman is 31.4% less likely to participate than an abled woman. Consequently, among women, the negative effects on participation of being female as opposed to male are larger than the negative effects of disability. This is true for all definitions of disability. Therefore, although disability is important, gender is the primary reason for low participation among disabled women.

This is further confirmed by Table 5-5 which is constructed using a logit regression on participation and includes an interaction term between disability and gender.[69] It shows the predicted probability of participating within the labour market for every combination of disability and gender status. For example, defined according to the UN definition, the odds of a male with a disability being economically active are 0.220. Comparatively, the odds of a male without a disability being economically active are 0.687. Thus males with a disability have a 22% chance of being economically active, while an otherwise comparable abled male has a 68.7% chance of being economically active.

Reflecting the findings discussed above, across all definitions of disability, abled males are decidedly better off than any other group, followed by abled women. The difference in labour force participation between disabled men and women, defined according to the UN definition, is present, but small.[70]

The marginal effect of disability among males is the difference between the odds of an abled male and a disabled male being economically active.[71] Similarly, the marginal effect

[69] The logit regression was run the same way as described above. However, it included an interaction term between disability and gender.

[70] According to the Wide definition, females with a disability are worse off with respect to labour force participation than any other group. When disability is defined according to the Narrow definition, disabled males perform worse with respect to labour force participation than disabled females. This reflects the findings discussed above, namely that when mild activity limitations are included in the definition of disability, women with a disability participate less than men with disability.

[71] Among males, defined according to the Narrow definition, being abled, as opposed to disabled, increased the predicted probability of being economically active from 0.115 to 0.684.

of disability among females is the difference between the odds of an abled and a disabled female being economically active.[72] All else being equal, the marginal effects show the change in an individual's predicted probability of participating as his or her disability status changes.

For all definitions of disability, the marginal effect of disability is larger among men than it is among women. Defined according to the UN definition, disability lowers the odds of a male being economically active by 46.7%, and the odds of a female being economically active by 27.3%. These findings are statistically significant at a 1% level for both males and females, across all definitions of disability. Thus, reflecting the findings from Table 5-4 above, disability has a larger effect on the probability of being economically active among males than females.

Table 5–5: Predictive probability of labour force participation among every combination of gender and disability

	Wide	UN	Narrow
Abled male	0.691 ***	0.687 ***	0.684 ***
	(0.002)	*(0.002)*	*(0.002)*
Abled female	0.488 ***	0.484 ***	0.481 ***
	(0.002)	*(0.002)*	*(0.002)*
Disabled male	0.284 ***	0.220 ***	0.155 ***
	(0.007)	*(0.007)*	*(0.007)*
Disabled female	0.231 ***	0.210 ***	0.172 ***
	(0.005)	*(0.006)*	*(0.007)*
Marginal effect of disability among men	-0.407 ***	-0.467 ***	-0.529 ***
	(0.007)	*(0.007)*	*(0.007)*
Marginal effect of disability among women	-0.257 ***	-0.273 ***	-0.308 ***
	(0.005)	*(0.006)*	*(0.007)*

*** P≤0.001 Standard error for disability coefficient in parentheses. Adjusted predictors calculated at means. *Note:* Controls for labour force participation included for disability, gender, a gender disability interaction term, race, age, age squared, education year, head of household, marital status, province and Disability Grant.

[72]Comparatively, among females who are abled as opposed to disabled, the probability of being economically active increased from 0.172 to 0.481.

Similarly, Table 5-6 uses an interaction term for disability and gender to consider the predicted probability of being employed for every disability and gender status. Table 5-6 shows that men, regardless of their disability status, do better than women. For example, defined according to the UN definition, disabled males have an 84.3% chance of being employed, while an otherwise comparable abled female has a 76.6% chance of being employed. Thus, conditional on participation, the effects of gender on employment are substantial.

Considering next the relationship between disability and employment, among those participating in the labour market, disabled men and women are more likely to be employed than their abled counterparts. However, these differences are small. For example, defined according to the UN definition, disability increases the odds of a male being economically active by 1.8%, and the odds of a female being economically active by 3.6%. As discussed above, this is due to very few persons with disability participating in the labour market.

Therefore, in summary, disability among males is associated with a large negative effect on the odds of participation, regardless of the type and severity of disability. Males experience a greater penalty for disability with disability having a less substantial consequence on participation among females. Rather, females experience a larger penalty for gender.

Among those job searching, disability has little effect on the success of finding employment. These finding suggests that barriers relating to gender are primarily responsible for holding women back. Gender contributes to a larger share of the total penalty experienced by disabled women within the labour market.

This has significant consequences for policy design. Policy cannot focus solely on disability. If this were to be so, disabled males would be likely to experience larger benefits than disabled females. Rather, disability policy must be designed to form links between gender and interest groups working within the disability and female communities.

Table 5-6: Predictive probability of employment among every combination of gender and disability

	Wide	UN	Narrow
Abled male	0.824 ***	0.825 ***	0.825 ***
	(0.001)	*(0.001)*	*(0.001)*
Abled female	0.766 ***	0.766 ***	0.766 ***
	(0.002)	*(0.002)*	*(0.002)*
Disabled male	0.842 ***	0.843 ***	0.838 ***
	(0.007)	*(0.010)*	*(0.013)*
Disabled female	0.788 ***	0.802 ***	0.785 ***
	(0.008)	*(0.010)*	*(0.013)*
Marginal effect of disability among men	0.017 **	0.018 *	0.014
	(0.008)	(0.010)	(0.013)
Marginal effect of disability among women	0.023 **	0.036 ***	0.018
	(0.008)	(0.010)	(0.014)

*** P≤0.001 ** P≤0.05 *P≤0.1. Standard error for disability coefficient in parentheses
Adjusted predictors calculated at means. *Note:* Additional controls for labour force participation included for disability, gender, a gender disability interaction term, race, age, age squared, education year, marital status, province.

CHAPTER 6: IMPROVING PARTICIPATION AND EMPLOYMENT AMONG PERSONS WITH DISABILITY

The importance of definition has been highlighted in this dissertation. Choosing which individuals to include and exclude when measuring disability is no easy task, but one with serious implications. Four definitions of disability have been considered: Broad, Wide, UN and Narrow disability.

The most important point to be extracted from this discussion is that the inclusion of mild seeing difficulties within the definition of disability does not reflect the current paradigm in understanding disability. Definitions that include mild seeing limitations, such as the Broad definition, are heavily skewed, and the negative relationship between disability, employment and labour force participation are suppressed. Thus definitions that include mild seeing limitations are a poor metric for assessing the effects of disability on employment and labour force participation.

