Indicators of Multiple Deprivations

A Comparative Analysis of Wards in Limpopo, South Africa

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Abstract

This study aimed to assess and compare changes in poverty levels in the identified wards, using indicators of multiple deprivation. South Africa has grappled with the triple challenges of poverty, unemployment and inequality for more than two decades. The South African government has employed various poverty alleviation strategies in response to the structural causes of poverty, but it continues to exist. This paper presents a comparative analysis of the poverty situation reported in 2006 and in 2011, using indicators of multiple deprivation. It was found that very few households have moved out of poverty and that the majority are in districts where levels of poverty are high. Detailed knowledge of poverty locations will assist policy makers and implementers to allocate resources effectively by targeting areas in dire need. By using indicators of multiple deprivation, municipalities can rank and prioritise community needs, and therefore assist policy makers to design targeted programmes that could assist in alleviating poverty.

Introduction

Poverty has been in existence from time immemorial and it continues to exist. Targeting poverty and poverty alleviation is at the centre of global discourse and remains an integral part of many governments' intervention programmes. Poverty is a key developmental problem in social, economic and political terms. The global mobilisation behind the Millennium Development Goals (MDGs), which is driven by the United Nations Policy Agenda, has developed 'the most successful anti-poverty movement in history'.[1] In order to understand the threat that the problem of poverty poses, it is imperative to understand its dimensions and the process through which it seems to be deepened. The multi-dimensionality of poverty statistics are an essential component of a country's

profile and are required to inform reporting on a country's progress towards meeting the MDGs.[2] Poverty is ethically unacceptable. It has a very strong racial dimension with a high concentration among the black population. Apartheid policies that denied equal access to education, employment, services and resources to the black population of South Africa are directly responsible for the incidence of poverty among the South African black population.[3]

The current South African government's main objective is to improve the quality of life of all South Africans, by addressing the triple challenges of poverty, unemployment and inequality. The delivery of basic services is of crucial importance because of the central role it can play in poverty alleviation.[4] Limpopo province, a former homeland area, has been and remains one of the poorest and most deprived geographical regions in South Africa.[5] The computation of multi-dimensional poverty tracks and analyses changes over time. The basic component of poverty comparison is simply the difference in poverty levels in two periods.

An indicator of multiple deprivation is the Multidimensional Poverty Index (MPI), which is a measure of acute poverty that was developed by the Oxford Poverty and Human Development Initiative with the United Nations Development Programme's Human Development Index.[6] It uses information from several indicators (ten indicators in this study), which are organised in five dimensions, namely income, employment, education, health and living environment. Each of the domains was allocated a weight of 0.20. According to Noble et al.,[7] each household is identified as deprived or non-deprived using each indicator based on the deprivation cut-off of 33.3 per cent. Any household with a deprivation score that exceeds a cross-dimensional cut-off is regarded as multi-dimensionally poor.[8] It is for this reason that poverty is sometimes viewed in terms of multiple deprivations. The concepts 'deprivation' and 'poverty' are sometimes used interchangeably. In this context, deprivation refers to unmet needs, due to a lack of resources or opportunities concerning health, education, employment, housing, access to services, and financial means.[9] Haughton and Khandker[10] define poverty to mean significant deprivation in well-being.

Background to poverty alleviation initiatives in South Africa

Various initiatives are being undertaken by government, non-governmental organisations and the private sector in the fight against poverty. The magnitude and extent of poverty in any country depend on two factors: the average level of national income; and the degree of inequality in its distribution.[11] Todaro[12] further posits that the Human Poverty Index (HPI) is analogous in many ways to the Human Development Index (HDI). The United Nations Development Programme (UNDP) argues that human poverty should be measured in terms of three types of deprivation, namely life (the fraction of people unlikely to live beyond 40 years of age), basic education (measured by the percentage of adults who are illiterate), and overall economic provisioning (measured by the percentage of people without access to safe water plus the percentage of children who are underweight for their age).[13] HPI as an indication of the standard of living in a country has all the dimensions of HDI and further captures social exclusion as the fourth basic dimension. It is considered to reflect the extent of deprivation better compared to HDI. The executive director of UNDP is quoted in Todaro, noting:

> Poverty is no longer inevitable. The world has the material and natural resources, the know-how and the people to make a poverty-free world a reality in less than a generation. This is not woolly idealism but a practical and achievable goal.[14]

Africa and indeed South Africa has an abundance of natural resources, but lacks the skills to make use of those resources to its benefit; instead, developed countries are benefiting from those natural resources. Communities have to understand that there are solutions to the challenge of poverty, and that they can be part of those solutions.

The world has made great progress in reducing most forms of extreme poverty since the adoption of the MDGs. The Rio +20 summit held in June 2012 resolved to finish the job of ending extreme poverty and hunger as a matter of urgency. Extreme poverty will be prioritised in the newly adopted Sustainable Development Goals (SDGs) to ensure continuity in the fight against extreme poverty during the transition from the MDGs to the SDGs. Further and importantly, the SDGs recognise that poverty has different forms and dimensions. The eradication of poverty is an indispensable requirement for sustainable development.[15]

