District analysis of poverty dynamics in rural South Africa

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Abstract

Persistent poverty is a major developmental challenge for South Africa and has multifaceted dimensions. This paper profiled and investigated poverty transitions among rural households in 22 district municipalities in South Africa. Foster-Greer-Thorbecke indices were applied to panel data obtained from the National Income Dynamics Study from 2008 to 2017. Findings indicate that poverty levels varied across districts and poverty was most prevalent in Zululand, OR Tambo and Sisonke districts. Furthermore, districts with high poverty rates also had high poverty gap ratios. Poverty transition analyses revealed that in 82% of the districts, poverty declined between 2008 and 2017, while it increased in 13% of the districts. This transition was not mirrored between waves, with the majority of households remaining in the same poverty status between wave (*t*) and wave (*t+1*). For poor households, this pointed to welfare that was not improving between waves. The study recommends that these traditional rural districts be a major focus of poverty alleviation efforts. The role of the state in providing stability to combat poverty in these districts is encouraged through promotion of higher education as this is positively associated with employment and would reduce dependence on social transfers. Promotion of agriculture as a business is also recommended through education and skill training as a collaboration between district municipalities and the provincial departments of agriculture. Existing literature has investigated poverty dynamics at aggregated levels. This study adds to this literature by providing insights from disaggregated profile and analysis of rural poverty transitions in district municipalities.

Keywords: Foster-Greer-Thorbecke indices, Household poverty dynamics, Panel data, Rural district municipalities, South Africa.

1. Introduction

Poverty, broadly defined as deprivation and lack of opportunities and choices (United Nations 2020; Chambers 2006; Leßmann 2011), remains one of the major challenges facing countries globally and South Africa is not exempted from this challenge. During the Millennium Development Goals (MDG) era, countries committed to eradicating extreme poverty and hunger by 2015, and the commitment to poverty eradication continued with the adoption of the Sustainable Development Goals (SDG) in 2016, with the first SDG of no poverty. Poverty is a complex phenomenon, and its eradication interlinks with the achievement of other SDGs such as SDG 2 (zero hunger), SDG 3 (good health and well-being), SDG 4 (quality education), SDG 5 (gender equality) and SDG 10 (reduced inequality).

In South Africa, a report by Statistics South Africa (Stats SA 2017a) indicates that poverty remains high in the country, at about 55.5%, with the majority of poor people (53.5%) residing in rural areas in 2015. The National Development Agency reported the figure to be 65.4% of the rural population living below the poverty line in 2015 (National Development Agency 2019). By 2017, the poverty rate was 52.2%, using the nationally representative NIDS data (Zizzamia, Schotte, and Leibbrandt 2019). Over the years, the South African government has introduced policies to try to address a number of economic challenges of which poverty and vulnerability are among the top priorities. These policies include the provision of social grants, free basic education, primary health care, housing, water, electricity, and sanitation services (World Bank 2018). The National Development Plan (NDP) identifies poverty as one of the major challenges it seeks to address. Some progress is evident, but more remains to be done, particularly in rural areas, which are characterised by greater poverty and inequality than urban areas, as rural households remain trapped in a vicious cycle of poverty (National Planning Commission 2011; National Development Agency 2019).

Literature in South Africa and globally shows that poverty is dynamic and that households can transition in and out of poverty over time as opportunities and resources change (Baulch and McCulloch 2002; Roberts 2001; Bokosi 2007; Zizzamia, Schotte, and Leibbrandt 2019). A number of triggers facilitate these transitions, some relate to the job market, others to demographic factors (Zizzamia, Schotte, and Leibbrandt 2019) as well as to environmental factors. As defined in the literature, poverty dynamics refer to the inter-temporal changes in the poverty status of particular individuals or households over time (Yaqub 2000). This differs

from general measures of poverty trends and poverty statuses, which use cross-sectional and aggregated data, without focusing on specific individuals or households.

At the same time, poverty also varies spatially or by geographic location due to access to economic activities, proximity to markets and infrastructure (Noble and Wright 2013; Burger et al. 2017; David et al. 2018). Additionally, poverty headcount and poverty gap which measure the percentage of people living below the poverty line as well as the depth and dimension of poverty, respectively, can vary between areas in the same region, even when income levels are similar (OECD 2009). These are important to understand as they reveal which areas require relatively more resources to pull households above the poverty line (World Bank 2018).

In South Africa, spatially disaggregated analyses of poverty in rural areas are scanty, particularly at district and local municipality levels. Available literature on poverty in South Africa is mainly at aggregated national level (Finn and Leibbrandt 2013; Finn and Leibbrandt 2016; Schotte, Zizzamia, and Leibbrandt 2018), even though literature, including some South African literature, indicates that poverty differs spatially (Jaiyeola and Bayat 2019; Baulch and McCulloch 2002; Roberts 2001; David et al. 2018). Therefore, nationally aggregated analyses may conceal differences that exist within and across areas.

To improve understanding of poverty in South Africa, spatially disaggregated analyses of poverty over time are important. Such analyses can aid policies and strategies seeking to alleviate poverty, particularly in rural areas. Thus, this study seeks to profile and investigate South African rural household poverty and poverty transitions over time at district municipality level. The study further analyses and compares poverty headcount and poverty gaps among these districts to further understand the depth and dimensions of poverty across these municipalities. The study adds to existing literature by providing disaggregated profile and analysis of rural poverty transitions and poverty depth and dimensions in South Africa. The structure of the paper is as follows: section two reviews literature on poverty dynamics in South Africa; section three outlines the research method; section four presents the results and section five gives the final conclusions and recommendations.

2. Poverty dynamics in South Africa

Poverty dynamics have been analysed in South Africa, beginning with the research by Carter and May (2001) who developed a typology of structural and stochastic poverty. The study used the 1993 and 1998 South African Living Standards Survey and found that, following the end

of the apartheid regime, relatively more South Africans were experiencing structural poverty. In addition, these households lacked the level of income and assets needed to exit that poverty. Roberts (2001), using data from the KwaZulu-Natal Income Dynamics Study (KIDS) from 1993 to 1998, found that over 30% of households in the province were transitioning in and out of poverty, while about 22% were chronically poor. The characteristics of these two groups differed, with the transient poor having on average smaller household sizes, being better educated, less likely to be headed by females and with relatively fewer livestock than the chronically poor. Foster-Greer-Thorbecke (FGT) or *P-alpha* poverty measures and the expenditure per adult equivalent, were used to measure the poverty status of households. Thus, between 1993 and 1998, structural poverty prevailed at the national level while in KwaZulu-Natal, households experienced transient poverty. The structural changes that were taking place in the country would have contributed to changes/movements in poverty statuses of households as was found by Roberts (2001). Thus, the disaggregation to provincial level provided further insights into the type of poverty (transient) experienced at that level because of changes that were taking place at the national level.

Woolard and Klasen (2005) used the same dataset for KwaZulu-Natal, though focusing only on the African household sample, to investigate income mobility and poverty dynamics. The poverty line was R212 per adult equivalent per month in 1993 prices. The study found that there were poverty entries and exits within the sample. Demographic factors were the main reason for poverty entry of over 27% of households and poverty exit for about 24% of households. Economic factors included loss of employment by a household head or family member and a fall in household income. These factors accounted for over 72% of poverty entries and 76% of poverty exits. Again, further disaggregation of the data provided more insight on poverty facing a particular group of households within the province, which was otherwise not evident at a higher level of aggregation.