Despite this, the Department of Social Development (2015) and Stats SA (2014) have defined disability according to the Broad definition to assess the effects of disability within the labour market. In the future more consideration must be given to who is and is not categorised as disabled.

Furthermore, the discussion highlights the importance of updating definitions of disability depending on individual objectives. The Wide measure was useful in assessing the relationship between disability and labour force participation; however, it is less suited to considering the relationship between disability and employment. There needs to be greater awareness among governments, academics and organisations working within the disabled community of the implications of disability definition. While internationally comparable definitions are important, those studying disability should not feel pressured to used established disability definitions, but rather tailor their empirical measure of disability to meet their need.

These four definitions are used to show that persons with disability face barriers to participation and employment not faced by those without disability. Governments play a key role in setting the agenda to remove such barriers. If not, segregation and inequality between individuals with and without disability will be perpetuated further.

In the South African context, three key recommendations can be extracted from the above discussion.

- Firstly, participation is the main barrier faced by persons with disability in South Africa. Therefore the focus must be on removing the barriers that prevent those with disability from supplying labour and the demand-side factors that contribute to persons with disability becoming discouraged.
- Secondly, although they are less pronounced than participation barriers, barriers to employment remain prevalent. This is especially true among disabled women who have less success in finding employment than disabled men. Our results suggest that in South Africa, a larger proportion of disabled women than disabled men are actively searching for but not finding employment. Barriers that prevent employment, specifically among disabled women, must be addressed and removed.
- Thirdly, and linked to both of the points above, men experience a greater penalty for disability, while women experience a greater penalty for gender. Therefore disability policy must include an explicit consideration of gender. If not, the benefits of disability policy may be captured primarily by disabled men. This may further marginalise disabled women whom are, on average, worse off than disabled men with respect to participation and employment.

In the light of these general recommendations, we briefly consider how these objectives can be achieved, considering what has been successful in other countries, and where possible, how South Africa compares with this. However, the WHO (2011) notes that "there are few documents providing a compilation and analysis of the ways countries have developed policies and responses to address the needs of people with disabilities". Consequently, the discussion that follows has relied heavily on the WHO (2011) report.

Furthermore, a critical gap exists in the developmental policy debate, with disability being largely ignored (Groce, Kept, Lang, & Train, 2011). Very few international development initiatives systematically include persons with disability within the programmes.[73] Even fewer use quantitative indicators to measure and assess the impact of disability policy (Groce et al., 2011). Only through the development of robust

[73] This is true for NGOs, bilateral organisations and the UN.

quantitative indicators can policy benchmarks and standards be developed (Groce et al, 2011). Consequently, many of the policy recommendations currently being made by those such as the United Nations and the World Health Organization have little quantitative backing.

Most of the available quantitative assessments of disability programmes have been conducted in Western developed countries. Very little research of this nature has been conducted in developing countries, and even less in Africa. This is a significant gap in the literature and it should be kept in mind when interpreting the discussion that follows.

South Africa's policy largely reflects the current understanding of best practice, and much of this has been written into law. However, South Africa's implementation of such policy is severely lacking (McKinney, 2013). There is little commitment to monitoring, evaluating and connecting the relevant interest groups. Furthermore, McKinney (2013) notes that South Africa's legislation is often fragmented and inconsistent, making implementation difficult. Consequently, the objectives of inclusivity fail to be met.

6.1 LINKING PERSONS WITH DISABILITY TO EMPLOYMENT

The needs and perspective of employers need to be acknowledged and addressed if persons with disability are to be brought into the workforce. In both the international and local literature, employers are often found to be ignorant and have misconceptions about disability, and the productivity of persons with disability. For example, in Australia employers reported feeling hesitant to employ persons with disability, as they did not feel they had the capability or knowledge to do the work (Waterhouse, Kimberley, Jonas, & Glover, 2010). In the United States, Schurz, Kruse and Blanch (2005) note that 31% of employers identify lack of knowledge as a primary reason for not employing persons with disability.[74] In South Africa, McKinney (2013) finds that employers are often unsure about how to support or accommodate employees with disability, in both the recruitment and selection phases and in the employment phase.

[74] Comparatively, only 16% of employers identified cost to accommodate as the primary barrier (Schur, Kruse and Blanch, 2015). The Workplace Modifications Scheme in Australia provides funding for modifications to new employers of persons with disability (WHO, 2011). Programmes such as these provide incentives to business to employ persons with disability. In the discussion above we have focused on inadequate knowledge about persons with disability due to its prevalence

Employment agencies have the potential to assist by acting as an intermediary between employers and persons with disability.[75] The development of networks among these agencies can build capability and confidence among employers, as the information and support they need can be more easily accessed. Many countries currently have established employment agencies for persons with disability, including South Africa, China, India, Brazil, the United Kingdom, Spain, Australia, Denmark and Belgium. China currently has over 3 000 employment agencies offering services to persons with disability (WHO, 2011).

A study from Australia, in which 40 employers were interviewed,[76] finds that larger enterprise and public agencies are mostly informed and aware of the organisations available to assist with disability. However, small to medium-sized businesses do not have access to adequate information (Waterhouse et al., 2010). Similarly, Kulkarni and Kote (2014) find that employers in India are largely unaware of the services available to assist them in hiring and supporting persons with disability. This ignorance of disability leaves many employers feeling uncertain and fearful with respect to persons with disability entering the workforce.

Furthermore, Waterhouse et al. (2010) find that in Australia small to medium-sized businesses struggle to communicate effectively with professionals and advocates working with the disabled community. Employers often find the language used by such groups to be confusing, indirect and opaque (Waterhouse et al., 2010).[77] For this reason small to medium-sized businesses consistently identify the need for greater, clear, up-front assistance.

Among those already receiving third-party assistance in Australia, small to medium-sized businesses identify this support as being the most persuasive measure for employing more persons with disability (Waterhouse et al., 2010). Many of the Australian businesses interviewed noted that without such third-party arrangements, they would

[75]The WHO (2011) identifies several successful employment agencies within Brazil, Rio, Spain, the United Kingdom and South Africa, which successfully job search, match and teach interview skills to persons with disability.

[76] Of these 40 employers, 7 were categorised as large organisations and 33 as small to medium-sized enterprises. Most of these employers had at least some experience with persons with disability.