The South African government introduced and implemented development planning frameworks after the dawn of democracy, in its endeavour to reduce poverty. Among them were the Reconstruction and Development Programme (RDP), adopted as South Africa's socio-economic policy framework; the Growth, Employment and Redistribution (GEAR) as a macro-economic strategy to among others, grow the economy to create sufficient jobs for all work seekers; the Accelerated and Shared Growth Initiative for South Africa (ASGISA) to speed up employment creation; the New Growth Path (NGP), which sought to accelerate job growth by focusing on the micro-economy and the National Development Plan (NDP), which envisions what a 2030 South African society should be.[16] Through all these frameworks, South Africa was able to achieve most of the MDGs. Those that have not been achieved, as well as the emerging development issues, will be appropriately integrated in the post-2015 agenda.[17] The United Nations General Assembly has now adopted 17 new SDGs. Countries will report on the post-2015 development agenda from 2016 until 2030. The synergies between the development initiatives post-1994 and the MDG agenda resonated with the country's development agenda.[18]

The South African government also developed a plethora of strategies, policies and programmes to address the scourge of poverty and inequality in the country. Among these are the national Integrated Sustainable Rural Development Strategy with the aim of addressing factors linked to poverty and social exclusion; the War on Poverty Programme, which was adopted as part of the anti-poverty strategy to enhance existing anti-poverty policies through greater coordination and monitoring across all spheres of government; the Expanded Public Works Programme (EPWP), which is a nation-wide initiative aimed at drawing a significant number of unemployed South Africans into productive work in a manner that will enable them to gain skills and increase their capacity to earn an income; as well as the Community Works Programme (CWP). The EPWP and CWP are broad-based employment-creation and skills-development programmes, which aim at alleviating poverty.[19] Despite this cocktail of policy interventions to address poverty, South Africa is still battling with poverty, inequality, unemployment and hunger. The over-arching policy of government to address MDG1 is the provision of a social wage package intended to reduce the cost of

living of the poor.[20] The 2015 MDGs country report shows that poverty levels and depth of poverty are declining, but levels of inequality have remained high. The GINI coefficient is estimated at 0.69, which places South Africa among the most income-unequal countries in the world.[21]

Mtapuri[22] argues that the South African government has implemented a social security programme that comprises income support (through grants) and a social wage programme that includes compulsory education for the age cohort seven to 13, free primary health care for all and subsidised housing, free basic water, free basic sanitation, free basic electricity and free basic refuse collection. This is for beneficiaries who qualify. All these policies and programmes aim at addressing challenges experienced by communities, but the extent to which poverty and inequality have been reduced needs to be determined. Social security poverty alleviation interventions are inherently limited in terms of the extent to which they can be used to sustainably eliminate poverty and create an enabling growth environment.[23] The Organisation of Economic Cooperation and Development proposed that the government should introduce a minimum wage to help alleviate poverty without substantially affecting the high rate of unemployment.[24] Literature has shown that many people are still trapped in poverty in the Limpopo province. It is against this background that this study assessed indicators of multiple deprivation across all wards in Limpopo.

Objectives

The objectives of the study are to:
- evaluate the level of poverty in Limpopo at ward level;
- assess changes in poverty that have occurred between the two time periods of 2001 and 2011, using indicators of multiple deprivation.

Study area

The study area is Limpopo province of South Africa. South Africa has two distinct administrative hierarchies below the provincial level, namely district municipalities and local municipalities. Before the 2016 local government elections, Limpopo province consisted of five district municipalities, comprising 25 local municipalities that were sub-divided into 543 wards. A district municipality has a municipal executive and legislative authority in an area that includes more than one municipality and is referred to as a category C municipality. A local municipality is a category B municipality and shares executive and legislative authority in its area with a category C municipality within whose area it falls. It is described in section 155(1) of the Constitution of the Republic of South Africa as a category C municipality.[25,26] Wards are defined as geographical subdivisions of local municipalities that are used for electoral purposes.[27]

Literature review

Literature on poverty in developing countries is rich and readily available (Tiwari).[28] However, even given the breadth and depth of literature on poverty, it still seems intractable. Many attempts have been made to reduce poverty, but many practitioners argue that understanding the nature of and measuring poverty are essential for poverty reduction. In this paper, we review three attempts to understand and measure poverty, namely the Foster-Greer-Thorbecke (FGT) poverty measures, Sen's entitlements and capability approach and multidimensional approaches to poverty measurement.

The FGT poverty measures are among the most popular and most frequently applied poverty measures. According to Jha and Sharma,[29] the FGT poverty measure in a population is represented by:

$$P_\alpha = \int_0^q \left(\frac{z - y}{z} \right)^\alpha dy$$

where $a \geq 0$ is a 'poverty aversion' parameter; z is the poverty line; y_i is the *ith* lowest income; q is the number of persons who are poor.

Some of the applications of the FGT poverty measures have been the estimation of incidence, depth and severity of poverty. The FGT poverty measures have been adopted by some countries, UN agencies and the World Bank's PovcalNet for this purpose.[30] Sinyolo, Mudhara and Wale (2014)[31] used the FGT poverty measures to estimate the incidence, depth and severity of poverty among irrigators and non-irrigators in KwaZulu-Natal, South Africa. This shows that the measures can be applied at both macro and micro levels. This is possible because with the FGT poverty measures the headcount ratio is an indicator of the prevalence of poverty, the poverty gap measure indicates the average depth of poverty across the society as a whole and the squared gap indicates the severity of poverty. The FGT measures require a uni-dimensional variable for which a threshold can be defined and where those below the threshold are considered poor (Alkire and Foster, 2011).[32] The FGT poverty indices have been very popular and have undergone various transformations. For example, Subramanian[33] describes re-scaled FGT poverty indices associated with the Minkowski distance function.