Agüero, Carter and May (2007) also used the KIDS data set, but with an additional wave three of the data conducted in 2004. The authors used both income and expenditure as indicators of welfare. The $FGT_{0,1,2}$ were estimated for 1993, 1998 and 2004. The expenditure and income measures gave similar poverty results (i.e. converged) as would be expected from economic theory. However, there were some differences because of the reporting of the data. Using the income-based measure, the results showed that 35% of the households were chronically poor, while the corresponding figure was 28% using the expenditure-based measure. On the other hand, 42% of the households were transitory poor using the income measure and 45% of the

households using the expenditure measure. Thus, relatively more households in KwaZulu-Natal were transitory poor between 1993 and 2004, like the period 1993 to 1998 as observed by Roberts (2001). This distinction between chronically poor and transitory poor is important as the policy interventions required to address these types of poverty differ.

Finn, Leibbrandt and Levinsohn (2014) used data from the first two waves of National Income Dynamics Study (NIDS) (2008-2010) to analyse poverty transitions. They found that, using the poverty line of R515 per capita per month, 70% of the panel members who were poor in wave one remained poor in wave two. This coincided with the period of economic downturn in the years 2008 to 2010. There were, however, relatively more poverty exits than entries among the panel members in the two waves. This corresponded with the national poverty headcount reduction around that period.

For the period 2008 and 2012, Finn and Leibbrandt (2013) analysed poverty dynamics of a balanced panel of household members throughout the country, using three waves of NIDS dataset. The study found that 64% of the balanced panel members who were poor in wave one, remained poor in wave three, while 22% who were non-poor in wave one, were poor by wave three. The poverty line used was R636 per capita per month in real terms based on the cost of basic needs approach. Similar to the study by Woolard and Klasen (2005), demographic factors, such as household size, were important contributors to poverty transitions. Other variables included gender, rural areas, race and property ownership. These variables correlated with a lower probability of poverty exit. For rural areas, this again hinted that poverty was prevalent in these areas.

When including NIDS wave four in the analysis, Finn and Leibbrandt (2016) found that 73% of panel members who were poor remained poor between waves one and four, while 26% of the members transitioned to being non-poor by wave four. About 79% of panel members who were not poor remained non-poor between waves one and four. The study used a different poverty line based on the food poverty line together with the average amount of non-food expenditure. This amounted to R1283 in January 2015 prices.

Schotte, Zizzamia, and Leibbrandt (2018), using the same four-wave dataset from NIDS, employed a multivariate probit model to determine the probability of households being poor in the current period, conditional on their poverty status in the previous period. Literature indicates that the initial poverty status of households could affect the likelihood of experiencing poverty in the future (Zizzamia, Schotte and Leibbrandt 2019). In addition to differentiating

between the transient poor and the chronic poor, the study also differentiated between those who were in the middle class (elite) category and those who were non-poor but vulnerable to falling into poverty. The explanatory variables included characteristics of the household head in period t-1, race, gender, age, education and employment status, geographic location (urban or rural) and accounted for provincial and time fixed effects. The study found that households with young household heads were more likely to change poverty status. Household size, gender, location, and race were found to affect household poverty transitions.

More recently, Zizzamia, Schotte and Leibbrandt (2019) analysed poverty dynamics utilizing NIDS data from 2008 to 2017. The study focused on poverty persistence, vulnerability and the stable middle class, using expenditure as a measure of economic welfare. The study used Stats SA Upper Bound Poverty Line (UBPL) and the Food Poverty Line (FPL). Overall, the study found that persistent (chronic) poverty was the main form of poverty experienced in South Africa over this period. About 27% of the sample were transient poor and vulnerable. The transient poor and vulnerable households had similar household characteristics, which differed from those of chronically poor. The analysis also disaggregated urban, rural and farm areas. The majority of the chronically poor households were located in the rural areas, whereas the majority of the transient poor and the vulnerable households were located in urban areas.

Using the same five-wave NIDS data and the Food Poverty Line (FPL), Gumede (2021) found that all three money-metric measures of poverty, i.e. headcount poverty, poverty gap ratio and squared poverty gap ratio consistently declined from 2008 to 2017 at the national level in South Africa. Although in 2010, the poverty gap and the squared poverty gap ratios were the same as they were in 2008. The decline in headcount poverty was mirrored at provincial level, with exceptions in the Western Cape, Northern Cape and North West provinces, particularly between 2014 and 2017 when headcount poverty increased. The findings of the study also supported what has been found in other studies (Stats SA 2017a; Kruger 2018; National Development Agency 2019) that poverty was relatively higher in rural areas than in urban areas. Applying a different approach to the approaches that have been used in the recent literature, and building on the work of Cater and May (2001) and others, Schotte (2019) investigated structural poverty dynamics in South Africa. The author developed and used an asset poverty line to distinguish between structural and stochastic poverty entries and exits. A mixed methods approach combining NIDS data and a case study of Khayelitsha Township in Cape Town was used. The findings revealed factors such as transitions into and out of employment, quality of networks, access to financial capital and accumulated debt as well as

geographic location away from urban centres and the associated risks being among the main triggers into and out of poverty. These factors were found to be consistent between quantitative and qualitative results.

Other studies that have examined poverty dynamics in South Africa have focused on the trends and patterns of poverty pre- and post-colonialism, identifying the structural factors that have contributed to the high poverty rates observed in the country (Khumalo 2013; Mokhutso 2022). These studies, however, did not investigate the inter-temporal changes in the poverty status of particular individuals or households over time (Yaqub 2000), as poverty dynamics is defined in the context of this article.

Studies on poverty dynamics in South Africa have been at the national level with some distinction between urban and rural areas. However, further disaggregation within rural areas, where poverty has been found to be relatively high, has not been undertaken. Thus, differences that may exist within rural communities have not yet been explored.

David et al. (2018) showed the importance of disaggregating poverty analyses to lower levels by analysing spatial poverty and inequality in South Africa at the local municipality level using the 2011 census. A spatial econometric model together with the Morgan I local and global tests were used. The study found significant differences in income and multidimensional poverty across municipalities due to differences in economic activities and welfare outcomes. These findings further support what was observed by Noble et al. (2014) that there were differences in poverty at district municipalities and local municipalities. Such disaggregated analyses are important, particularly in South Africa, where municipalities have the responsibility to promote local economic development and thus reduce poverty.

Important contributions to the literature have been made by previous studies on poverty dynamics in South Africa. However, a knowledge gap remains in terms of the dynamics of rural poverty at spatially disaggregated levels over time.

3. Methods and procedures

3.1 Data

Nationally representative longitudinal data is usually a challenge in most developing countries, and South Africa is not an exception. For those that are available, further disaggregation of the data becomes an even greater challenge as the data loses its representativity. NIDS provides nationally representative longitudinal data of individuals and households in South Africa. The survey follows a panel of individuals and collects data from these same individuals over time. The data includes, among others, their income and expenditure which is collected approximately every two years. There are currently five waves of NIDS, i.e. wave one conducted in 2008, wave two in 2010, wave three in 2012, wave four in 2014 and wave five in 2017. In this research, all five waves of the NIDS dataset were used, however, only the rural component of the dataset was used in this paper.

The analysis was limited to individuals successfully interviewed in all five waves. Furthermore, only individuals identified as household heads, who did not change their area of location in all five waves, were selected. The balanced panel generated therefore represented 596 households. Some of the provinces had very few observations, partly due to their urban nature and were therefore, not included. The remaining number was 511 across four provinces of South Africa, namely KwaZulu-Natal (KZN), Eastern Cape (EC), Limpopo (LP) and North West (NW) provinces. The analysis was at district municipality level, with 22 districts in these four provinces. Table 1 shows the number of districts represented in each province:

Table 1: Number of districts

Province	District municipalities in sample	Total number of districts per province
KwaZulu-Natal	10	10
Eastern Cape	4	6
Limpopo	5	5
North West	3	4
Total	**22**	**25**

Source: Mamabolo (2022) compiled from NIDS survey 2008-2017

3.1.1 Demographic characteristics of household heads

Table 2 shows the demographic characteristics of the household heads in the data as at 2008. Females with an average age of 54 years headed the majority of these households, except in

the districts of the Eastern Cape and North West, where the average age of the household heads was 55 and 50 years respectively. The households had on average four members, while in KwaZulu-Natal the average household size was slightly larger with five members per household.