[77] This is not identified as problematic by larger enterprises which typically have large human resource staff who are often well versed in using this language.

not have hired persons with disability (Waterhouse et al., 2010). Taking into account the perspective of the employer, Waterhouse et al. (2010) therefore suggest that employment agencies are key if employment among those with disability is to be encouraged.

Working with individuals with disability lessens their physical and social distance to others and combats discrimination (Becker, 1971). Thus employment agencies have the potential to set in place a virtuous cycle with respect to employment among individuals with disability. The WHO (2011) notes that companies which have employed and worked with individuals with disability in the past are more likely to employ more disabled workers in the future.

The findings of Waterhouse et al. (2010), Kulkarni and Kote (2014) and the WHO (2011) suggest that links between employers and employment agencies promote the success of persons with disability as in this way employers are educated and more willing to employ those with disability. More could be done in South Africa to develop such links. Governments also need to make a greater commitment to supporting and funding organisations such as these.

Furthermore, employment agencies have the opportunity to assist those with disability through skills development and training, thus allowing them to be more competitive in the job market.[78] Supported employment programmes, also referred to as "place and train" programmes, place an individual in an employment position before he or she receives any specific training. This provides both the employer and the person with

[78] Although not considered in detail, education also plays a key role in skills development and in improving competiveness among persons with disability. Educational attainment is lower among persons with disability. For example, in South Africa the majority of children with disability are not attending any education institution (Donohue & Bornman, 2014). There has been a global shift towards supporting inclusive education, with disabled children being educated alongside their peers rather than in special needs schools. The South African National Department of Education (2001) described inclusive education as the "cornerstone of an integrated and caring society". Successful inclusive education requires teachers to be trained in how to support those with disability, and to remove any misconceptions they may have towards students with disability. This has been shown to have large positive effects. For example, Mongolia ran a training programme for teachers and parents. One of the focuses of the programme was to improve the attitudes towards the inclusion of students with disability and to work more closely with parents. After this training programme, enrolment in primary schools and preschools among children with disability increased from 22% to 44% (WHO, 2011). In South Africa, teachers are largely unsure about how to support students with disability. A case study from KwaZulu-Natal found that most teachers did not know who to contact when a disabled student entered their class. Many also reported feeling confused and overwhelmed (UNICEF, 2012). Consequently, disabled children in South Africa often don't receive adequate support, contributing to the high dropout rates among those with disability.

disability the opportunity to learn on the job. Increasingly, however, there has been a shift away from sheltered employment ("train and place") programmes, which separate persons with disability before trying to integrate them, towards supported employment (WHO, 2011). Services often provided once an individual has been placed in a job include specialised job training, transport, employment coaching and assistive technology (WHO, 2011). Typically, support is provided for a limited period of time. However, Australia, the United States, the United Kingdom and Norway offer long-term supported employment (Mont, 2004).

This is one of the few areas of disability policy research where quantitative testing has been conducted. Using a randomised control trial, Burns et al. (2007) found[79] that among those with severe mental disability[80] receiving supported employment, the rate of employment more than doubled. Furthermore, those assigned to "place and train" programmes worked longer hours and stayed employed for longer than those in "train and place" programmes. The train and (then) place method was found to be less effective. Many of those in these programmes remained in sheltered employment, rather than joining the competitive job market (Burns et al. 2007). Similarly, Bond et al. (2008), reviewing 11 studies conducted primarily in the United States, found that those in a "place and train" programme did significantly better than those in a "train and place" programme, and obtained their first job ten weeks earlier those in "train and place" programmes. The empirical evidence in support of supported employment programmes is therefore well established.

It is worth noting that many countries have implemented a quota system to enforce the employment of persons with disability. For example, Germany has a quota in place of 5%, Turkey 3%, South Africa 2% and China 1.5% (WHO, 2011). Countries have used a variety of methods to meet these quotas. For example, in China companies that fail to meet the quota pay a fine, which is used to train and find job placements for persons with disability. South Africa encourages compliance through tax incentives or through the rewarding of government contracts.[81] Overall, however, compliance with disability

[79] Their sample was followed for 18 months within six European countries.
[80] For example, bipolar disorder, depression and schizophrenia.
[81] These are rewards based on a company's broad-based black economic empowerment (B-BBEE) scorecard. Scorecard points are awarded on the basis of a company's hiring of minorities or members of a previously disadvantaged group. This is not specific to hiring persons with disability.

quotas has been low. For example, among the members of the Organisation for Economic Co-operation and Development (OECD), the rate at which quotas are filled ranges between 50% and 70% (WHO, 2011).

However, disability quotas attract controversy among both employers, who would often prefer to pay a fine, and among persons with disability who view employment quotas as diminishing their value or as placing too much focus on their disability (WHO, 2011). Furthermore, as of yet there is insufficient research to draw conclusions as to whether or not quotas have a positive effect on promoting employment among persons with disability (WHO, 2011). Rather, the available evidence suggests that training and educating employers and persons with disability is more effective than enforced quotas.

6.2 BARRIERS TO PARTICIPATION: INFORMATION AND INFRASTRUCTURE

Improving access to employment among persons with disability is necessary. However, the results above suggest that barriers to labour force participation are the primary obstacle faced by persons with disability in South Africa. Thus attention must be directed towards removing such barriers.[82] Two points are considered here: physical barriers and information barriers.[83]

Firstly, as discussed above, persons with disability are often unaware of the job opportunities available or how to access these job opportunities due to barriers in communication and information. For example, individuals with seeing difficulties struggle to access written text and quadriplegics report struggling to turn over the pages of newspapers (McKinney, 2013). Consequently, individuals with disability often rely on family or friends to find and identify potential employment opportunities (McKinney, 2013). This contributes too many individuals with disability becoming discouraged and exiting the labour market.

Here too employment agencies play a key role, as they inform persons with disability about the available employment opportunities. The WHO (2011) notes the importance of employment agencies being "person-centred", not job or disability-centred. In other

[82] It is worth noting that the discussion above on employment agencies also has implications for participation among persons with disability.

[83] Information barriers and physical barriers were also discussed with regard to the labour supply–demand model in Chapter 1.

words, individuals with disability should be informed and matched to employment opportunities based on their skills and interests, not based on the jobs available. This improves the chances for long-term employment, and gives persons with disability greater autonomy over their lives (WHO, 2011). Furthermore, it improves the relationship between both persons with disability and employers, and persons with disability and employment agencies.