One of the major criticisms of the FGT poverty measures is the application of a uni-dimensional measure, usually income, to determine the threshold of poverty. This is so because the multi-dimensional nature of poverty has been understood for some time, culminating in its explicit recognition during the MDG era.[34] Attempts have been made to transform uni-dimensional poverty measures to account for the multi-dimensional nature of poverty. Typically, the transformations involve the creation of a composite variable, which is used to define a threshold below which someone is poor, instead of a uni-dimensional measure such as income. However, as Alkire and Foster (2011)[35] correctly observe, the computation of such a composite variable is not always possible. For example, someone might be deprived in terms of health (measured as an ordinal variable) and in terms of income (measured as a cardinal variable) and the two variables cannot be combined into a composite.

Sen originally introduced the exchange entitlement approach to explain starvation and famine.[36] Since then it has been extended to cover capabilities and the multi-dimensional nature of poverty. Sen used the concept of an ownership bundle and argued that a person functioning in a market economy will exchange what s/he owns in his/her bundle in order to acquire other commodities. 'The set of all the alternative bundles of commodities that can be acquired in exchange for what the person owns is that person's exchange entitlement.'[37] In his study of famines, Sen argued that a person is subject to starvation if the exchange entitlement cannot be used to acquire the amount of food necessary for sustaining life. This led to his '… theory that famines could occur even when there is no food shortage.'[38] This parallels the existence of poverty in the world, yet it may not be a shortage of resources that leads to its prevalence and persistence.

In conceptualising and assessing poverty, Sen developed the entitlement approach into a capability approach and defined poverty as a deprivation of capability,[39] where capability is a set of opportunities to achieve types of freedom,[40] including freedom from poverty. This concept encompasses the multi-dimensionality of poverty. By adopting the capability approach, through the application of indices such as HDI, GDI and HPI, non-economic indicators such as gender equality, health and education became central to the UNDP's Human Development Framework, where development is defined as '… the process of enlarging people's choices'[41] or enlarging people's capabilities/opportunities/freedoms. The application of this approach was explicitly recognised in the MDGs.[42] The capability approach has been applied to environmental issues and sustainable development, in general.[43]

Noble, Barnes, Wright and Roberts[44] argue, 'It is important for governments, aid agencies and non-governmental organisations to be able to accurately identify and target the most deprived areas … and to constantly refine the targeting of interventions … and other programmes'. Targeting of interventions became a topical issue after the recognition of the multi-dimensional nature of poverty by the MDG approach and the possibility of the existence of multiple deprivations. However, as early as 1997, Klasen had constructed a deprivation index that included income, education, wealth, water, housing, sanitation, energy, transport, employment, nutrition, financial services, safety, health care and perceived well-being indicators.[46] Noble et al.[47] developed the domain approach to multiple deprivation, including the associated indicators. We apply this approach at ward level and argue that it can be used to improve the targeting of poverty alleviation programmes.

Methodology

Deprivation domains and indicators

In this study, we use the deprivation domains and indices of multiple deprivation as used by Noble et al. The MPI uses information from 13 indicators, which are organised into five dimensions, namely income, unemployment, education, living environment and health. Each household in a ward is identified as deprived or non-deprived using each indicator and based on the deprivation cut-off point. The changes in rate of deprivation between 2001 and 2011 were used for poverty comparison, in order to determine the status of deprivation of wards in Limpopo province using

census data. Statistics South Africa's[48] (Stats SA) SuperCross was used in accessing and analysing the data. SuperCross is a programme that was designed by Stats SA to assist users who do not have access to the internet.

Noble et al.,[49] applied the following five domains and the associated indicators using Census 2001 data in identifying multiple deprived wards in South Africa:

● **Income** (this domain comprises three indicators)
  ● people living in a household that has a household income below 40 per cent of the mean equivalent household income,
  ● people in a household without a fridge (not used in this study owing to lack of data),
  ● people in a household with neither a TV nor a radio (not used in this study owing to lack of data.)

The income domain identifies concentrations of households living on a low income. Income classifications are obtained using broad ranges, therefore, the mean household income for each ward was calculated. It focused only on the number of households that have a household income below 4 per cent of the provincial mean equivalent household income.

● **Employment deprivation** (this domain has two indicators)
  ● people aged 15-64 who are unemployed (official definition),
  ● people aged 15-64 who are not working because of illness or disability.

Although between 2001 and 2011 Stats SA changed the economically active population from people aged 15 – 65 to people aged 15 – 64, for the sake of comparison the study maintained it as people aged 15 – 65.

South Africa uses two definitions of unemployment, namely the official (narrow) definition and an expanded definition, which are in line with the International Labour Organisation definitions.[50] Stats SA[51] defines unemployed people as 'those people within the economically active population who: (a) did not work during the seven days prior to the survey or census interview; (b) want to work and are available to start work within two weeks of the survey or census interview; and (c) have taken active steps to look for work or start some form of self-employment in the four weeks prior to the survey or census interview. The expanded definition of unemployment excludes criterion (c)'.

The unemployment rate (%) was computed as: $[(A+B)/(C+B)]*100$[52]

where A = the number of people who are unemployed

   B = the number of people not working owing to illness or disability

   C = the number of people who are economically active.

