

# **ANALYSIS OF POVERTY IN THE NORTHERN PROVINCE OF SOUTH AFRICA: IMPLICATIONS FOR EMPOWERMENT POLICY<sup>1</sup>**

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## ABSTRACT

The Northern province is the poorest region in South Africa. The paper develops a poverty profile for the province by location, administrative region and racial grouping. Poverty is quite high in the rural areas though urban poverty is also significant. Bushbuckridge, Southern, Central and Lowveld administrative regions are the poorest as are non-white households. Our multi-variate probit analysis shows that large households, those headed by old people and women, with a high dependency ratio are likely to be poor. The importance of household remittance receipts is also demonstrated.

## 1.0 INTRODUCTION

With a 1996 population estimate of 37.9 million and a Gross National Product per capita of \$3310, South Africa is categorized as an upper-middle-income country (World Bank 2000), with medium human development index (UNDP, 2000). In spite of this, majority of South African households are either living in outright poverty or are vulnerable to being poor. The World Bank (1993) ranked South Africa as the 85th poorest nation in the world, behind Lithuania, Hungary, Venezuela and Brazil, an improvement on the 1990 ranking in which South Africa was placed 90<sup>th</sup>. The distribution of income and wealth in the country is among the most unequal in the world. Many households still have unsatisfactory access to education, health care, energy and clean water. Since the dawn of the new democratic dispensation in 1994, the government of South Africa has attached high priority to the issues of poverty alleviation and a more equitable distribution of income and wealth. In particular the government is committed to a programme of empowerment of the previously disadvantaged groups and regions. The Northern Province features quite prominently in this regard as it is one the least developed provinces in the country. Under the RDP programme the government has been pursuing an active income generation policy focused on women, children and youth development with a view to initiating sustainable income generation projects in this province and others. As a contribution to this process, the study seeks to examine the incidence and socio-economic dimensions of poverty in the northern province with a view to informing the effectiveness of government's empowerment policy. The paper comprises six sections. Section 2 provides background information on poverty in South Africa. The theoretical and empirical literature on the determinants of poverty is reviewed in Section 3. Section 4 sets out the data sources and the salient features of the model adopted. The results are presented in Section 5. The final section discusses policy implications.

The World Bank (2001) categorizes South Africa as one of the most unequal countries in the world as highlighted by the Gini coefficients and income distribution figures for a selected number of countries.

Table 1: Gini Coefficients and income inequality in selected countries

Country	Gini Coefficient	Percentage share of income or consumption	
		Lowest 10%	Highest 10%
Slovak Republic	0.195	5.1	18.2
Czech Republic	0.254	4.3	22.4
Hungary	0.308	3.9	24.8
Poland	0.329	3.0	26.3
Estonia	0.354	2.2	26.2
Thailand	0.414	2.8	32.4
Peru	0.462	1.6	35.4
Malaysia	0.485	1.8	37.9
Russian Federation	0.487	1.7	38.7
Venezuela	0.488	1.3	37.0
Mexico	0.537	1.4	42.8
Chile	0.565	1.4	46.1
<b>South Africa</b>	<b>0.593</b>	<b>1.1</b>	<b>45.9</b>
Brazil	0.600	0.9	47.6

Source: World Development Report, World Bank (2001)

The lowest 10 percent of the population account for only 1.1 percent of the country's income whereas the top 10 percent of the population account for about 46 percent of total income. This highlights profound inequality of income distribution in the country, a situation that is comparable to that of Brazil, Chile and Mexico.

Poverty rating by province is presented in table 2. The Northern province is the poorest followed by Eastern Cape. Gauteng and Western Cape are much richer than the rest of the country. This is manifested in their low poverty ratings.