Talent managers and employment agencies in India emphasise the importance of "person-centred" job placement (Kulkarni & Scullion, 2015). Among those employment agencies interviewed by Kulkarni and Scullion (2015), many go beyond the convention of consulting only the persons with disability themselves. Rather, to create a more holistic picture of an individual's talents, interests and skills gaps, as well as his or her background and surroundings, agencies involve all stakeholders. This often includes the parents and family of the individual with disability. While more research is needed, in the experience of those interviewed, this has better allowed employment agencies to train persons with disability and find a good fit with employers (Kulkarni & Scullion, 2015).

However, interviewing South Africans with disability, McKinney (2013) found that most participants preferred not to use disability recruitment agencies. Furthermore, those interviewed by McKinney (2013) implied that South African employment agencies used the same stereotypical views also held by employers to categorise persons with disability into certain work positions and not others. McKinney (2013) also found that persons with disability often distrusted employment agencies, believing that they were only providing assistance for financial gains.

Of those interviewed, a number rely on friends and family to find employment opportunities when they are unsuccessful in job searching independently or through employment agencies (McKinney, 2013). For example, one participant explained how after unsuccessfully job searching for a long period of time, he found employment when a close friend of his mother offered him a job. However, although they are important, family and friends are not a substitute for employment agencies which, as noted above, can also benefit employers.

McKinney's (2013) findings suggest that South Africa's vocational services can be improved by becoming increasingly "person-centred", rather than disability-centred. If

the information barriers faced by persons with disability are to be overcome, greater trust and respect must be built between those with disability and employment services. South Africa has yet to capture the full gains of employment services.

Secondly, infrastructural and transport barriers contribute to the negative effect of disability on labour market participation. Most countries have been largely unsuccessful in addressing these physical barriers. A UN survey of 114 countries found that most governments had made a commitment to promoting accessibility (South-North Centre for Dialogue and Development, 2006). However, as summarised in Table 6-1, most have taken insufficient action to improve physical accessibility. Among those governments committed to removing physical barriers, 58% had allocated no financial resources towards achieving this objective. Furthermore, 54% had no standards in place for what constituted an accessible street environment, and 43% had no standards in place for accessibility within public buildings. Consequently, few countries have made progress in removing such barriers (South-North Centre for Dialogue and Development, 2006). This non-compliance is found in both developed and developing countries. Countries identified by the WHO (2011) for failing to remove physical barriers include Spain, Australia, Denmark, Brazil, India and South Africa.

This can cause serious injury and harm. In South Africa, McKinney (2013) notes that many persons with disability work in dangerous conditions because employers have not taken adequate steps to make the workplace accessible. For example, those with visual impairments reported that uneven surfaces in the workplace could result in serious injury. One participant related how having a visual impairment means they use only one route in the workplace, but construction would begin without prior warning disrupting these routes (McKinney, 2013). Many individuals expressed the fear that inadequate precautions had been taken in case of emergencies. For example, one individual with a hearing limitation reflected that during a bomb threat she was unable to hear the alarm and would thus continue working. McKinney's (2013) findings suggest that in South Africa, many persons with disability function in a dangerous and hostile work environment.

Table 6–1: Actions taken by governments to improve accessibility

Actions taken by governments to improve physical accessibility:	Per cent
No adoption of policies:	43%
No legislation passed:	47%
No introduction of programmes:	57%
No allocation of financial resources:	58%
No educational programmes to inform architects and engineers:	65%
No raising of public awareness:	45%
No accessibility standards for outdoor environments:	54%
No accessibility standards for public buildings:	43%
No accessibility standards for health facilities, schools and public services buildings:	44%
No government body responsible for monitoring:[84]	56%

Source: South-North Centre for Dialogue and Development (2006)

Despite high levels of non-compliance, some strategies have been found to be better than others. Firstly, the implementation of voluntary accessibility standards does not work. Rather, laws stipulating mandatory minimum accessibility standards are required (WHO, 2011). For example, in 1961 the United States implemented its first voluntary accessibility standard, which met with a poor response. Accessibility standards were only adhered to after they had been passed into law for all Federal buildings in 1968 (WHO, 2011).

South Africa currently does have accessibility standards in place, and the South African National Building Regulations require that facilities are built and altered to meet such standards. However, despite this, many persons with disability in South Africa still

[84] However, very few countries had established committees of independent experts to undertake monitoring and evaluation.

struggle to access public spaces and public transport (McKinney, 2013). Although it is necessary, legislation on its own is not sufficient. Inspection and structured monitoring processes are equally as important.

The WHO (2011) notes the importance of monitoring and evaluation in achieving 'universal design'. Monitoring would preferably be independent from government, and provide impartial evaluations and recommendations for improvement. Sufficient monitoring can place pressure on government and educate interest groups to ensure that they uphold their commitment to physical accessibility (WHO, 2011).[85]

The importance of monitoring and evaluation is highlighted by an Indian case study. During the early 2000s, the UNNATI Organisation for Development Education set up a project to raise public awareness and audit public spaces, including banks, academic institutions, government offices, parks, development organisations, transport services and public events (UNNATI, 2008). These audits were conducted voluntarily or at the request of the owners.

Two important outcomes are highlighted here. Firstly, the project encouraged the inclusion and participation of architects, engineers and builders through public awareness events, producing educational material, and holding accessibility workshops. These individuals left with a greater understanding of accessibility and the importance of 'universal design'. UNNATI (2008) found that many of those educated under the project became committed to achieving universal accessibility, and continued to offer their services by voluntarily assisting in the audit process.

In is interesting to note that UNNATI (2008) found that many architects only become committed to promoting accessibility after learning that 'universal design' would benefit not only those with disability, but also the elderly, pregnant women, children and the temporally affected (for example, people suffering from broken bones or stroke). This suggests that in future accessibility workshops should focus on universal design, not on disability alone.

[85]The WHO (2011) suggests that accessibility standards should be included in building regulations. Any delays caused by the denial of building permits will act as an incentive to ensure that accessibility standards are met. Without such inspections, law has no way of penalising those that do not meet accessibility standards.

Secondly, UNNATI conducted a total of 36 audits between 2003 and 2008. After these audits had been completed, modifications were made voluntarily to half the audited venues (UNNATI, 2011).[86] Examples of modification included adjusting counter heights, the installation of lifts and ramps, the installation of accessible toilets and clear signage. Although more research is needed to quantify these effects, UNNATI (2008) and the WHO (2011) conclude that greater monitoring has a positive effect on the commitment to accessibility.