Table 2: Demographic characteristics of household heads as at 2008

Variables	KwaZulu-Natal Districts	Eastern Cape Districts	Limpopo Districts	North West Districts	All districts
Gender of household head					
Female (%)	83,69	78,50	85,58	64,18	80,43
Male (%)	16,31	21,50	14,42	35,82	19,57
Average age (Years)	54	55	54	50	54
Average household size (number)	5	4	4	4	4
Education level of household head					
No schooling (%)	40,77	23,36	39,42	13,43	33.27
Primary (%)	40,77	45,79	28,85	34,33	38.36
Secondary (%)	12,45	22,43	17,31	31,34	18.00
Matric	3,00	1,87	9,62	11,94	5.28
Diploma/certificate beyond matric	1,29	2,80	0,96	5,97	2.15
Bachelor's degree	-	0,93	0,96	-	0.39
Marital status of household head					
Married (%)	18,03	24,30	24,04	22,39	21,14
Widow/widower (%)	47,21	44,79	31,73	29,85	41,49
Divorced/separated (%)	1,72	11,21	10,58	7,46	6,26
Living with partner (%)	4,72	0,93	1,92	2,99	3,13
Never married (%)	28,33	17,76	31,73	37,31	27,98
Source of income in 2008 (% of households)*					
Wages	40,77	30,09	41,35	65,67	41,88
Social grants	84,12	65,49	75,96	68,66	76,91
Investment income	0,00	0,88	0,00	2,99	0,39
Capital income	2,58	0,88	0,96	1,49	1,76
Remittances	15,45	15,04	21,15	11,94	16,05
Agricultural activities	27,47	13,27	32,69	11,94	23,48
Source of income in 2017 (% of households)*					
Wages	37,77	38,05	48,08	53,73	41,68
Social grants	76,39	76,11	81,73	74,63	77,50
Investment income	3,43	7,96	7,69	5,97	5,68
Capital income	0,86	0,88	0,96	2,99	1,17
Remittances	29,18	26,55	27,88	20,90	27,20
Agricultural activities	20,17	29,20	5,77	8,96	18,00

Source: Adapted from Mamabolo, Chaminuka, and Machethe (2021)

Table 2 also indicates that the education level of these household heads was no higher than secondary schooling. Only about two percent of the household heads had a diploma or certificate beyond matric, and about 0.39% had a Bachelor's degree. About 41% of the household heads were widows/widowers, followed by 28% who were never married. Table 2 also indicates six sources of income for these households in 2008 and in 2017. In both periods, about 77% of the households received social grants, followed by wages which were earned by about 42% of the households. The percentage of households receiving remittance income increased from 16% in 2008 to 27% in 2017 across all districts, while the percentage of households earning income from agricultural activities declined from 23% in 2008 to 18% in 2017. The decline was observed among all districts, except in the Eastern Cape, where the percentage of households earning income from agricultural activities increased from 13% in 2008 to 29% in 2017. Thus, this source of income became relatively more important in the province. These characteristics of the household heads remained similar from 2008 to 2017, except the age of the household heads which progressively changed with the panel.

3.2 Data analysis

The definition of a poor household in this paper is a household whose per capita income falls below the poverty line in a given year. To determine the poverty status of rural households, the study used the national poverty line from Statistics South Africa (Stats SA), specifically, the Lower Bound Poverty Line (LBPL). This poverty line refers to the amount required for an individual to afford the minimum required daily energy intake and the average amount derived from non-food items of households whose total expenditure is equal to the food poverty line (Stats SA 2018). This poverty line was chosen because it gives an indication of the minimum amount an individual requires to purchase the most basic food basket and essential non-food items. In addition, the LBPL is the most commonly used poverty line in the country's poverty reduction targets in the Medium Term Strategic Framework (MTSF), the National Development Plan (NDP) as well as the Sustainable Development Goals (SDGs) (Stats SA 2017a). Table 3 gives the LBPL amounts used in each year under analysis in this study. The LBPL ranged from R447 in 2008 to R758 in 2017.

Table 3: National Lower Bound Poverty Lines

Year	Lower Bound Poverty Line (Value in ZAR)
2008	R447
2010	R466
2012	R541
2014	R613
2017	R758

Source: Stats SA, 2018

The study follows an income-based approach to measure poverty following Baulch and McCulloch (2002). This is because at the core of the definition of poverty, is the inability of households to acquire a certain minimum bundle of goods (Baulch and McCulloch 2002), and this largely depends on their income. The household income data was converted to income per capita and adjusted to December 2016 amounts using Stats SA Consumer price Index (CPI).

The LBPL was used in combination with the Foster-Greer-Thorbecke (FGT) or Pα poverty measure to calculate the poverty headcount (α equal to zero) and poverty gap (α equal to one) ratios. Equation one shows the FGT formula:

$$FGT_{\alpha} = \frac{1}{N}\sum_{i=1}^{H}\left(\frac{z-y_i}{z}\right)^{\alpha} \quad 1$$

Where:

- FGT_{α} : the weighted poverty index
- α ranges from 0 to 2; 0 for incidence or headcount poverty, 1 for depth and 2 for severity of poverty
- z : the poverty line
- H : the number of households below the poverty line
- N : the total number of households in the survey
- y_i : the per capita income of a household
- $z - y_i$: the poverty gap
- $\frac{z-y_i}{z}$: the poverty gap ration
- $\frac{H}{N}$: the proportion of the population that falls below the poverty line

The poverty transitions of the households were determined using the headcount poverty estimates. The poverty transition was determined based on the poverty status of the household in wave (*t*) compared to the poverty status in wave (*t+1*). In other words, poverty status in 2008 was compared to that of 2010, 2010 was compared to 2012, 2012 was compared to 2014 and 2014 was compared to 2017. Thus, the analysis represents changes between two consecutive

waves. This approach follows that of Zizzamia, Schotte, and Leibbrandt (2019). The analyses were carried out using Stata 2014 software and Microsoft Excel 2016. The Distributive Analysis Stata Package (DASP) developed by Abdelkrim and Duclos (2007) was used for the FGT analyses.

4. Results and discussion

4.1. Rural household income per capita

This section describes the district distribution of average income per capita over the period 2008 to 2017. It also gives an indication of changes in income per capita from 2008 to 2017. The households generated income from six sources over the period. These were social grants, wages, capital income, remittance income, income from agricultural activities and investment income. The per capita income results in this section were determined based on these income sources and are shown in Table 4. The per capita income is presented from lowest to highest based on the average over the period.