Table 2: Poverty rating of South Africa by province

Province	No of Persons/ Household	No of Households	No of Persons(Shacks)	No of house- holds (Shacks)	Poverty Rating (%)
Western Cape	3.9	152,100	4.1	91,000	23
Northern Cape	3.5	26,800	—	---	57
Eastern Cape	5.3	1,018,300	4.0	68,300	78
Kwazulu Natal	6.2	1,049,000	5.2	82,000	66
Free State	4.0	561,800	4.4	152,000	53
Mpumalanga	4.7	654,700	3.9	64,600	52
Northern Province	5.4	834,200	4.0	34,700	77
North West	3.9	735,100	4.3	69,200	57
Gauteng	3.8	1,060,900	3.3	344,100	19
All	4.8	6,092,700	3.9	902,900	---

Source: Derived from the CSS 1995

The Northern Province constitutes about 13 percent of South Africa's population. Table 3 compares a number of socio-economic indicators of the province with others in the country. It has the highest population growth rate (3.9 percent per annum) in the country. About 90 percent of the population lives in the rural areas, who are mainly black (95%), female (54%) and young (47.5% of the population is less than 15 years old). Economic and social development in the province is poorer than elsewhere. The province contributes only 4 percent of the country's gross domestic product. Informal and personal services are the main employment outlets. The per capita gross geographic product of R3648 was the lowest in the country in 1995. The province's infant mortality rate of 57 per thousand live births is higher than the national average of 42; and there are between 1.2 and 1.6 medical staff per 1000 population (1994) in the province. Other indicators such as those related to life expectancy, unemployment, literacy, health, water and energy consumption fall far short of overall national average, even for black households. As such, the human Development Index (HDI) for the Northern Province is the lowest in the country at 0.47, far short of the national average of 0.68. The high degree of inadequacies and inequalities that characterize the Northern Province provides the basis for concerted efforts to empower the population either through public or private action. The effectiveness of such policies, however, depends on identifying and thoroughly analyzing the determinants of poverty, which is the main objective of this study.

Table 3: South Africa's socio-economic indicators

Indicator	Northern Province	Western Cape	Northern Cape	Eastern Cape	Free State	Kwazulu Nstal	Mpuma langa	North West	Gauteng	South Africa
Area (km <sup>2</sup> )	116824	129386	363389	170616	129437	91481	82333	118710	21024	1223201
Population 1995 (000)	5560	3736	741	6559	2773	8761	3025	3326	7063	41544
Population Growth rate 1985-1995	3.97	1.97	0.89	2.96	1.72	2.91	2.67	3.2	2.18	2.7
Population Female (%)	54.2	49.8	49.4	54.1	50.2	52.1	49.8	49.8	46.5	51.0
% Population Less than 15	47.5	27.2	33.1	41.7	35.3	38.8	39.3	36.0	24.1	36.4
% Population Urban	11.2	87.0	71.4	34.9	59.2	38.5	31.1	40.1	94.4	49.7
% Population African	95.4	18.3	29.6	87.3	84.0	82.7	89.5	90.6	63.0	76.2
Life expectancy (years)	62.7	64.8	64.0	59.6	63.6	62.6	63.5	64.1	65.6	63.4
Infant Mortality per 1000	57	26.8	31.5	58.2	45.1	44.7	41.2	35.2	43.5	41.8
Unemployment rate	41	18.6	27.2	41.4	26.1	33.1	33.4	32.8	20.9	29.3
Average Monthly Household Income (Rands)	971	3234	1225	1089	2161	1705	2057	1301	3442	2089
Per capita GGP 1995	3648	18853	12214	6339	11519	9125	13700	7988	27074	12675
Human Development Index (HDI)	0.47	0.83	0.69	0.51	0.66	0.6	0.69	0.54	0.81	0.68

*Source: October Household Survey (CSS) 1995; DBSA (1994)*

South African governments were previously concerned with poverty only in the white communities at the expense of the black population who resided in the heavily congested former homelands. Since 1994, changing the focus of past policies has hence attracted the attention of the central as well as regional governments. Consequently, the central government has sought to implement a number of socio-economic development programmes, including the RDP, etc. To this end, government strategies consisted of short-term interventions for poverty alleviation and medium to long-term policies for poverty reduction (Davies, 1996: 102).