Considering the huge amount of infrastructure that is already in place, redesigning universally accessible transport systems and buildings is very expensive. This is a cost few developing countries can afford (WHO, 2011). The WHO (2011) suggests that developing countries, such as South Africa, follow a programme of "progressive realisation". In other words, they should focus on small, low-cost programmes which can significantly improve accessibility, before embarking on larger, most costly ones. For example, they should focus on installing ramps, improving access to public toilets and making the ground floor of public buildings accessible.

6.3 LINKS BETWEEN GENDER AND DISABILITY

The literature has shown that there is a strongly established link between disability and gender. Many working in the disability community acknowledge these links. For example, the organisation for Disabled People of South Africa has a specific wing dedicated to disabled women.

This dissertation has shown that women with disability in South Africa face double discrimination within the labour market, resulting from both their disability and their gender. However, disability does not affect disabled men and women equally. Men experience a greater penalty for disability than women with respect to labour force participation. The barriers faced by disabled women are largely gender-related. Consequently, disability policy must include gender links.

With reference to disability and poverty, Pokempner and Roberts (2001) note that economic policy must be designed to simultaneously address disadvantages resulting

[86] It is worth noting that this was an observation made by those working within the project. More research is needed before the exact effect of monitoring and evaluation on accessibility can be established.

from both disability and poverty. Trying to address these issues separately may be ineffective and require more resources. The same is true for disability and gender. Similarly, Graham et al. (2014) note that progress among persons with disability in South Africa requires an integrated approach to policy design, as disability interacts with factors such as race and gender. Focusing solely on gender will delay progress.

However, the literature is sparse on how policy and programmes should be designed to best link disability and gender. For example, while many have used randomised control trials to assess the effects of supported employment programmes among those with disability, at the time of writing we are unaware of any literature that has considered the differences between disabled men and women within such programmes. Consequently, it is not known whether supported employment benefits men and women equally, and how supported employment needs to be restructured if women with disability are to be successful within the labour market.

This is an important gap in the literature. If it is not addressed, the benefits of disability policy may be captured primarily by disabled men and may further marginalise disabled women. Given the findings of this dissertation, greater attention needs to be given in the literature to the links between disability, gender and policy.

Despite being one of society's most marginalised groups, persons with disability are largely ignored in the developmental debate. This dissertation has considered the nature and magnitude of the barriers facing persons with disability in South Africa, with specific reference to gender. Given the findings of this dissertation, the current policy recommendations do not adequately address the barriers faced by individuals with disability, or there is currently insufficient quantitative backing to support many of these policy measures. If we are to have inclusive development, this needs to be corrected.

REFERENCES

Data references

Statistics South Africa, 2012, General Household Survey 2011, electronic dataset, Data First, viewed 15 January 2017, http://www.datafirst.uct.ac.za.

Statistics South Africa, 2013, General Household Survey 2012, electronic dataset, Data First, viewed 15 January 2017, http://www.datafirst.uct.ac.za.

Statistics South Africa, 2014, General Household Survey 2013, electronic dataset, Data First, viewed 15 January 2017, http://www.datafirst.uct.ac.za.

Statistics South Africa, 2015, General Household Survey 2014, electronic dataset, Data First, viewed 15 January 2017, http://www.datafirst.uct.ac.za.

Statistics South Africa, 2016, General Household Survey 2015, electronic dataset, Data First, viewed 15 January 2017, http://www.datafirst.uct.ac.za.

Literature references

Anand, P. & Ben-Shalom, Y., 2014, 'How do working-aged people with disabilities spend their time? New evidence from the American Time Use Survey'. *Current Anthropology*, 53(2), pp. 1977-1998.

Arrow, K.J., 1998, 'What has economics to say about racial discrimination?' J*ournal of Economic Perspectives*, 12(2), pp. 91-100.

Barnes, C., 2016, 'A working social model? Disability, work and disability politics in the 21st century', *Critical Social Policy*, 20(4), pp. 441-457.

Becker, G.S., 1971. *The Economics of Discrimination*. Chicago: University of Chicago Press.

Becker, G.S., 1993. Nobel lecture: The economic way of looking at behavior. *Journal of Political Economy*, 101(3), pp. 385-409.

Bond, G.R., Drake, R.E. and Becker, D.R., 2008. An update on randomized controlled trials of evidence-based supported employment. *Psychiatric Rehabilitation Journal*, 31(4), p. 280.

Burns, T., Catty, J., Becker, T., Drake, R.E., Fioritti, A., Knapp, M., Lauber, C., Rössler, W., Tomov, T., Van Busschbach, J. and White, S., 2007. *'The effectiveness of supported*

employment for people with severe mental illness: a randomised controlled trial'. The Lancet, *370*(9593), pp. 1146-1152.

Campolieti, M., 2002, 'Disability and the labor force participation of older men in Canada', *Labour Economics*, 9(3), pp. 405-432.

Celentano, D.D., Linet, M.S. & Steward, W.F, 1990, 'Gender differences in the experience of headaches', *Social Science & Medicine,* 30(12), pp.1289-1295.

Chirikos, T.N. & Nestel, G., 1984, 'Economic determinants and consequences of self-reported work disability', *Journal of Health Economics*, *3*(2), pp. 117-136.

Coleman, J.M., Brunell, A.B. & Haugen, I.M., 2015, 'Multiple forms of prejudice: How gender and disability stereotypes influence judgments of disabled women and men', *Current Psychology*, *34*(1), pp. 177-189.

Cramm, J.M., Nieboer, A.P., Finkenflugel, H. & Lorenzo, T., 2013, 'Comparison of barriers to employment among youth with and without disability in South Africa', *Work*, 46(1), pp. 19-24.

Currie, J. & Madrian, B.C., 1999, 'Health, health insurance and the labour market', *Handbook of labor economics*, 3, pp. 3309-3416.

Department of Education, 2001, *White Paper 6: Special Needs Education - Building an inclusive education and training system,* Pretoria: Department of Education. [Available online]: http://www.education.gov.za/LinkClick.aspx?fileticket=gVFccZLi%2FtI%3D&tabid=191&mid=484.

Department of Labour, 2013, '*12th Commission for Employment Equity Annual report 2011-2012*'. Republic of South Africa, Pretoria.

Department of Labour, 2013, '*13th Commission for Employment Equity Annual report 2012-2013*'. Republic of South Africa, Pretoria.

Department of Labour, 2014, '*14th Commission for Employment Equity Annual report 2013-2014*'. Republic of South Africa, Pretoria.

Department of Labour, 2015, '*15th Commission for Employment Equity Annual report 2014-2015*'. Republic of South Africa, Pretoria.

Department of Labour, 2016, '*16th Commission for Employment Equity Annual report 2015-2016*'. Republic of South Africa, Pretoria.