Table 4: Per capita income among district municipalities: 2008 to 2017*

District	Per capita Income					Average
	2008	2010	2012	2014	2017	
Zululand[KZN]	468.00	207.00	415.00	619.00	670.00	475.80
Vhembe[LP]	485.00	518.00	290.00	835.00	917.00	609.00
Umgungundlovu[KZN]	591.00	445.00	777.00	834.00	520.00	633.40
Waterberg[LP]	613.00	523.00	654.00	688.00	867.00	669.00
Greater Sekhukhune[LP]	472.00	780.00	594.00	736.00	807.00	677.80
Amajuba[KZN]	843.00	562.00	872.00	827.00	433.00	707.40
Ugu[KZN]	562.00	575.00	739.00	910.00	795.00	716.20
iLembe[KZN]	579.00	769.00	728.00	848.00	707.00	726.20
Umzinyathi[KZN]	556.00	621.00	762.00	867.00	944.00	750.00
Chris Hani[EC]	613.00	637.00	806.00	847.00	875.00	755.60
Mopani[LP]	591.00	509.00	765.00	1,033.00	1,174.00	814.40
Uthungulu[KZN]	618.00	745.00	985.00	1,102.00	1,208.00	931.60
Capricorn[LP]	851.00	1,005.00	995.00	1,124.00	1,097.00	1,014.40
Sisonke[KZN]	663.00	788.00	1,093.00	1,249.00	1,311.00	1,020.80
Alfred Nzo[EC]	862.00	854.00	1,171.00	1,123.00	1,365.00	1,075.00
Dr Ruth Segomotsi Mompati[NW]	820.00	788.00	1,137.00	1,424.00	1,278.00	1,089.40
OR Tambo[EC]	736.00	748.00	1,377.00	1,320.00	1,467.00	1,129.60
Uthukela[KZN]	643.00	1,026.00	1,110.00	1,451.00	1,558.00	1,157.60
Umkhanyakude[KZN]	847.00	753.00	1,445.00	1,361.00	1,465.00	1,174.20
Joe Gqabi[EC]	690.00	1,301.00	1,383.00	1,199.00	1,625.00	1,239.60
Ngaka Modiri Molema[NW]	1,766.00	2,377.00	2,079.00	2,721.00	2,318.00	2,252.20
Bojanala[NW]	1,582.00	2,407.00	2,284.00	3,502.00	2,738.00	2,502.60

Source: Mamabolo (2022) compiled from NIDS survey 2008-2017
Provinces: KZN= KwaZulu-Natal, NW=North West, EC= Eastern Cape, LP= Limpopo
***Values in ZAR

Table 4 indicates that Zululand had the lowest average per capita income among all the districts. This was less than R500 per month. From Table 4, the per capita income in about 55% of the districts was less than R1000 per month, while the remaining 45% of the districts had per capita income of between R1014 and R2500. Bojanala district had the highest per capita income throughout the period, ranging from R1582 in 2008 to R2738 in 2017. On average, the difference between Bojanala district and the district that had the lowest per capita income was around R2000 per month.

With the exception of uMgungundlovu and Amajuba districts, all other districts had higher per capita income in 2017 than in 2008. Thus, there was a general increase in real per capita income over the period. In terms of Rand amounts, the greatest increase was in Bojanala district with an increase of R1156 from 2008 to 2017, followed by Joe Gqabi with an increase of R935 from 2008 to 2017 and lastly uThukela with an increase of R915 from 2008 to 2017. When

measuring the percentage increase however, the highest increase was in uThukela (142%), followed by Joe Gqabi (135%) and OR Tambo (99%). These increases were however smaller in Rand value compared to Bojanala district.

The per capita incomes among some of these districts compared well with what Finn, Leibbrandt, and Levinsohn (2014) found in 2008 and 2010, using 2008 real prices. The study found the mean per capita income in rural formal areas was R1132 in 2008 and R1228 in 2010. In the tribal authority areas, the amounts were lower at R527 in 2008 and R624 in 2010. These amounts were within the same range as was observed among these districts in those years, even when considering the difference in base years. Using estimates based on Stats SA annual household income in traditional areas and average household size for 2014 and 2015, household income per capita among female-headed households was R1077 and R1188 among male-headed households in rural traditional areas with 2015 as the base year (Stats SA 2017b). These were also within the range of what was observed among the rural districts in this study.

Overall, real average per capita income in the districts increased from 2008 to 2017, although there were some fluctuations in some of the years. *Ceteris paribus*, using this income per capita measure, households were generally better off in 2017 than in 2008. From the six income sources identified, the percentage of households receiving income from social grants and remittance income increased in the period 2008 to 2017, with the highest increase from remittance income. This contributed to the general increase in per capita income observed in Table 4.

Having this picture of district income per capita, the next section reports the poverty status of these districts. The poverty status was determined by comparing household income per capita in each district with the national poverty line.

4.2 Poverty headcount

The per capita income reported in the previous section represented the average income per capita for each district over the period 2008 to 2017. In this section, the actual income per capita of each household in each district was used to determine the poverty headcount. The headcount poverty was estimated using the FGT_0 (α equal 0). Table 5 shows the poverty headcount ratios for the districts.

Table 5: Headcount poverty at district municipality level: 2008 to 2017

District	Headcount poverty ratio					Average
	2008	2010	2012	2014	2017	
Zululand[KZN]	0.8475	0.9302	0.9268	0.7540	0.6885	0.8294
OR Tambo[EC]	0.8120	0.8912	0.8000	0.7891	0.7192	0.8023
Sisonke[KZN]	0.8512	0.8413	0.7397	0.6960	0.8523	0.7961
Greater Sekhukhune[LP]	0.8750	0.8889	0.8851	0.6417	0.5256	0.7633
Uthungulu[KZN]	0.7862	0.8293	0.7200	0.6575	0.7959	0.7578
ILembe[KZN]	0.8333	0.9200	0.5584	0.6203	0.7763	0.7417
Vhembe[LP]	0.6923	0.7813	0.9524	0.7903	0.4038	0.7240
Umkhanyakude[KZN]	0.9737	0.9740	0.6082	0.5000	0.5342	0.7180
Mopani[LP]	0.8182	0.8617	0.703	0.5686	0.63	0.7163
Amajuba[KZN]	0.7031	0.7660	0.5930	0.6000	0.9121	0.7148
Umgungundlovu[KZN]	0.8485	0.7901	0.7000	0.4557	0.7500	0.7089
Waterberg[LP]	0.8416	0.6514	0.768	0.6286	0.5758	0.6931
Uthukela[KZN]	0.8841	0.7716	0.7256	0.5563	0.4867	0.6849
Umzinyathi[KZN]	0.7576	0.7407	0.5794	0.6320	0.7016	0.6823
Ugu[KZN]	0.6783	0.7965	0.6938	0.4452	0.7515	0.6731
Alfred Nzo[EC]	0.8085	0.8019	0.6863	0.4945	0.5543	0.6691
Dr Ruth Segomotsi Mompati[NW]	0.6111	0.7200	0.7639	0.4091	0.6835	0.6375
Chris Hani[EC]	0.8198	0.6606	0.5143	0.537	0.5727	0.6209
Capricorn[LP]	0.6875	0.4754	0.6574	0.5657	0.5532	0.5878
Joe Gqabi[EC]	0.7167	0.625	0.5507	0.5	0.4667	0.5718
Ngaka Modiri Molema[NW]	0.4737	0.8462	0.5691	0.3613	0.4537	0.5408
Bojanala[NW]	0.3333	0.2188	0.3158	0.4074	0.3279	0.3206

Source: Mamabolo (2022) compiled from NIDS survey 2008-2017
Provinces: KZN= KwaZulu-Natal, NW=North West, EC= Eastern Cape, LP= Limpopo

Table 5 is arranged from the district with the highest headcount poverty ratio to the district with the lowest headcount poverty. Zululand had the highest average headcount poverty among all the districts. This was over 82% of households in that district living below the poverty line over the period. The districts of OR Tambo and Sisonke followed this with an average poverty headcount of 80% and 79% respectively. Zululand district also had the least per capita income among all the districts, as was observed in the previous section. This coincides with the high headcount poverty recorded. Noble et al (2014) identified these three districts as among the top ten districts with the highest headcount poverty using census data from Stats SA. The poverty rate ranged between 81 % and 76 % in these districts. In addition, a report by Stats SA indicated the Eastern Cape Province as the poorest province, followed by KwaZulu-Natal province (Stats SA 2016). These districts form part of these two provinces. Thus, the relatively high poverty rates in the districts of these provinces would be expected.