### 3 LITERATURE REVIEW

#### *(a) Empirical Literature on Poverty Analysis*

Earlier concerns about poverty in South Africa are rooted in the First and Second Carnegie Inquiries into poverty in the country (Carnegie Commission, 1932; 1984; Wilson and Ramphela, 1989). Whereas the first inquiry was initiated during the Great Depression, when “large numbers of whites, uprooted from the land during the previous generation, by war, drought, pestilence, population growth and the capitalization of agriculture, poured into the cities to live, ill-equipped for modern industrial society, in dire poverty” (Carnegie Commission, 1932; Wilson and Ramphela 1989). The first inquiry’s mandate was limited to cover only the white population. Not surprisingly, its recommendations sought to promote strategies for improving the position of the poor whites, very often at the expense of poor blacks. The 1984 Second Carnegie Inquiry, for good measure, focused on black poverty and was also designed as an open ended on-going process as opposed to a once-off initiative.

Most studies on poverty in the literature have been fairly descriptive. They follow the poverty line approach based on identifying the level of income and expenditure below which a person/ household is considered to be poor and in the process determine the extent of poverty in a country. Simkins (1984) uses McGrath’s 1975 data sets to analyze poverty in South Africa. He finds that 54 percent of all households, or 68 percent of black households, 52 percent of coloured, 30 percent of Asians and 3 percent of white households lived below the poverty line. Using the 1991 Census survey, Whiteford and McGrath (1994) show that 49 percent of households or 67 percent of black, 38 percent of coloured, 18 percent of Asians and 7 percent of white households lived below the poverty line. Results from the 1993 Living Standards and Development survey also show that about 54 percent of blacks, 25 percent of coloured, 8 percent of Asians and 0.5 percent of whites are below the poverty line.

Others studies compute poverty indices, usually of the P $\forall$  class, which form the basis for ranking individuals or households from the poorest to the richest. Using the indices, some studies identify the level of poverty among groups of households according to region of residence, principal economic activity or occupation and also assess the depth of poverty among households. Differences in household size and composition may be adjusted for using equivalent scales as suggested by Deaton’s 1994 generalized scale for developing countries.

May, Carter and Posel (1995) define a poverty line for South Africa by using an average adjusted household expenditure measure, which is compared with a minimum income level or poverty line for poor households. Household Subsistence Level (HSL) measure for an urban family of 2 adults and 3 children is R825.1 or R267.21 adult equivalents per month. A rural household of 2 adults and 4 children subsists on R723.05 or R236.95 adult equivalents per month. They estimate that 36.6 percent of all households in South Africa and 49 percent of the population are poor. As the headcount ratio for individuals living in poverty is larger than for households, they suggest that larger households tend to be poorer (May, Carter and Posel, 1995:8). There is a slightly higher incidence of poverty among women than men. This they attribute to the preponderance of women among the elderly who suffer from high poverty rates. Poverty is also more concentrated among blacks.

Another approach is to identify the poorest group in the country and measure the frequency of their given characteristics relative to the whole population. Wilkins (1998 ed.) defines the “poor” as the poorest 40% of households in South Africa (equivalent to 50% of the population). They spend below R301/month per adult equivalent. The ultra poor are the poorest 20% of households spending below R178/month per equivalent. Poverty is unevenly distributed in South African provinces and that about two-thirds of the poor live in Eastern Cape (24%), Kwazulu-Natal (21%) and the Northern Province (18%).

Other studies further estimate the depth of households’ poverty and hence describe poverty pattern in all its dimensions, focusing on the socio-economic determinants of living standards and consequently of poverty. The Foster-Greer and Thorbeck (FGT) procedure is not uncommon in such applications.

Choonoo (1995) undertakes a comparative analysis of inequality and poverty among urban non-white families and their labour market experiences during the apartheid years 1975-1985 in South Africa. Education is the most important determinant of inequality and poverty in the country. Black workers with some high school education are better off than those without even though education in itself does not provide immunity from poverty.

Carter and May (1999) analyze the class structure of poverty and explore the range of claiming systems and livelihood tactics available in the rural areas, offering explanations of poverty by disaggregating the rural population into discrete livelihood strategy classes. Their non-parametric regression results suggest that poverty is a matter of not only having few assets, but also of constraints which limit the effectiveness with which those assets are used. Poor households are those with alarmingly limited access to endowments, highly constrained options for the use of these endowments, and in most cases, poor returns being generated for those activities in which they are able to engage.