Dlamini, B., 2016, 'Minister of Social Development, White Paper on the Rights of Persons with Disabilities', No 230, pp. 5 – 197 [Available Online]: http://www.gov.za/sites/www.gov.za/files/39792_gon230.pdf

Donohue, D. & Bornman, J., 2014, 'The challenge of realising inclusive education in South Africa', *South African Journal of Education*, 34(2).

Dovidio, J.F., Pagotto, L., & Hebl, M.R., 2011, Implicit attitudes and discrimination against people with physical disabilities. In R.L. Wiener & S.L. Wilborn (Eds.), *Disability and Age Discrimination: Perspectives in Law And Psychology* (pp. 157–184), New York, NY: Springer.

DSD, DWCPD & UNICEF, 2012, 'Children with disabilities in South Africa: A situation analysis: 2001-2011'. Pretoria: Department of Social Development/Department of Women, Children and People with Disabilities/UNICEF. [Available Online]: http://www.unicef.org/southafrica/SAF_resources_sitandisability.pdf

Gannon, B., 2005, 'A dynamic analysis of disability and labour force participation in Ireland 1995-2000', *Health Economics*, 14, pp. 925-938.

Graham, L., Moodley, J., Ismail, Z., Munsaka, E., Ross, E. & Schneider, M., 2014, 'Poverty and disability in South Africa: Research Report'. Johannesburg: Centre for Social Development in Africa, University of Johannesburg.

Groce, N., Kett, M., Lang, R. & Trani, J.F., 2011. Disability and poverty: The need for a more nuanced understanding of implications for development policy and practice. *Third World Quarterly*, *32*(8), pp. 1493-1513.

Hollenbeck, K. & Kimmel, J., 2001. '*The returns to education and basic skills training for individuals with poor health or disability',* Kalamazoo, MI: Upjohn Institute for Employment Research.

Kulkarni, M. & Kote, J., 2014, 'Increasing employment of people with disabilities: The role and views of disability training and placement agencies', *Employment Response Rights Journal*, 26(3), pp. 177-193.

Kulkarni, M. & Scullion, H., 2015, 'Talent management activities of disability training and placement agencies in India', *The International Journal of Human Resource Management*, 26(9), pp. 1169-1181.

Lamichhane, K. & Sawada, Y., 2013. Disability and returns to education in a developing country. *Economics of Education Review*, 37, pp. 85-94.

Lang, R., 2007. *'The development and critique of the social model of disability'*. London: Leonard Cheshire Disability and Inclusive Development Centre.

Liesener, J.J., & Mills, J., 1999, 'An experimental study of disability spread: Talking to an adult in a wheelchair like a child'. *Journal of Applied Social Psychology*, 29, pp. 2083-2092.

Loeb, M., Eide, A.H., Jelsma, J., Toni, M.K. & Maart, S., 2008. 'Poverty and disability in eastern and western cape provinces, South Africa', *Disability & Society*, 23(4), pp. 311-321.

Louie, G.H. & Ward, M.M., 2010. 'Gender Disparities in Self-Reported Physical Functioning: True Differences, reporting Bias, or Incomplete Adjustment for Confounding?' *Journal of the American Geriatrics Society,* 58(6), pp.1117-1122.

Madans, J.H., Loeb, M.E. & Altman, B.M., 2011. 'Measuring disability and monitoring the UN Convention on the Rights of Persons with Disabilities: The work of the Washington Group on Disability Statistics'. *BMC Public Health*, 11(4), p. S4.

Marumoagae, M.C., 2012. 'Disability discrimination and the right of disabled persons to access the labour market'. *PER: Potchefstroomse Elektroniese Regsblad*, 15(1), pp. 344-365.

McKinney, E.L., 2013. *The experiences of people with disabilities during their integration and retention into employment in South Africa,* Doctoral thesis, University of Cape Town.

Merril, S.S. Seeman, T.E. Kasl, S.V, Berkman, L.F, 1990, 'Gender Differences in the Comparison of Self-reported Disability and performance Measures', *Journal of Gerontology: Medical Sciences,* 52A(1), pp. M19-M26.

Minister of Social Development, 2015, White Paper on the Rights of Persons with disabilities, South Africa, 9 December.

Mitra, S., 2006.'The capability approach and disability'. *Journal of Disability Policy Studies*, 16(4), pp. 236-247.

Mitra, S., 2008, 'The recent decline in employment of persons with disability in South Africa 1998-2006', *South African Journal of Economics,* 76(3), pp. 480-492.

Mitra, S., 2010. 'Disability cash transfers in the context of poverty and unemployment: The case of South Africa'. *World Development*, 38(12), pp. 1692-1709.

Mizunoya, S. & Mitra, S., 2013. 'Is there a disability gap in employment rates in developing countries?' *World Development*, 42, pp. 28-43.

Mont, D., 2004, *Disability employment policy*, Social Protection Discussion Paper Series, No. 0413, Washington, DC: The Wold Bank [Available Online]: http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1433&context=gladnetcollect

Mont, D., 2007, *Measuring disability prevalence*, SP Discussion Paper No. 0706, Special Protection, Washington, DC: The World Bank.

National Department of Social Development, 2015, 'Elements of the financial and economic costs of disability to households in South Africa: A pilot study', Republic of South Africa, Pretoria.

Nhlapo, C.M., Watermeyer, B. and Schneider, M., 2006. 'Disability and human rights: The South African SRC Press Rights Commission'. In: B. Watermeyer, L. Swartz, T. Lorenzo et al. (Eds.), *Disability and Social Change: A South African Agenda*, HSRC Press, pp. 99-107.

Office of the Deputy President, 1997, *Integrated National Disability Strategy, White Paper*, South Africa, November.

Pagan-Rodriguez, R., 2012, Being under time pressure: The Case of workers with disabilities, *Social Indicators Research*, 114(3): pp. 831-840.

Palmer, M., 2011, 'Disability and poverty: A conceptual review'. *Journal of Disability Policy Studies,* 21(4), pp. 210 –218.

Palmer, M. & Harley, D., 2011, 'Models and measurement in disability: an international review', *Health Policy and Planning*, 2012(27), pp. 357-364.

Parsons, D.O., 1982. 'The male labour force participation decision: Health, reported health, and economic incentives'. *Economica*, 49(193), pp. 81-91.

Pokempner, J. & Roberts, D.E,. 2001, Poverty, welfare reform and the meaning of disability, *Ohio State Law Journal*, 62(1), 1-23.