Table 5 also indicates that Bojanala district had an average headcount poverty of 32% over the period 2008 to 2017. This was the least average headcount poverty among all the districts. This was the only district that had less than 50% of the households living below the poverty line in all the waves. This district also had the highest per capita income over the period, as observed in the previous section. Using NIDS data, Gumede (2021) observed that the North West province had the least poverty head count among these provinces in four out of the five waves. Thus, it would be expected that the districts in North West province would also have the least poverty headcount.

The results also indicate that headcount poverty declined by 2017 from what it was in 2008 in 77% of the districts, indicating a general decline in the sample. Five of the districts however had relatively more households living below the poverty line in 2017 than in 2008. These were Sisonke, uThungulu, Amajuba, Ugu and Dr Ruth Segomotsi Mompati. These districts are located in KwaZulu-Natal, except Dr Ruth Segomotsi Mompati, which is in North West. Among these, the greatest percentage increase in headcount poverty was in the Amajuba district, at around 29%. This district had the least per capita income in 2017 among all the districts in the sample, at R433 per month. This income was low in comparison to the poverty line of R758 in that year. At the provincial level, Gumede (2021) also observed a general decline in headcount poverty in these four provinces between 2008 and 2017. The relative increase in average headcount poverty among these five districts may have been outweighed by the decrease in the other districts in the provinces, thus resulting in an overall decline in poverty at the provincial level.

The poverty headcount ratios observed among these districts were within the same range as the headcount ratios reported by Stats SA (2017a) for rural areas at the national level in the years, 2006, 2009, 2011 and 2015 using the Lower Bound Poverty Line. Stats SA reported around 75% of households living below the poverty line in 2006 at the national rural level. This percentage declined to around 59% in 2011, and increased slightly, to around 65% in 2015. Fransman and Yu (2019) also observed a decline in poverty over the period 2001 to 2016, using both the multidimensional poverty and income poverty measures. The aggregated poverty figures for the districts in this study indicate poverty ratio of around 76% in 2008 and a decline to around 68% in 2012. This further declined to 62% of households in these districts living below the poverty line by 2017. The general decline in the percentage of households living in

poverty at the national level for rural areas was evident in this study at the district level, although the magnitude of the decline differed slightly.

The general decline in headcount poverty observed is positive. However, the results also indicate that by 2017, 86% of these districts still had more than 50% of the households living below the LBPL and were unable to afford the basic required food and non-food items. From poverty literature in general (Khumalo 2013), and particularly over that period (Stats SA 2020; Gumede 2021), females were found to be more disadvantaged than males and continually recorded higher headcount, gap, and severity measures of poverty. A contributing factor to the high headcount poverty found in this study could also be due to the fact that the majority of these households were headed by females with low levels of schooling and relatively high dependence on social transfers as observed from their demographic characteristics.

4.3 Poverty gap

The poverty headcount reported in section 4.2 gave an indication of the proportion of households living below the poverty line. In this section, the poverty gap is determined using the FGT_1 (α equal 1). The World Bank defines poverty gap as 'the mean shortfall in income or consumption from the poverty line, counting the non-poor as having zero shortfall. It is expressed as a percentage of the poverty line and reflects the depth of poverty as well as its incidence' (World Bank 2018). Figure 1(a) and Figure 1(b), as well as Figure 2 (a) and Figure 2 (b) give the poverty gap ratios for the districts, grouped in their respective provinces.

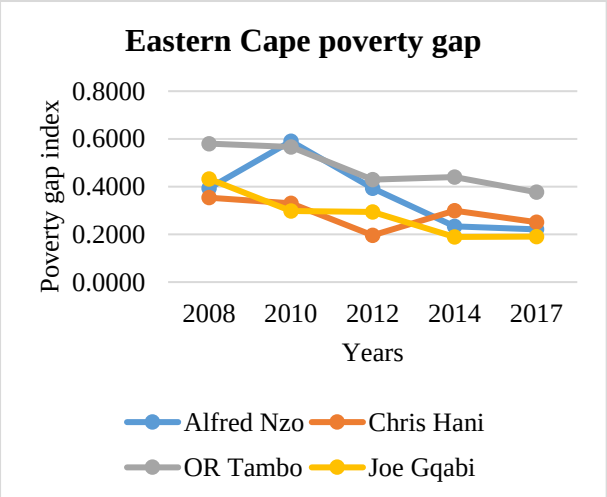

Figure 1 (a): Eastern Cape poverty gap ratios
Source: Mamabolo (2022) compiled from NIDS

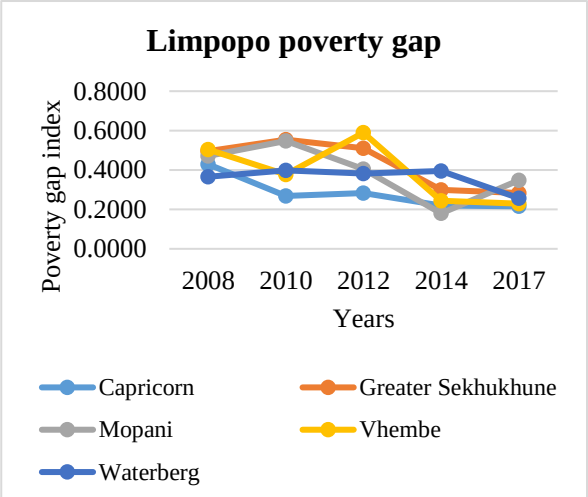

Figure 1 (b): Limpopo poverty gap ratios
Source: Mamabolo (2022) compiled from NIDS

Within the Eastern Cape, the poverty gap was highest in the OR Tambo district, ranging from 0.38 to 0.58 over the period 2008 to 2017. This indicated that relatively more households in the district were further away from the poverty line compared to households in other districts in the same province. Households in Alfred Nzo district followed this with a gap ratio of 0.59 and 0.39 in 2010 and 2012 respectively. Joe Gqabi and Chris Hani districts had the least poverty gap ratios throughout the period. The poverty gap in Joe Gqabi district ranged between 0.19 and 0.43, while in Chris Hani, the range was between 0.19 and 0.35 over the period 2008 to 2017. Figure 1 (a) shows these poverty gap ratios.

Figure 1(b) gives the poverty gap ratios for the districts in Limpopo province. The Figure shows that households in Capricorn district were relatively closer to the poverty line compared to households in other districts in the province. The district had relatively lower poverty gap ratios, ranging between 0.21 and 0.42. Although, the difference with the other districts in the province was relatively small and by 2017, the poverty gap among all the districts of the province ranged between 0.22 and 0.35. This was similar to the year 2008 when the poverty gap ratios of the all the districts in the province were similar, although relatively higher (between 0.4 and 0.5).