Leibbrandt and Woolard (1999) compare poverty incidence across the nine provinces of the country. They use three poverty measures in all. Their poverty lines range from R75 to R600 per month per adult equivalent. At a low poverty line, the incidence of poverty in Kwazulu Natal is lower than in Mpumalanga, the North West and the Free State. However, the incidence of poverty in the Western Cape and Gauteng is considerably lower than in all other provinces.

They also use the 1995 Income and Expenditure Survey (IES) to examine poverty dominance across the country. They find that incidence of poverty is highest in the Eastern Cape and Lowest in the Gauteng and Western Cape provinces. They are unable to determine a clear ranking for the Northern Province using the 1995 IES data set but they assert that poverty is higher in the Northern province, the Free State and in the Northwest than in Mpumalanga.

Some other studies in the literature have distinguished poverty by location into urban and rural poverty. More studies have examined rural poverty, though it is becoming increasingly clear that greater attention should be given to urban poverty as well. Incidence of poverty in the rural areas has been linked to rapid population growth, unsustainable agriculture and hence a degradation of land, water and forest resources and a breakdown of indigenous

institutions (Pichon and Uquillas, 1997). Agricultural intensification that increases the productivity of scarce resources is crucial to rural poverty alleviation and improved natural resource management.

Moser's (1998) study suggests that the urban poor are vulnerable to social fragmentation. Non-poor households in the Commonwealth study area in the Philippine successfully rely on outside remittances to reduce poverty, but with a long term cost of permanently split households, with more being vulnerable to weakening family relationships.

Coulombe and McKay (1996) find that the experience of the economic head of households in Mauritania has a significant positive influence on living standards, though at a decreasing rate. A similar approach has been used by Glewwe (1990) in investigating the determinants of household welfare in Cote D'Ivoire. Shaffer (1998) examines evidence from the Republic of Guinea to link gender, consumption poverty and deprivation. The study reveals that women are not more likely than men to be consumption poor or to suffer greater consumption poverty. Male-headed households face greater consumption poverty than female-headed households in the Republic of Guinea. Participatory poverty assessment data from the village of Kamatiguia reveal that women are worse off than men when deprivation includes, inter alia, excessive workload and reduced decision-making authority. Gyekye and Tlhalefang's (1997) poverty profile for Botswana suggests that 57% of rural and 51% of urban households were living below the poverty line and that the Districts of Ghanzi and Kgalagadi had the highest rates of poverty in the country.

#### 4 MEASURING POVERTY IN THE NORTHERN PROVINCE

##### *(a) Conceptual Issues in Measuring Poverty in the Northern Province*

Detailed description of the conceptual issues in measuring poverty in the Northern province is given in Gyekye and Akinboade (2001). The analysis of poverty and the construction of poverty profile for the province begin with the establishment of a poverty line. Using consumption expenditure as a welfare measure, we establish a poverty line, which cuts off the poorest 40 percent of the population in the provincial or administrative regional expenditure distribution in 1995. In addition, we choose a "hard core" poverty line, which cuts off a smaller percent (20%) of the population in the income/expenditure distribution. These are the poverty lines with which we evaluate differences in poverty across the administrative regions during 1995.

Following Deaton and Muellbauer (1980), we use household's expenditure corrected for household size and its demographic make-up as follows:

$$E = (A + \alpha K)^\theta \quad (1)$$

Where E = number of adult equivalents

A = number of adults

K = number of children

$\alpha$  = Fractional representation of children in adult equivalence i.e., child cost ratio

$\theta$  = Scale parameter

Many poverty studies focused on South Africa have adopted the values of  $\alpha = 0.5$  and  $\theta = 0.9$  first used by May *et al* (1995). We tested the sensitivity of our poverty profile to changes in the values of  $\alpha$  (from  $\alpha = 0.3$  to  $\alpha = 0.8$ ) and  $\theta$  (from  $\theta = 0.5$  to  $\theta = 1$ ). We found our poverty lines to be rather robust at  $\alpha = 0.5$  and  $\theta = 1$  and therefore adopted the adult equivalence conversion formula of  $E=(A + 0.5K)$  for our analysis.

We aggregate poor households into a provincial poverty statistic along the lines of the axiomatic approaches suggested by Sen (1976); Donaldson and Weymark (1986); Forster, Greer and Thorbecke (FGT) (1984). However, for ease of operationalisation and interpretation, the FGT measure has been used in capturing the number of the poor and the depth and severity of poverty. A discussion of the FGT procedure is presented in Gyekye and Akinboade (2001).