Robey, K. L., Beckley, L., & Kirschner, M., 2006, 'Implicit infantilizing attitudes about disability'. *Journal of Developmental and Physical Disabilities*, 18, pp. 441-453.

Saleeby, P.W., 2007. 'Applications of a capability approach to disability and the international classification of functioning, disability and health (ICF) in social work practice'. *Journal of Social Work in Disability & Rehabilitation*, 6(1-2), pp. 217-232.

Schneider, M., Claassens, M., Kimmie, Z., Morgan, R., Naicker, S., Roberts, A. & McLaren, P., 1999. *We also count. The extent of moderate and severe reported disability and the nature of the disability experience in South Africa.* Pretoria, Department of Health and CASE.

Schneider, M., Dasappa, P., Khan, N. & Khan, A., 2009. Measuring disability in censuses: The case of South Africa. *ALTER-European Journal of Disability Research/Revue Européenne de Recherche sur le Handicap*, 3(3), pp. 245-265.

Schur, L., Kruse, D. & Blanck, P., 2005. Corporate culture and the employment of persons with disabilities. *Behavioral Sciences & the Law*, 23(1), pp. 3-20.

Sen, A., 1999, *Development as Freedom*, Oxford University Press, Oxford.

Soudien, C. & Baxen, J., 2006. Disability and schooling in South Africa. In: B. Watermeyer, L. L. Swartz, M. Schneider & M. Priestley, (Eds), *Disability and Social Change: a South African Agenda.* Cape Town: HSRC Press, pp. 149-163.

South-North Centre for Dialogue and Development, 2006, *Global survey on government action on the implementation of the standard rules on the equalization of opportunities for persons with disabilities*. Amman, Jordan, Office of the UN Special Rapporteur on Disabilities.

Statistics South Africa, 2014, *Census 2011: Profile of persons with disabilities in South Africa*, Report No: 03-01-59, Stats SA, Pretoria.

Statistics South Africa, 2016, 'Financial Statistics of National Government 2014/2015', Pretoria. [Available Online]: http://www.statssa.gov.za/publications/P91193/P911932015.pdf

Stern, S., 1996. 'Semiparametric estimates of the supply and demand effects of disability on labor force participation'. *Journal of Econometrics*, 71(1), pp. 49-70.

Tesemma, S.T., 2014, 'Economic discourses of disability in Africa: An overview of lay and legislative narratives'. *African Disability Rights Yearbook*, 2, pp. 121.

United Nations, 2011, *Disability and the Millennium Development Goals*, New York, [Available Online]: http://www.un.org/disabilities/documents/review_of_disability_and_the_mdgs.pdf

United Nations Development Program, 2016. *Evaluation of Disability Inclusive Development at UNDP*, USA.

UNNATI (Organisation for Development Education), 2008. Civil society engagement for mainstreaming disability in development process. Report of an action research project initiated in Gujarat with multi-stakeholder partnership. Gujarat, India.

Wang, K. & Dovidio, J., 2011, 'Disability and automy: Priming alternative identities', *Rehabilitation Pyschology*, (56)2, pp. 123-127.

Watermeyer, B., L.L. Swartz, M. Schneider & M. Priestley (Eds), 2006. *Disability and Social Change: A South African Agenda.* Cape Town, HSRC Press.

Waterhouse, P., Kimberley, H., Jonas, P. and Glover, J., 2010. *What would it take? Employer perspectives on employing people with a disability. A National Vocational Education and Training Research and Evaluation Program Report*. National Centre for Vocational Education Research, Adelaide, Australia.

Weinberg, N., 1976, 'Social stereotyping of the physically handicapped'. *Rehabilitation Psychology*, 23(4), pp. 115–124.

Werner, S. & Schulman, C., 2015, 'Does type of disability make a difference in affiliate stigma among family caregivers of individuals with autism, intellectual disability or physical disability?' *Journal of Intellectual Disability Research*, 59(3), pp. 272-283.

WHO, 2011, 'World report on disability,' *Geneva, WHO.* [Available Online]: https://www.unicef.org/protection/World_report_on_disability_eng.pdf

WHO, 2013, *'How to use the ICF: A practical manual for using the International Classification of Functioning, Disability and Health (ICF)'*. Exposure draft for comment. Geneva, WHO.

APPENDIX

Table A1: Variable break-down by definition, mean and standard deviation

Variable name	Variable definition	Mean	Standard deviation
Employed	A dummy variable that takes a value of 1 when the individual is employed and 0 otherwise. An individual is categorised as employed if he or she is currently earning a wage, running a business, doing some type of volunteer work, or has a position that he or she can return to.	0.419	0.001
Labour force participation (LFP)	A dummy variable that takes a value of 1 when the individual is economically active and 0 otherwise. One is categorised as economically active if one is currently employed or currently looking for work.	0.555	0.001
LFP (Broad)	A dummy variable that takes a value of 1 when the individual is broadly economically active and 0 otherwise. One is categorised as economically active if one is currently employed, looking for work or applies to those who are discouraged but want to work.	0.659	0.001
Unemployed (official)	A dummy variable that takes a value of 1 when the individual is officially unemployed and 0 otherwise. The official unemployment rate is calculated using those who are currently unemployed (employment=0) and those who economically active (LFP=1).	0.135	0.001
Unemployed (Broad)	A dummy variable that takes a value of 1 when the individual is broadly unemployed and 0 otherwise. The broad unemployment rate is calculated using those who are currently unemployed (employment=0), those who are economically active (LFP=1) or are currently discouraged workers (discouraged==1).	0.24	0.001
Discouraged worker	A dummy variable that takes a value of 1 when the individual is discouraged and 0 otherwise. One is categorised as discouraged if currently unemployed, not looking for work, but wanting employment.	0.105	0.001
Broad disability	A dummy variable that takes a value of 1 when the individual is broadly disabled and 0	0.104	0.001