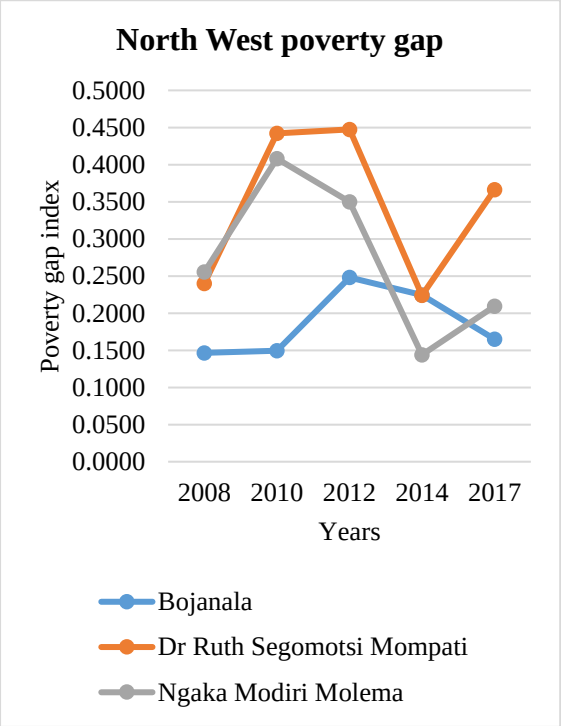

Figure 2 (a): North West poverty gap ratios
Source: Mamabolo (2022) compiled from NIDS

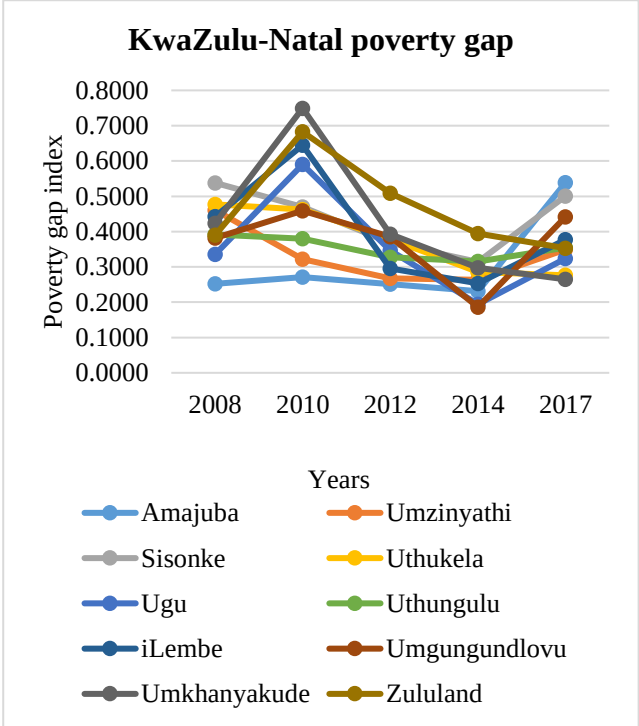

Figure 2 (b): KwaZulu-Natal poverty gap ratios
Source: Mamabolo (2022) compiled from NIDS

Within the North West province, Dr Ruth Segomotsi Mompati had the highest poverty gap ratio over the period, ranging between 0.22 and 0.45. Figure 2 (a) shows this. As was seen in

the previous section, this district had the highest poverty headcount in the province. Thus, not only did the district have a high percentage of households living below the poverty line, but also the average income of these households was furthest from the poverty line. Households in the Bojanala district had the lowest poverty gap ratio in the province, between 0.15 and 0.25.

Figure 2 (b) shows that the Amajuba district in KwaZulu-Natal had the lowest poverty gap ratio from 2008 at 0.25 to around 0.23 in 2014. However, in 2017, this district had the highest poverty gap of 0.54 in the province, indicating that the per capita income of households was falling further and further below the poverty line. From the previous section, this district also had the highest poverty headcount in 2017. What was also evident among the districts in KwaZulu-Natal was that, the poverty gap ratio among some of the districts converged, particularly between the years 2012 and 2017. This was around 0.3 in 2012 and 0.4 in 2017.

The poverty gap among districts in these provinces varied over the period, indicating unequal depth and dimensions of poverty. The World Bank also observed that poverty was deeper and more unequal in rural areas of South Africa around the same period (World Bank 2018). In addition, poverty depth has also been found to be relatively high among female-headed households compared to male-headed households (Stats SA 2020; Gumede 2021), a characteristic observed in these households accompanied by relatively low levels of education and dependence on social grants.

Overall, the lowest poverty gap between 2008 and 2017 was in Bojanala district with an average of 0.19, followed by Ngaka Modiri Molema with an average of 0.27 and Joe Gqabi with an average of 0.28. These districts had the highest per capita income compared to the other districts. To some extent, it would be expected that the poverty gap of the poor households in these districts would be relatively low or closer to the poverty line compared to other districts. The findings by Stats SA (2017a) for the period 2006 to 2015, indicate the North West province to have had the lowest poverty gap ratio out of these four provinces, similar to the observation made in this study among the districts in that province.

On the other hand, OR Tambo had the highest average poverty gap of 0.48 between 2008 and 2017, followed by Zululand with an average poverty gap of 0.47 and Sisonke district with an average poverty gap of 0.44. The difference in gap ratio among these districts was relatively small. The difference was one percent between OR Tambo and Zululand districts and four percent between OR Tambo and Sisonke districts. The relatively high poverty gap among these districts imply that relatively more resources would be required to push households above the

poverty line or at least to the poverty line for them to be able to acquire basic food and non-food items.

Using the Lower Bound Poverty Line, Stats SA reported a decline in the poverty gap at the national level from 22.2% in 2006 to 14.3% in 2011 and an increase to 16.6% in 2015 (Stats SA 2017a). The disaggregation by gender indicated females to have relatively higher poverty gap than males, at 17.5% and 15.7% respectively in 2015, while spatially, the poverty gap was higher in rural areas at 30.0% than in urban areas at 8.9% in 2015.

At the provincial level, the poverty gap between 2006 and 2015 was generally highest in the Limpopo province, ranging between 35.6% and 26.6%, followed by the Eastern Cape Province, with poverty gap ranging between 29.9% and 20.8%. KwaZulu-Natal province recorded poverty gap ranging between 30.6% and 19.8% and lastly, North West province with poverty gap ranging between 23.3% and 17.0% (Stats SA 2017a). These poverty gap ratios included other districts in these provinces that were not part of the districts analysed in study.

4.4 Poverty transitions of household in rural districts

This section presents the results of how households have been transitioning in and out of poverty between two consecutive waves, i.e. wave (t) and wave ($t+1$) as a result of changes in household income. The results show the percentage of households that transitioned from being poor to not poor, not poor to poor, as well as the percentage of those who remained in the same status between two consecutive waves. Table 6 and Table 7 show the poverty transition matrices for selected districts in each province. The districts presented in Table 6 and Table 7 are those in which more than 50% of the households experienced a transition into or out of poverty in consecutive waves in a particular province. The remaining districts in which more than 50% of the households (most of the households) did not experience a transition, and the observed transitions occurred in relatively few households are shown in Annexure A.

Table 6: Poverty transition matrix: OR Tambo, Joe Gqabi, Greater Sekhukhune and Vhembe districts*

OR Tambo				Joe Gqabi		Greater Sekhukhune		Vhembe	
2010									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2008	Poor	90.91	9.09	57.14	42.86	92.86	7.14	80.00	20.00
	Not poor	14.29	85.71	12.50	87.50%	25.00	75.00	66.67	33.33
2012									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2010	Poor	85.71	14.29	55.56	44.44	85.71	14.29	91.67	8.33
	Not poor	0.00	100.00	30.77	69.23	50.00	50.00	100.00	0.00
2014									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2012	Poor	77.78	22.22	66.67	33.33	71.43	28.57	80.00	20.00
	Not poor	54.55	45.45	23.08	76.92	25.00	75.00	0.00	100.00
2017									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2014	Poor	75.00	25.00	44.44	55.56	72.73	27.27	50.00	50.00
	Not poor	33.33	66.67	30.77	69.23	14.29	85.71	25.00	75.00

Source: Mamabolo (2022) compiled from NIDS survey 2008-2017
***Totals add to 100% for each district

In Alfred Nzo and Chris Hani districts of the Eastern Cape, the pattern observed was that more than 50% of the households did not transition or experience change in their status between two consecutive waves over the period i.e. between 2008 and 2010, between 2010 and 2012, between 2012 and 2014 as well as between 2014 and 2017. In other words, more than 50% of those who were poor remained poor and more than 50% of those who were not poor remained not poor between (t) and ($t+1$) waves. On the other hand, 55% of households that were not poor in 2012 in OR Tambo district, became poor by 2014 and in Joe Gqabi district 55% of the households that were poor in 2014 became non-poor by 2017. In OR Tambo, the percentage of households earning capital income, remittances and income from agricultural activities declined between 2012 and 2014, while the percentage of households earning wages and agricultural income increased between 2014 and 2017 in Joe Gqabi. These changes in income

contributed to the transitions observed in these districts in those periods. Table 6 presents these results.