Then the FGT measure is

$$P\alpha = \frac{1}{n} \sum_{n=1}^q \{(Z-Y_i)/Z\}^\alpha ; \alpha \geq 0 \quad (2)$$

Where

$Y_i$  = income or expenditure of the  $i$ th individual

$Z$  = Poverty line

$n$  = Total population

$q$  = Number of individuals below the poverty line (i.e. the poor)

$\alpha$  is a parameter that measures the depth of poverty

As  $\alpha$  varies,  $P\alpha$  also changes to give an indication of the depth of poverty.

When  $\alpha = 0$ , then

$$P_0 = q/n = H \quad (3)$$

However, with  $\alpha = 1$ ,

$$P_1 = HI = H\{(Z-\bar{Y})/Z\} = q/n\{(Z-\bar{Y})/Z\} \quad (4)$$

Where  $\bar{Y}$  = mean income (consumption) of the poor

and  $I = (Z - \bar{Y})/Z$

is the average shortfall of income from the poverty line or the “income gap ratio”.

$P_1$  takes into account the number of individuals who are poor and the depth of their poverty.

From the expression in equation (4)

$$P_1 = q/n\{(Z - \bar{Y})/Z\}$$

We obtain

$$nZP_1 = q(Z - \bar{Y}) \quad (5)$$

$nZP_1$  provides an estimate of the total amount of resources needed to eliminate poverty. It therefore gives a lower bound to the budgetary outlays needed to eliminate poverty.

$P_2$  can be thought of as a sum: an amount due to the poverty gap, and an amount due to inequality amongst the poor (Ravallion; 1992)

$$P_2 = PG^2 / H + (H-PG)^2 / H.CV^2 p \quad (6)$$

$PG^2 / H$  = contribution of the poverty gap  
 $(H-PG)^2 / H.CV^2 p$  = contribution of inequality amongst the poor.  
 $CV^2 p$  = the squared coefficient of variation of income among the poor.

$\alpha = 2$ , provides a measure of the severity of poverty.

The  $P\alpha$  measure is group decomposable. If the population is divided into  $m$  mutually exclusive and exhaustive groups and  $P\alpha$  calculated for each group, then the  $P\alpha$  measure for the entire population is obtained as

$$\sum_{j=1}^m X_j P\alpha_j \quad (7)$$

Where,

$$X_j = \text{Proportion of population in group } j$$

$$\sum X_j = 1$$

$$P\alpha_j = \text{poverty measure for group } j$$

The contribution of each group to overall poverty ( $C_j$ ) is determined as:

$$C_j = \frac{X_j P\alpha_j}{P\alpha} \quad (8)$$

This decomposition of provincial poverty into rural/urban, regional or racial groups has been used in developing a poverty profile for the northern province for policy purposes.

*(b) Data /Information Sources*

Data on the Northern province extracted from the 1995 South Africa *Income and Expenditure Survey (IES)*, supplemented with relevant data from the *October Household Surveys* of the same year, have been used in the study. These cover a sample of 2668 households living in randomly selected dwellings in the province. The general procedure for sampling and survey techniques are discussed in (CSS; 1997).

Households are stratified by location into urban and non-urban (rural) areas and by race as well as administrative regions. The administrative regions consist of Northern, Lowveld, Bushbuckridge, Central, Southern, Western and Bushveld regions.

Our initial poverty line is R259.11 adult equivalents per month, cutting off the poorest 40% of the population in the provincial expenditure distribution in 1995. The second poverty line, which, cuts off 20% of the population in the provincial expenditure distribution is R142.45 adult equivalents per month. POVCAL software, useful in analyzing grouped data, developed by Chen, Datt and Ravallion of the World Bank in 1991 (updated in 1995) is used in estimating among others, headcount index of poverty ( $P_0$ ), poverty gap (depth) index ( $P_1$ ), and the severity of poverty index ( $P_2$ ). We also assess the sensitivity of the results to measurement assumptions such as the choice of poverty line.

## 5 RESULTS

The results obtained using POVCAL are presented and analyzed in the next section. Later, we discuss results from the multi-variate probit regression.