	otherwise. One is categorised as broadly disabled if one has “some difficulty”, “a lot of difficulty” or is “unable to do” one or more of the activities.		
Wide Disability	A dummy variable that takes a value of 1 when the individual is broadly disabled and 0 otherwise. One is categorised as broadly disabled if one has “some difficulty”, “a lot of difficulty” or is “unable to do” one of the activities, excluding seeing, or if one has “a lot of difficulty” or is “unable to” see.	0.053	0.0004
UN Index Disability	A dummy variable that takes a value of 1 when the individual is UN disabled and 0 otherwise. One is categorised as UN disabled if one has “some difficulty” in at least two activities, or “a lot of difficulty” or is “unable to do” one or more of the activities.	0.036	0.0003
Narrow Disability	A dummy variable that takes a value of 1 when the individual is Narrowly disabled and 0 otherwise. One is categorised as Narrowly disabled if one has “a lot of difficulty” or is “unable to do” one or more of the activities.	0.024	0.0002
Married	A dummy variable that takes a value of 1 when the individual is married and 0 otherwise. An individual is categorised as married if he or she is legally married or currently living together like husband and wife.	0.365	0.001
Education year	The highest level of education, in years, obtained	9.516	0.006
Gender	A dummy variable that takes a value of 1 when an individual is female, and 0 if male.	0.533	0.5
Disability Grant	A dummy variable that takes a value of 1 when the individual receives a Disability Grant and 0 otherwise.	0.031	0.174
Head of Household	A dummy variable that takes a value of 1 when the individual identifies as the head of household and 0 otherwise.	0.364	0.481
African	A dummy variable that takes on a value 1 when an individual classifies himself or herself as African/Black or 0 if White, Coloured or Indian/Asian.	0.791	0.001

Age	Age, in complete years	34.786	14.058
Province	A dummy variable for each province is generated. For example, for the Western Cape (WC) variable the dummy takes a value of one it the individual lives in the WC and 0 otherwise.		
Western Cape		0.123	0.0006
Eastern Cape		0.115	0.0006
Northern Cape		0.057	0.0004
Free State		0.079	0.0005
KwaZulu-Natal		0.169	0.0007
North West		0.079	0.0005
Gauteng		0.174	0.0007
Mpumalanga		0.095	0.0006
Limpopo		0.108	0.0006

Means and standard deviations calculated within the working age population. Calculations are weighted.

Table A2: Correlation matrix between model variables

	Narrow	Gender	African	Married	HHHead	Age	Age2	EduYear	WC
Narrow	1								
Gender	-0.0012	1							
African	-0.0007	0.0117	1						
Married	-0.0071	-0.0091	-0.1830	1					
HHHead	0.0274	-0.1942	0.0104	0.1992	1				
Age	0.0994	0.0562	-0.1247	0.4353	0.4842	1			
Age2	0.1058	0.0556	-0.1224	0.3957	0.4594	0.9854	1		
EduYear	-0.1265	-0.0071	-0.1783	0.0188	-0.0935	-0.2403	-0.2814	1	
WC	0.0122	-0.0057	-0.4737	0.0766	-0.0067	0.0412	0.0355	0.0849	1
EC	0.0101	0.0062	0.0648	-0.0414	-0.0050	0.0063	0.0135	-0.0720	-0.1354
NC	0.0074	-0.0006	-0.1594	0.0059	0.0001	0.0181	0.0182	-0.0473	-0.0920
FS	0.0120	0.0055	0.0799	0.0163	0.0181	0.0058	0.0056	-0.0054	-0.1099
KZN	-0.0094	0.0083	0.0641	-0.0656	-0.0257	-0.0347	-0.0321	-0.0083	-0.1692
NW	0.0184	-0.0065	0.1015	-0.0053	0.0117	0.0092	0.0089	-0.0499	-0.1099
GP	-0.0273	-0.0246	0.0398	0.0531	0.0191	0.0214	0.0115	0.1405	-0.1722
MP	0.0067	0.0012	0.1169	-0.0123	-0.0000	-0.0251	-0.0243	-0.0368	-0.1217
LP	-0.0171	0.0199	0.1596	-0.0264	-0.0060	-0.0372	-0.0299	-0.0579	-0.1304
Disability Grant	0.2567	-0.0019	-0.0084	-0.0218	0.0252	0.1194	0.1150	-0.1808	0.0116

Table 2 Continued:

	EC	NC	FS	KZN	NW	GP	MP	LP	Disability Grant
EC	1								
NC	-0.0885	1							
FS	-0.1059	-0.0719	1						
KZN	-0.1630	-0.1106	-0.1323	1					
NW	-0.1058	-0.0718	-0.0859	-0.1322	1				
GP	-0.1658	-0.1126	-0.1346	-0.2072	-0.1345	1			
MP	-0.1172	-0.0796	-0.0951	-0.1464	-0.0951	-0.1490	1		
LP	-0.1256	-0.0853	-0.1020	-0.1569	-0.1019	-0.1597	-0.1129	1	
Disability Grant	0.0192	0.0407	0.0168	0.0074	0.0055	-0.0499	-0.0147	-0.015	1

Table A3: Logit regression on labour force participation among males and females separated by limitation type and severity

	Male population		Female population	
Individual has a Narrow seeing limitation	0.607	***	0.891	*
	(0.056)		*(0.058)*	
Individual has a Narrow hearing limitation	0.581	***	0.894	
	(0.092)		(0.114)	
Individual has a Narrow walking limitation	0.140	***	0.292	***
	(0.018)		*(0.032)*	
Individual has a Narrow remembering limitation	0.285	***	0.665	***
	(0.038)		*(0.073)*	
Individual has a Narrow self-care limitation	0.44	***	0.625	**
	(0.102)		*(0.14)*	
Individual has a Narrow communication limitation	1.211		0.569	*
	(0.355)		*(0.174)*	

*** P≤0.001 ** P≤0.05 *P≤0.1. Standard error for disability coefficient in parentheses

Note: Additional controls for Labour force participation included, but not reported here, are, race, age, age squared, education year, head of household, marital status, province and Disability Grant.

Table A4: Predictive probability of employment among every combination of gender and disability

	Wide	UN	Narrow
Abled male	0.824 ***	0.825 ***	0.825 ***
	(0.001)	*(0.001)*	*(0.001)*
Abled female	0.766 ***	0.766 ***	0.766 ***
	(0.002)	*(0.002)*	*(0.002)*
Disabled male	0.842 ***	0.843 ***	0.838 ***
	(0.007)	*(0.010)*	*(0.013)*
Disabled female	0.788 ***	0.802 ***	0.785 ***
	(0.008)	*(0.010)*	*(0.013)*
Marginal effect of disability among men	0.017 **	0.018 *	0.014
	(0.008)	*(0.010)*	*(0.013)*
Marginal effect of disability among women	0.023 **	0.036 ***	0.018
	(0.008)	*(0.010)*	(0.014)

*** P≤0.001 ** P≤0.05 *P≤0.1. Standard error for disability coefficient in parentheses.
Adjusted predictors calculated at means.
Note: Controls for labour force participation included for disability, gender, a gender disability interaction term, race, age, age squared, education year, marital status, province.