McCord[53] contends that there is a link between unemployment and poverty because a wage income is a key determinant of poverty. Unemployment, on the other hand, is one of the key factors of deprivation. The Quarterly Labour Force Survey (QLFS) is the primary source of information on

the labour market indicators, but can only provide estimates on employment, unemployment and economic activity at provincial level. The data cannot be disaggregated to lower levels. However, census data are used to provide labour market indicators at ward and village levels.

- **Education deprivation** (only one indicator was used)
    - people aged 18 - 65 with no schooling at secondary level or above.

The education domain focuses on the data of people aged 18-65 with no schooling at secondary level and above. It measures education deprivation in the working age population (employed or unemployed) in different wards, excluding those aged 15-17, as they are considered to be at school. Stats SA's QLFS focuses on the following levels of educational attainment: no education, education without grade 12, grade 12, and diploma and university degree.[54] One of the most important correlates of poverty in literature is education, which is a major indicator of human capital.[55]

- **Living environment deprivations** (this domain comprises six indicators)
    - people in a household without piped water in their dwelling or yard or within 200 metres,
    - people in a household without a pit latrine with ventilation or flush toilet,
    - people in a household without use of electricity for lighting,
    - people in a household without access to a telephone,
    - people living in a shack,
    - people in a household with two or more people per room (excluding couples).

This domain focuses on the quality of life of communities with regard to aspects in their immediate environment.

- **Health deprivation** (only one indicator was used)
    - years of potential life lost (YPLL).

YPLL takes into account the age at which death occurs, by giving greater weight to death at a younger age and a lower weight to death at an older age. Calculations were done using the upper reference age or life expectancy of 75 years, as used by Noble et al.[56] For comparison purposes, the same upper reference age was used. Death was recorded in the age groups (0-4), (5-9), (10-14), …, and (70-74) where age was measured in completed years. The number of deaths were then multiplied by years of life lost (which is 75 – the mid-point of the age group). YPLL was calculated by summing all years of life lost over all age groups. The ability to live a long and healthy life is a prerequisite for human development. Infant mortality has a profound effect on life expectancy.[57] The more people die in the early stages of life, the more life years are lost and the lower life expectancy will be.

This domain focused on wards with relatively high rates of people who die prematurely. It identifies areas with higher levels of mortality for the age profile of a population. YPLL was used to estimate the average years a person would have lived if he or she had not died

prematurely. The health domain identifies wards with higher levels of mortality for the age profile of a population.

Each domain represents a specific form of deprivation experienced by communities and each was measured individually using the indicators described. Individual domains can be used in isolation as measures of a specific deprivation. It should be noted that Noble et al,[58] derived data zones from Census 2001 in determining the most deprived wards. Data on a domain were aggregated into an overall index. The construction of the overall index of multiple deprivation was done by combining the five domain indices of Noble et al.[59] The higher the index score, the more deprived a ward is.

Data collection

Secondary data from Stats SA's 2001 and 2011 censuses were used. The variables used are those consistent with the computation of deprivation within each of the domains.

Results

Poverty cannot be addressed directly without detailed knowledge of its location, extent and characteristics.[60] Geographical dimensions of poverty inform both public policies on and research into the determinants of economic development and poverty.[61] Poverty maps are used to allocate resources to local municipalities or administrations, as a step in reaching the poor. Figure 1 depicts wards in the Limpopo province that are multiple-deprived based on an aggregate deprivation index of 0.727. There are 487 wards, of which 134 wards are deprived in two or more domains. These are referred to as multiple-deprived wards in this study. Figure 1 shows that the majority of the multiple-deprived wards are located in Sekhukhukne district (54), followed by Mopani district municipalities (41). There are 181 247 people living in the 23 wards that are deprived in all five domains. It is important to note that not everyone living in a multiple-deprived ward is deprived and that not all deprived people live in multiple-deprived wards. There are nine local municipalities without deprived wards, namely Molemole and Polokwane municipalities in Capricorn district; Makhado and Musina municipalities in Vhembe district and Bela-Bela, Lephalale, Modimolle, Mookgophong and Thabazimbi municipalities in Waterberg district. This could be attributed among other factors to the urban and semi-urban nature of the wards in those municipalities. Ba-Phalaborwa local municipality in Mopani district had only one ward that was identified as multiple-deprived, while other local municipalities had more than one multiple-deprived ward.

Figure 1: Spatial distribution of multiple-deprived wards in Limpopo, 2001
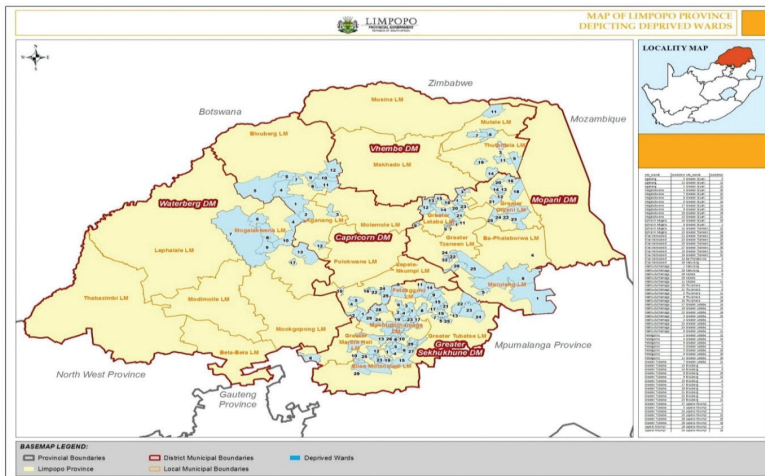

Table 1 shows the 2001 and 2011 population census data of municipalities in which multiple-deprived wards were found, as well as the absolute and relative population changes for 2001 and 2011. Three of the 16 municipalities experienced a decline in population size. The highest positive percentage change was experienced by Greater Tubatse municipality, probably because of the mining activities in the municipality. The highest negative percentage change was experienced by Aganang local municipality, probably owing to migration to cities.