### (a) Poverty Profile by Location

Using the  $P_0$  index, about 41 percent of the population of Northern Province lived in households whose monthly adult equivalent expenditure was less than R259.11. 47% of the non-urban and 24% of the urban population live below this poverty line. Non-urban households make up about 73% of the provincial population; they contribute about 84% of the provincial poverty ( $P_0$ ). Moreover, the combination of high poverty rate and deep poverty among the non-urban poor means that almost 90% of the total poverty gap is accounted for by poverty in non-urban households, although they make about 73% of the population. At the lower poverty line of R142.45, about 22 percent of the province's population are hardcore poor.

Table 4 *Distribution of poor households by locational classification*  
Poverty Line = R259.11 per adult equivalent expenditure per month

Location	Population Share (%)	$P_0$	$P_1$	$P_2$	Contribution to provincial poverty $P_0$ (%)	Contribution to provincial poverty $P_1$ (%)	Estimated Gini Index
Non-urban	72.9	0.4679	0.2207	0.0948	84.2	89.4	0.67
Urban	27.1	0.2356	0.0697	0.0287	15.8	10.6	0.61
Northern Province	100.0	0.4052	0.18	0.0989	100.0	100.0	0.65

Source: own computation from the CSS' 1995 Income and Expenditure Survey Data

With  $P_1$  value of 0.1800, it will require R46.65 (0.1800x R259.11) per person per month to close the "poverty gap" in the province. Given a population of about 5 million, in 1995, the total minimum requirement to eliminate poverty at the poverty line would amount to about R233 million per month or R2.8 billion per annum. This minimum resource level estimated indicates that redistribution on its own requires resources that are unlikely to be available in

the provincial economy in the short term. This situation amplifies the importance of provincial economic growth to the poverty alleviation strategy.  $P_2$  values show that poverty is again more severe in the non-urban areas than in urban locations. Hardcore poverty is largely a non-urban phenomenon.

*(b) Poverty Profile by administrative regions*

The  $P_0$  values at the higher poverty line (R259.11) indicate that the incidence of poverty is highest in Bushbuckridge where the monthly expenditure of 54% of households is less than R259.11 in 1995. The region is closely followed by Southern and Central regions with 52% and 49% of their respective households, living below the poverty line. Incidence of poverty is lowest in the Western region followed by Bushveld and the Northern regions with 21%, 26% and 27% of their respective households living below the poverty line. The  $P_1$  and  $P_2$  indices also confirm this trend. The deepest and severest poverty is in Bushbuckridge (with  $P_1=0.28$  and  $P_2=0.17$ ), while depth and severity of poverty is the least in the Western region ( $P_1=0.06$ ,  $P_2=0.02$ ).

It is in the poorest regions (Bushbuckridge, Southern, Central and Lowveld), that contribution to poverty share exceeds population share. They also contain the economically marginal previously self-governing territories of Lebowa and Lebowakgomo. In the relatively “well off” regions of Western, Bushveld and Northern, poverty shares are lower than population shares. This observation demonstrates the importance of careful targeting of the provincial poverty alleviation strategies.

The regional Gini indices show that income distribution is more uneven in the regions with large urban centers than those without such centers. For example Central region with large urban Petersburg has the largest Gini index of 0.71, followed by Lowveld (with Tzaneen and Pharaborwa as urban centers) with a Gini index of 0.66 and Western (containing urban Potgietersrus) also with a Gini index of 0.66. These three regions have Gini indices that are larger than the provincial index of 0.65.

Table 5 Distribution of poor households by regional classification

Poverty Line = R259.11 per adult equivalent expenditure per month

Region	Population Share (%)	$P_0$	$P_1$	$P_2$	Contribution to provincial poverty $P_0$ (%)	Contribution to provincial poverty $P_1$ (%)	Estimated Gini Index
Northern	22.7	0.2679	0.1181	0.0669	15.0	14.9	0.57
Lowveld	18.2	0.4191	0.1920	0.1084	18.8	19.4	0.66
Bushbuckr	11.0	0.5434	0.2769	0.1701	14.8	16.9	0.64
Central	20.6	0.4879	0.2148	0.1167	24.8	24.4	0.71
Southern	14.6	0.5210	0.2392	0.1367	18.8	19.4	0.52
Western	10.4	0.2083	0.0609	0.0231	5.4	3.5	0.66
Bushveld	2.6	0.2556	0.1150	0.0660	1.6	1.6	0.61
Northern Province	100.0	0.4052	0.18	0.0989	100.0	100.0	0.65