The Capricorn and Mopani districts of Limpopo Province had similar results to those observed in the Alfred Nzo and Chris Hani districts of the Eastern Cape. More than 50% of the households in the Capricorn and Mopani districts did not experience a change in their poverty status between waves (*t*) and (*t+1*). The Greater Sekhukhune and Waterberg districts had similar results, although with slight differences. Fifty percent of households that were not poor in 2010 in Greater Sekhukhune became poor by 2012, and the remaining 50% of households that were not poor in 2010 kept their non-poor status in 2012. For households that became poor in that district, the percentage of those earning wages and capital income decreased between 2010 and 2012. The same was observed in the Waterberg district, that 50% of households that were not poor in 2008 became poor in 2010, while the other 50% of households that were not poor in 2008 remained non-poor in 2010.

In the Vhembe district, 66% of households that were not poor in 2008 became poor by 2010, and all the household that were initially not poor in 2010 became poor by 2012. This resulted from the decline in remittances received and income from agricultural activities from 2008 to 2010. While between 2010 and 2012, the decline was in wages earned, social grants and other forms of government income in the district. These were the only periods when more than 50% of the households in the Vhembe district experienced transition in their status. In all other waves, relatively few households transitioned between wave (*t*) and wave (*t+1*). Table 6 shows the transition matrices for the Greater Sekhukhune and Vhembe districts.

Table 7: Poverty transition matrix: Bojanala, Dr Ruth Segomotsi Mompati, Zululand and uMgungundlovu districts*

Bojanala				Dr Ruth Segomotsi Mompati		Zululand		uMgungundlovu	
2010									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2008	Poor	28.57	71.43	70.00	30.00	100.00	0.00	83.33	16.67
	Not poor	16.67	83.33	37.50	62.50	66.67	33.33	50.00	50.00
2012									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2010	Poor	50.00	50.00	90.00	10.00	94.12	5.88	66.67	33.33
	Not poor	26.67	73.33	37.50	62.50	0.00	100.00	75.00	25.00
2014									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2012	Poor	50.00	50.00	50.00	50.00	81.25	18.75	54.55	45.45
	Not poor	23.08	76.92	0.00	100.00	0.00	100.00	40.00	60.00
2017									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2014	Poor	66.67	33.33	66.67	33.33	76.92	23.08	100.00	0.00
	Not poor	15.38	84.62	58.33	41.67	40.00	60.00	50.00	50.00

Source: Mamabolo (2022) compiled from NIDS survey 2008-2017
***Totals add to 100% for each district

In Bojanala district of North West, more than 50% of the households that were not poor remained non-poor. This was the case throughout all the waves. Among the households that were poor in that district, 71% become non-poor between 2008 and 2010. This was because of the increase in social grants received and relatively more households earning investment income between 2008 and 2010. Table 7 gives these results. In Dr Ruth Segomotsi Mompati district, the main transition was between 2014 and 2017, when 58% of households that were not poor became poor. What was observed over that period in the district was that, income from wages and social grants declined, thus contributing to households moving below the poverty line. In all the other waves, more than 50% of the households in that district remained in the same status, see Table 7.

Similarly, in Ngaka Modiri Molema district, in more than 50% of the households, the poverty status did not change between waves, except between 2012 and 2014, when among the households that were poor, 57% transitioned out of poverty. There was an increase in remittances received by households between 2012 and 2014, which aided households out of poverty. The transition matrix for the district are in Annexure A.

Among the districts of KwaZulu-Natal province, uMkhanyakude and uThukela districts showed a similar pattern, with more than 50% of the households remaining in the same status between waves (*t*) and (*t+1*). In the districts of Amajuba, uMzinyathi, uThungulu and Zululand, more than 50% of the households remained in the same status between wave (*t*) and wave (*t+1*) except in one period, when over 50% of households that were not poor became poor. This was between 2014 and 2017 in Amajuba, between 2012 and 2014 in uMzinyathi and between 2008 and 2010 in both uThungulu and Zululand. The decline in wages, income from agricultural activities, remittances and social grants in these districts were the reason for households falling below the poverty line in those years.

What is evident among the remaining districts of KwaZulu-Natal (uMgungundlovu, Ugu, iLembe and Sisonke) is that, among the households that were not poor in a given wave (*t*), 50% transitioned into poverty and the remaining 50% remained non-poor. There was thus a 50/50 split among the non-poor households in these districts. Table 7 presents the transition matrices for Zululand and uMgungundlovu, while those of the other districts are in Annexure A.

The results reveal that more than 50% of the households in these districts maintained their status between waves. Relatively few households experienced transitions. Other studies in the literature indicate similar results. At the national level, Zizzamia, Schotte, and Leibbrandt (2019) found that the majority of households kept their status between waves. The study used the Food poverty Line (FPL) and the Upper Bound Poverty Line (UBPL). Similarly, Finn and Leibbrandt (2013), Finn and Leibbrandt (2016) as well as Kruger (2018) also obtained similar results, with most of the panel members not experiencing a change in their status between waves. Thus, these provided an indication that what was happening at the national level, as found in these studies, was, to some extent, mirrored in these districts. Finn, Leibbrandt, and Levinsohn (2014) observed the same among panel members who were poor, as 70 % did not transition out of poverty between wave one and wave two. However, among those with income levels between the lower bound and upper bound poverty lines in wave one, the majority transitioned, with 42% falling below the lower bound poverty line, 20% transitioning to income

levels higher than the upper bound poverty line and the remaining three percent having transitioned to income levels even higher than twice the upper bound poverty line.

When observing poverty transition between 2008 and 2017 only among the districts being investigated in this study, the results indicate that in 18 out of 22 districts, there was a decline in poverty by 2017. In other words, poverty decreased in 82% of the districts between 2008 and 2017. On the other hand, in about 13% of the districts, poverty increased between 2008 and 2017. Among the remaining 4% of the districts, the level of poverty remained unchanged between 2008 and 2017. This view, however, does not consider changes that took place in-between waves as reported above. This overall decline in poverty among these districts between 2008 and 2017 coincides with the general decline in poverty observed in the country around that period (World Bank 2018).

This section revealed that when tracing changes in poverty status between wave (*t*) and wave (*t+1*), more than 50% of the households in the districts did not change their status, whether poor or non-poor. This finding was positive for those households that were not poor and remained non-poor, indicating their resilience to poverty. However, for those households that were poor and remained poor, this was an indication that their welfare was not improving between waves, *ceteris paribus*. However, when considering 2008 and 2017 only, the results indicate that in about 82% of the districts poverty declined, with households transitioning out of poverty, while in 13% of the districts, poverty increased. This general decline coincided with the overall decline in poverty headcount observed over the period as reported in section 4.2.

5. Conclusions and recommendations

The purpose of this paper was to profile and investigate household poverty in rural districts of South Africa over time. Disaggregating the analysis to district level revealed differences that would not be evident at aggregated national level.