Table 1: Absolute and relative changes of the population of municipalities with multiple-deprived wards, 2001 and 2011

Municipality	2001 Population	2011 Population	Change Absolute	Relative
Sekhukhune				
Makhuduthamaga	262 005	274 357	12 352	4.5%
Greater Tubatse	269 608	335 676	66 068	19.7%
Elias Motsoaledi	221 647	249 363	27 716	11.1%
Fetakgomo	92 598	93 794	1 196	1.3%
Ephraim Mogale	121 327	123 649	2 322	1.9%
Mopani				
Greater Letaba	218 873	212 701	-6 172	-2.9%
Greater Giyani	240 729	244 218	3 489	1.4%

Greater Tzaneen	375 586	390 094	14 508	3.7%
Maruleng	94 383	94 857	474	0.5%
Ba-Phalaborwa	131 536	150 637	19 101	12.7%
Capricorn				
Blouberg	171 721	162 628	-9 093	-5.6%
Lepelle-Nkumpi	227 970	230 350	2 380	1.0%
Aganang	146 872	131 163	-15 709	-12.0%
Waterberg				
Mogalakwena	298 439	307 682	9 243	6.0%
Vhembe				
Thulamela	581 487	618 462	36 975	6.0%
Mutale	82 893	91 870	8 977	9.8%

Table 2 shows the local share of multiple-deprived wards in all local municipalities in the Limpopo province in 2001. The table augments Figure 1, by also showing that Sekhukhune district municipality had the highest number of multiple-deprived wards (54), followed by Mopani district municipality (41), Waterberg (8) and Vhembe (8). Within Sekhukhune district, Makhuduthamaga local municipality had the highest number of deprived wards (18), followed by Greater Tubatse local municipality, with 17 wards. No municipalities in Waterberg district, except Mogalakwena local municipality, had wards identified as deprived.

Table 2: Local share of multiple-deprived wards per municipality, 2001

Local municipality	Total number of wards	Number of multiple-deprived wards	Local share of multiple-deprived wards
SEKHUKHUNE (121)	**(54)**		**(44.6)**
Makhuduthamaga	31	18	58.1
Greater Tubatse	31	17	54.8
Elias Motsoaledi	30	8	26.7
Fetakgomo	13	7	53.8
Ephraim Mogale	16	4	25.0
MOPANI (125)	**(41)**		**(32.8)**
Greater Letaba	29	16	55.2

Greater Giyani	30	13	43.3
Greater Tzaneen	34	8	23.5
Maruleng	14	3	21.4
Ba-Phalaborwa	18	1	0.1
CAPRICORN (121)		**(23)**	**(19.0)**
Blouberg	21	10	47.6
Lepelle-Nkumpi	29	10	34.5
Aganang	19	3	15.8
Molemole	14	0	0.0
Polokwane	38	0	0.0
WATERBERG (79)		**(8)**	**(10.1)**
Mogalakwena	32	8	25.0
Bela-Bela	9	0	0.0
Lephalale	12	0	0.0
Modimolle	9	0	0.0
Mookgophong	5	0	0.0
Thabazimbi	12	0	0.0
VHEMBE (97)		**(8)**	**(8.2)**
Thulamela	40	5	12.5
Mutale	13	3	23.1
Makhado	38	0	0.0
Musina	6	0	0.0
Total	**543**	**134**	**(24.7)**

Domain deprivation analysis

Income deprivation domain

Proportions of income-deprived households were computed using the 2001 and 2011 census data. The difference in the proportions of income-deprived households between 2001 and 2011 was computed for all 134 wards originally classified as income-deprived. Although there was a slight improvement in many wards, all 134 wards were still regarded as income-deprived. Many households were dependent on grants, allowances and remittances as the main income. This number

was higher in the traditional areas compared to urban areas. The results show that in 2011, 80 per cent of the wards (with a population of 81 179) in Blouberg had regressed in terms of the income domain, compared to 2001; and 50 per cent of the wards (with a population of 88 953) in Greater Letaba, had regressed. There are 15 local municipalities with a total of 58 wards that were income-deprived in 2001 and had regressed in 2011. The largest decreases were experienced in Blouberg and Greater Letaba. Ba-Phalaborwa local municipality was the only one where income improved.

Table 3 shows the number of wards that regressed and those that improved with regard to income by local municipality. The majority of the income-regressed wards were found in Mopani (31.0 per cent), followed by Capricorn district (29.3 per cent). The Waterberg and Vhembe districts had the lowest number of income-regressed wards.

Table 3: Income-regressed and improved wards, per municipality, between 2001 and 2011

Municipalities	Number of deprived wards	Deprived wards that regressed	Deprived wards that improved
SEKHUKHUNE			
Makhuduthamaga	18	6	12
Greater Tubatse	17	2	15
Elias Motsoaledi	8	3	5
Fetakgomo	7	3	4
Ephraim Mogale	4	1	3
MOPANI			
Greater Letaba	16	8	8
Greater Giyani	13	7	6
Greater Tzaneen	8	2	6
Maruleng	3	1	2
Ba-Phalaborwa	1	–	1
CAPRICORN			
Blouberg	10	8	2
Lepelle-Nkumpi	10	7	3
Aganang	3	2	1
Molemole	0	–	–
Polokwane	0	–	–

WATERBERG			
Mogalakwena	8	4	4
Bela-Bela	0	–	–
Lephalale	0	–	–
Modimolle	0	–	–
Mookgophong	0	–	–
Thabazimbi	0	–	–
VHEMBE			
Thukamela	5	3	2
Mutale	3	1	2
Makhado	0	–	–
Musina	0	–	–
Total	**134**	**58**	**76**

Table 4 shows the percentage of the population in deprived wards per district municipality. It shows that Sekhukhune District had the highest percentage (11.2 per cent) of the population that was income-deprived, followed by Mopani district, with 8.5 per cent, and Vhembe district had the lowest percentage (1.9 per cent) of the population that was income-deprived.

Table 4: Percentage of people who were income-deprived in 2011 by district municipality

District municipality	Total population	Number of people in multiple deprived wards	% of the total population
Sekhukhune	1 076 840	121 020	11.2
Mopani	1 092 507	92 702	8.5
Capricorn	1 261 463	42 581	3.4
Waterberg	679 336	18 326	2.7
Vhembe	1 294 722	25 103	1.9
Total	**5 404 868**	**299 732**	**5.4**

Employment deprivation domain

In 2011, the mean unemployment rate among the working age population was 54 per cent, which was a reduction of 70 per cent compared to the 2001 estimates. Of the 134 multiple-deprived

wards, 72 were employment-deprived. Table 5 shows the wards that were employment-regressed and improved per municipality between 2001 and 2011. It shows that some local municipalities experienced improvement in the number of employment-deprived wards between 2001 and 2011. The highest increase was experienced in Fetakgomo, Ephraim Mogale, Greater Tzaneen, Maruleng, Ba-Phalaborwa and Thulamela, where all the wards improved. The lowest increases occurred in Aganang and Mutale. Overall, 19 wards regressed while 115 improved.

Table 5: Employment-regressed and improved wards, per municipality, between 2001 and 2011

Municipalities	Number of deprived wards	Deprived wards that regressed	Deprived wards that improved
SEKHUKHUNE			
Makhuduthamaga	18	1	17
Greater Tubatse	17	3	14
Elias Motsoaledi	8	3	5
Fetakgomo	7	0	7
Ephraim Mogale	4	0	4
MOPANI			
Greater Letaba	16	4	12
Greater Giyani	13	1	12
Greater Tzaneen	8	0	8
Maruleng	3	0	3
Ba-Phalaborwa	1	0	1
CAPRICORN			
Blouberg	10	1	9
Lepelle-Nkumpi	10	2	8
Aganang	3	1	2
Molemole	0	–	–
Polokwane	0	–	–
WATERBERG			
Mogalakwena	8	2	6
Bela-Bela	0	–	–

Lephalale	0	–	–
Modimolle	0	–	–
Mookgophong	0	–	–
Thabazimbi	0	–	–
VHEMBE			
Thukamela	5	0	5
Mutale	3	1	2
Makhado	0	–	–
Musina	0	–	–
Total	**134**	**19**	**115**

Education deprivation domain

There was an improvement in the education domain in all wards except one ward in Greater Tubatse, which regressed in the education domain. While there was an improvement in 133 wards, 75 experienced very little improvement in terms of the education domain. Increased access to education probably assisted in the reduction of multiple deprivation.

Living environment deprivation domain

There was an improvement in terms of the living environment domain, but the level of improvement differed by ward and by municipality. Although absolute changes were observed in all 134 wards between 2001 and 2011, some wards experienced minimal improvement. This is attributed, to some extent, to the rural nature of the province. The majority of these wards are found in traditional settlements and all 134 wards fall wholly in rural areas. There was an increase in the number of shacks in all districts except Vhembe. The situation was probably exacerbated by the growing number of mining developments in certain areas, such as in some wards in Greater Tubatse and Mogalakwena. People tend to migrate to such areas in search of employment.

Health deprivation domain

Table 6 shows the wards that were health-regressed and improved per municipality between 2001 and 2011. It shows that some local municipalities experienced improvement in the number of health-deprived wards between 2001 and 2011. Seventy-four (74) wards improved in terms of the health domain, while 64 regressed.

Table 6: Health-regressed and improved wards, per municipality, between 2001 and 2011

Municipalities	Number of deprived wards	Deprived wards that regressed	Deprived wards that improved
SEKHUKHUNE			
Makhuduthamaga	18	10	8
Greater Tubatse	17	12	5
Elias Motsoaledi	8	4	4
Fetakgomo	7	3	4
Ephraim Mogale	4	3	1
MOPANI			
Greater Letaba	16	8	8
Greater Giyani	13	4	9
Greater Tzaneen	8	4	4
Maruleng	3	1	2
Ba-Phalaborwa	1	_	1
CAPRICORN			
Blouberg	10	3	7
Lepelle-Nkumpi	10	3	7
Aganang	3	2	1
Molemole	0	_	_
Polokwane	0	_	_
WATERBERG			
Mogalakwena	8	4	4
Bela-Bela	0	_	_
Modimolle	0	_	_
Mookgophong	0	_	_
Thabazimbi	0	_	_
Lephalale	0	_	_
VHEMBE			
Thukamela	5	1	4