The study found Zululand, OR Tambo and Sisonke districts to have the highest average poverty headcount throughout the period. On average, 80% of households were not able to afford basic food and non-food items in these districts. Zululand also had the lowest per capita income among all the districts. Based on the results, the indication is that each province should target these districts in their poverty alleviation efforts, as the poverty situation was worse in the abovementioned districts. However, this in no way implies that other districts be ignored, as

poverty was equally high there, with headcount poverty of over 50%, except in the Bojanala district.

With the exception of the districts in North West province, the results indicate that, by 2017, the poverty gap ratio in each district in the other provinces converged. In other words, the majority of households in each district were relatively close to each other in terms of their distance from the poverty line. Further investigation of the poverty gap ratio, without the provincial cluster, revealed that the OR Tambo district had the highest poverty gap ratio, followed by Zululand and Sisonke districts. These same districts had the highest headcount poverty. This indicated that, not only were there relatively more poor households in these districts, compared to others, but the households in these districts were also furthest from the poverty line compared to other districts. This further highlighted that relatively more resources will be required in these districts to get households out of poverty.

In contrast, the Bojanala, Ngaka Modiri Molema and Joe Gqabi districts had the least headcount poverty, as well as the lowest poverty gap ratios. Thus, the general finding of the study was that, the districts that had the highest poverty rates also had the highest poverty gap ratios, while those that had the least poverty rates also had the least poverty gap ratios.

The poverty transition matrices between 2008 and 2017 indicated that in 82% of the districts poverty declined by 2017, while in 13% of the districts poverty increased. This general transition out of poverty between 2008 and 2017 coincided with the decline in headcount poverty observed. This, however, was not mirrored between waves. The results between wave (t) and wave ($t+1$) indicated that the majority of households in the districts remained in their initial status. This indicated resilience for those that were not poor and remained so in the following wave. However, the outcome was not favourable for those households that were poor and remained poor in the following wave. Thus, the welfare of this latter group did not improve between waves, *ceteris paribus*. This was despite the increase in average per capita income observed over the period, which was mainly from remittances and social grants. This therefore indicated that, the increased income was not sufficient to pull households out of poverty. Thus, the relatively high headcount poverty found among the districts in this study further supports findings in other studies that these traditional rural areas should continue to be a major focus of poverty alleviation efforts in the country.

In accordance with economic theory, the state has a role to play in providing economic stability to combat poverty and inequality. One way the state can do this is through the provision and

promotion of education. Education is positively associated with employment. Thus, improving and promoting the education level of households in these poor districts beyond matric can improve their employment opportunities. This in turn can lead to higher employment and wage income, thereby reducing dependence on social transfers as it was observed that relatively more households received social transfers compared to households earning wages. This would contribute to pushing households above the poverty line.

The study also recommends increasing the contribution of agriculture as a source of income among these traditional rural households. This can be done through education and skills training in farming, not for subsistence but as a farm business. Collaborations between the district municipalities and the provincial Departments of Agriculture Land Reform and Rural Development could play an important role to facilitate this.

The relevance of this study is that it provides better understanding of poverty dynamics in rural communities so that interventions can be better directed to where they are most required. This is particularly important because the country is committed to eradicating poverty as seen with the general decline in poverty over time. However, more effort is still required, particularly at the district level as only eight years remain to 2030 for the country to achieve SDG one of zero poverty. The strategies and efforts implemented for poverty alleviation, this article has argued, should consider differences that exist among the districts.

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ANNEXURE A

Poverty transition matrix: Alfred Nzo, Chris Hani, Mopani and Capricorn districts*

Alfred Nzo				Chris Hani		Mopani		Capricorn	
2010									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2008	Poor	80.00	20.00	65.00	35.00	85.00	15.00	62.50	37.50
	Not poor	14.29	85.71	33.33	66.67	40.00	60.00	11.11	88.89
2012									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2010	Poor	76.47	23.53	68.75	31.25	78.95	21.05	90.91	9.09
	Not poor	20.00	80.00	15.38	84.62	16.67	83.33	21.43	78.57
2014									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2012	Poor	66.67	33.33	69.23	30.77	56.25	43.75	84.62	15.38
	Not poor	16.67	83.33	18.75	81.25	22.22	77.78	0.00	100.00
2017									
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2014	Poor	58.33	41.67	58.33	41.67	90.91	9.09	81.82	18.18
	Not poor	26.67	73.33	35.29	64.71	35.71	64.29	14.29	85.71

Source: Mamabolo (2022) compiled from NIDS survey 2008-2017

***Totals add to 100% for each district

Poverty transition matrix: Waterberg, Ngaka Modiri Molema, Amajuba and uMzinyathi districts*

		Waterberg		Ngaka Modiri Molema		Amajuba		uMzinyathi	
		2010							
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2008	Poor	62.50	37.50	92.31	7.69	88.89	11.11	71.43	28.57
	Not poor	50.00	50.00	42.11	57.89	55.56	44.44	40.00	60.00
		2012							
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2010	Poor	84.62	15.38	70.00	30.00	69.23	30.77	57.89	42.11
	Not poor	44.44	55.56	0.00	100.00	40.00	60.00	25.00	75.00
		2014							
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2012	Poor	60.00	40.00	42.86	57.14	72.73	27.27	100.00	0.00
	Not poor	42.86	57.14	16.67	83.33	42.86	57.14	100.00	0.00
		2017							
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2014	Poor	58.33	41.67	77.78	22.22	90.91	9.09	51.61	48.39
	Not poor	30.00	70.00	21.74	78.26	71.43	28.57	0.00	0.00

Source: Mamabolo (2022) compiled from NIDS survey 2008-2017

***Totals add to 100% for each district

Poverty transition matrix: Sisonke, uThukela, Ugu and Uthungulu districts*

		Sisonke		uThukela		Ugu		Uthungulu	
		2010							
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2008	Poor	80.00	20.00	80.00	20.00	78.26	21.74	78.23	21.74
	Not poor	57.14	42.86	22.22	77.78	66.67	33.33	50.00	50.00
		2012							
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2010	Poor	70.00	30.00	81.82	18.18	70.83	29.17	73.91	26.09
	Not poor	42.86	57.14	16.67	83.33	50.00	50.00	10.00	90.00
		2014							
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2012	Poor	70.59	29.41	55.00	45.00	57.14	42.86	72.22	27.78
	Not poor	40.00	60.00	21.43	78.57	45.45	54.55	40.00	60.00
		2017							
		Poor	Not poor	Poor	Not poor	Poor	Not poor	Poor	Not poor
2014	Poor	75.00	25.00	57.14	42.86	64.71	35.29	78.95	21.05
	Not poor	63.64	36.36	20.00	80.00	53.33	46.67	35.71	64.29

Source: Mamabolo (2022) compiled from NIDS survey 2008-2017
***Totals add to 100% for each district

Poverty transition matrix: iLembe and Umkhanyakude districts*

		iLembe		Umkhanyakude	
		2010			
		Poor	Not poor	Poor	Not poor
2008	Poor	90.00	10.00	100.00	0.00
	Not poor	25.00	75.00	0.00	100.00
		2012			
		Poor	Not poor	Poor	Not poor
2010	Poor	50.00	50.00	63.64	36.36
	Not poor	25.00	75.00	0.00	100.00
		2014			
		Poor	Not poor	Poor	Not poor
2012	Poor	66.67	33.33	85.71	14.29
	Not poor	25.00	75.00	0.00	100.00
		2017			
		Poor	Not poor	Poor	Not poor
2014	Poor	83.33	16.67	66.67	33.33
	Not poor	50.00	50.00	42.86	57.14

Source: Mamabolo (2022) compiled from NIDS survey 2008-2017
***Totals add to 100% for each district