Mutale	3	2	1
Makhado	0	–	–
Musina	0	–	–
Total	**134**	**64**	**70**

Multidimensionality of poverty

A measure of area deprivation should be able to quantify the deprivation at a spatial level lower than local municipality so that policy makers can target poverty alleviation programmes and resources better. Prioritised projects or programmes that are based on a similar deprivation analysis should find expression in the municipal Integrated Development Plans (IDPs) to enable targeted intervention. Mautjana[62] reports that a municipal IDP is supposed to be a clear manifestation of prioritised communal needs that require urgent and targeted attention from local municipalities. Figure 2 shows poverty by geographical locations. It shows the spatial distribution of multiple deprivation in Limpopo province at ward level using the 2011 data. Wards that are multiple-deprived in five domains are shown in red; the majority of these multiple-deprived wards are found in Sekhukhune and Mopani district municipalities.

Figure 2: Location of deprived wards according to the number of domains, based on 2011 data
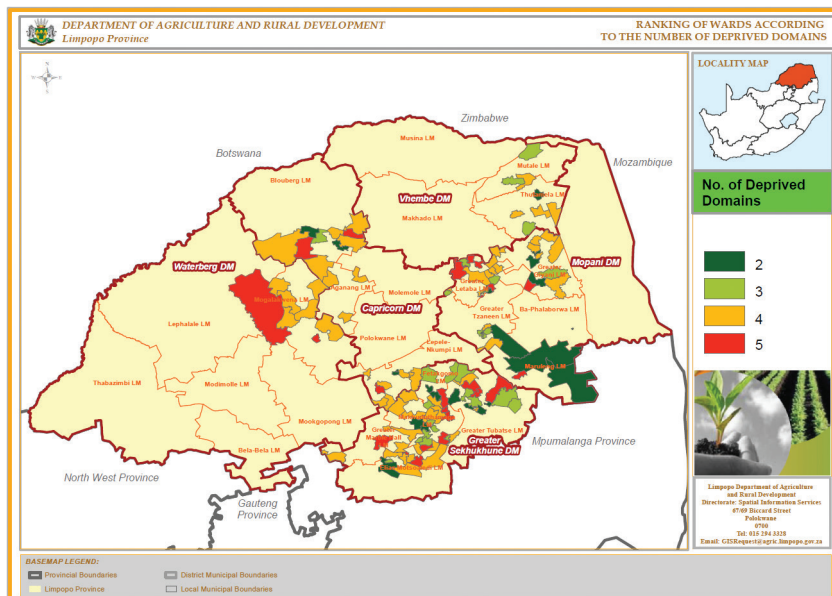
Table 7 shows the number of domains and the percentage of multiple-deprived wards, based on the 2011 data. Many of the multiple-deprived wards in Limpopo faced multiple issues, with the majority of these wards, almost 83 per cent, being deprived in three or more domains. Well over half (61 per cent) were deprived in at least four of the domains.

Table 7: Number and proportions of wards classified by the number of domains in which they were deprived

Number of domains	Number of wards	% of wards	Cumulative % of wards
5	23	17.16	17.16
4	60	44.78	61.94
3	28	20.90	82.84
2	23	17.16	100.00
1	0	0.00	100.00
Total	**134**		

Discussion

The areas in Limpopo province with the highest level of deprivation, based on the five domains of income, employment, education, living environment and health, are mainly found in rural areas: all 134 wards are located in rural areas. This is further confirmed by Makgetla,[63] who argues that, on average, municipalities in former homeland areas are not doing well in terms of the indicators of multiple deprivation. Poverty is, in many ways, the worst form of human under-development. Alkire, Conconi and Seth[64] argue that a reduction in the number of poor households or their average intensity of poverty may not necessarily ensure that those with a higher number of multiple deprivation types benefit. It should also be pointed out that although these 134 wards were identified as multiple-deprived, there were still pockets of multiple deprivation in wards that were not identified as multiple-deprived. The majority of the wards in all districts were found to have regressed in terms of their poverty situation in 2011 compared to 2001. According to Stats SA's 2012 report, poverty levels in South Africa decreased between 2000 and 2006, but increased between 2006 and 2009.[65] According to the Stats SA report, when using the food poverty line and the upper-bound poverty line, Limpopo was the poorest province in South Africa.[66] The report also provided a broad understanding of poverty in South Africa, beyond the narrow scope of money metrics measures.[67]

The majority of wards; about 62 per cent - were deprived in four or five domains. These wards were largely found in traditional areas. People living in traditional areas experience the harshest poverty compared to people living in other settlement types. Distortions and dynamics introduced by the apartheid system produced and perpetuated inequality. This is evident in the high disparity

between urban and rural settlements. There was also high disparity between the poor and non-poor in terms of access to services and facilities, such as access to piped water inside a dwelling or on-site, access to electricity and access to sanitation. Sekhukhune and Mopani districts had more wards with multiple deprivation compared to other districts.

Poverty alleviation strategies need to be mainstreamed as a strategic response to causes of poverty. Todaro[68] reports that employment creation is an essential ingredient of any poverty-focused development strategy. It is argued that the creation of safety nets for those who may be bypassed by the development process could be a strong instrument in overcoming extreme cases of poverty in South Africa.[69,70] Social grants constitute an important social safety net, despite being a short-term solution. The reduction of poverty after the demise of apartheid is attributed largely to South Africa's expansive social protection programmes.[71] The War on Poverty programme focuses mainly on rural areas. The announcement by the President of the Republic of South Africa, in 2015, of the Nine-Point Plan, which seeks to create decent and sustainable jobs and reduce poverty, among other objectives, will go a long way in addressing deprivation challenges in the country, if it is implemented.[72]

Green[73] argues that inequality transmits poverty from generation to generation as poor parents are less equipped to give their children a good start in life. The condition of poverty means not having enough financial resources to meet one's needs. There is a relationship between the level of education and poverty.[74] South Africa's policy on skills development is designed to provide education to all eligible citizens. Education and skills development should be accompanied by programmes to create employment that can absorb the skills.[75] The provision of basic services illustrates the extent to which the poor access different types of services and have their living conditions cushioned against poverty.[76] There is still significant disparity between the poor and the non-poor in terms of access to services and facilities, such as access to piped water inside a dwelling or on-site, access to electricity, etc.[77] Green[78] argues that the deliberate unequal distribution of resources and the systematic exclusion of the black populace by the apartheid regime undermined the fight against poverty.

Poor people are vulnerable to disease and this leads to premature death. Health services are mostly poor in poor wards. Living a long and healthy life is a prerequisite for human development.[79] Infant mortality is a reflection of a country's health status in general.[80] The global infant mortality rate decreased by 41 per cent, from 87 deaths per 1 000 live births in 1990, to 51 in 2011.[81] South Africa's infant mortality rate also declined during the same period.[82]

Unemployment levels are very high across South Africa and even worse in traditional areas. This high level of unemployment is a result of not only lack of job opportunities in the labour market, but also a mismatch between skills demanded by the labour market and skills supplied by job seekers. This mismatch has long been acknowledged by politicians and policy makers, but two decades into democracy, there is still little output from institutions of higher learning to match the required skills shortage. There are large disparities in the unemployment rate related to education. The levels of education below matric contain larger proportions of unemployed people compared to the tertiary qualification levels. Statistics South Africa's QLFS revealed that the unemployment rate for individuals with a tertiary qualification increased from six per cent in 1994 to 14 per cent in 2014.[83]

Inequality and social exclusion are widening in many countries, among rich and poor alike, partly as a result of rapid technological change and globalisation.[84] Current growth patterns are not providing enough decent jobs and are leading to widespread unemployment, particularly among the young and people who have received little or no schooling. Job creation is at the forefront of poverty reduction strategies in South Africa. The QLFS shows that the employment-to-population ratio, which is a proportion of a country's working age population that is employed, has remained at 41 – 45 per cent. Despite programmes such as EPWP and CWP being implemented by government to reduce the level of unemployment, the unemployment rate remains persistently high in South Africa.

Conclusion

There is no universal definition of poverty.[85] The multi-dimensional nature of poverty makes it difficult to formulate a definition that is universal. Providing a broad understanding of poverty beyond the narrow scope of money metrics measures and the improvement of an array of human needs requires a global approach to addressing poverty. Poverty remains a challenge in Southern Africa and specifically in South Africa, where it has racial, spatial and demographic interpretations. The multi-dimensional poverty determinants in South Africa stubbornly remain unemployment, inequality and poor quality of education. The power and inspiration of the MDGs served as a stimulus for poverty eradication and global development.[86] The MDGs remain an important benchmark in the United Nations' history.

In this study, it was found that all 134 wards that are multiple-deprived are found in traditional areas. There are, however, pockets of poverty in other wards that have not been identified as multiple-deprived. The majority of the municipalities are aware of challenges with some of the indicators in some of the domains, particularly in terms of the living environment domain. There have been notable poverty increases in some wards, particularly in traditional areas and informal settlements. The information on multiple deprivation indices could provide valuable information to local municipalities that would help them effectively allocate resources by making it possible to target those experiencing the greatest intensity of poverty.

Local municipalities should ensure that plans for interventions in the identified wards find expression in their IDPs. Much of the poverty in the country is a direct result of apartheid policies that denied equal access to education, employment, services and resources to the black population. There is a strong correlation between race and poverty in all the provinces of South Africa.[87] Poverty alleviation strategies need to be mainstreamed as a strategic response to the structural causes of poverty.

This information on multiple-deprived wards should assist municipalities in ranking community needs; in turn, this will assist policy makers in making recommendations to politicians for the purpose of prioritising programmes that are meant to address the identified challenges that communities are facing.

The identification of poor wards entailed counting the number of dimensions in which people suffer deprivation. Ravallion[88] argues that an index that contains a mixture of different

dimensions may be of no help to policy makers and implementers, since prioritisation of the different components of the index could be a challenge. Policy makers and implementers may prioritise the different components of the index. They could use the results to deal directly with wards that have been identified as deprived or target households within a ward that are multiple-deprived. South Africa's progress in reducing deprivation rests on its expansive pro-poor social protection programmes. These programmes recognise the multi-dimensional nature of poverty despite not offering a sustainable solution to reducing poverty. Multiple deprivation analyses should be used to target poverty reduction resources, in order to reduce poverty effectively in South Africa. This paper adequately demonstrates that this can be achieved by the application of the deprivation domains and indicators, as described by Noble et al.[89]

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