Source: own computation from the CSS' 1995 Income and Expenditure Survey Data

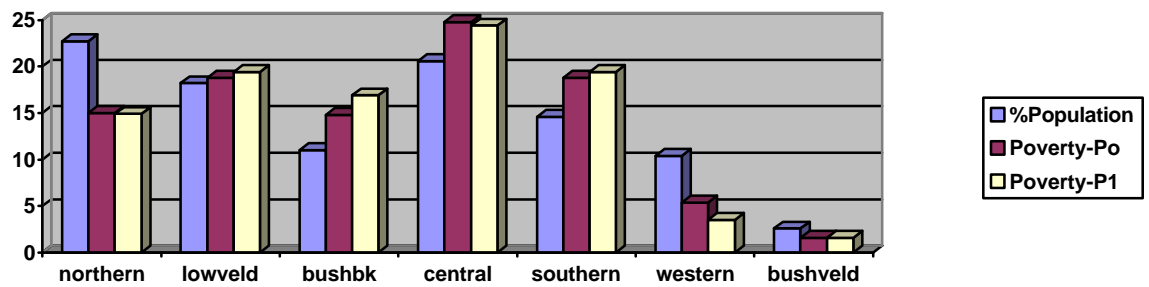


Figure 1: Population and contribution to poverty by administrative regions

© Poverty Profile by Race

We combine Blacks, Coloured and Asians into a non-white category for reason of small sample size of Asians and Coloured. Irrespective of the choice of poverty line, poverty is concentrated among non-whites, particularly blacks.

(d) A discussion of empirical results of the determinants of poverty in the northern province: all, rural/urban and non-white households.

From the 1995 Income and Expenditure Survey (IES), there are two thousand six hundred and sixty eight (2668) households in the province. Based on our ranking, this consisted of five hundred and thirty seven (537) households, which we classify as being hardcore poor, of which about 80 percent are based in rural areas. The remainder is urban based. Of the 537 households, all but one are non-white. When the definition of poverty is widened to cover the bottom 40 percent of households, there are one thousand and sixty three poor households in the province, eight hundred and sixty (81%) of which are based in the rural areas. All but four of these households are non-white.

The multi-variate probit regression seeks to determine the probability that a particular household, with a given set of attributes, will be poor or non-poor. Such attributes include residential location, size, gender and age of household head, primary income source of household head, dependency ratio, remittance receipts, and race. It is clear from Table 6 that poverty incidence is probable in non-urban female-headed households. The result is significant irrespective of the way we have defined poverty. In the urban areas household head's gender is insignificant in explaining poverty.

(e) Empirical Results

Table 6: Probit estimates of poverty determinants: rural/urban, non-white households in the northern province

Independent

Variables Dependent variable: Poverty Status

	Hard core poor households (pdl = 142.45)			Poor households (pdl = 259.11)		
	Rural	Urban	Nonwhite HH	Rural	Urban	Nonwhite
Intercept	-3.49 (-6.21)***	-4.48 (-7.47)***	-5.48 (-15.37)***	-4.70 (-15.2)***	-3.47 (-4.23)***	-5.02 (-16.9)***
Female headed households	0.68 (3.68)***	0.05 (0.22)	0.66 (6.11)***	0.63 (6.68)***	0.05 (0.34)	0.68 (7.34)***
Age of household head	0.03 (4.44)***	0.01 (1.22)	0.03 (6.35)***	0.04 (9.0)***	0.01 (1.88)*	0.04 (9.76)***
HH head income source	0.29 (2.13)*	0.32 (1.94)*	0.33 (3.73)***	0.28 (3.5)***	0.20 (1.62)*	0.35 (4.39)***
Household remittance	-0.0001 (-2.49)**	-0.0001 (-3.2)***	-0.0001 (-7.32)***	-0.0001 (-7.1)***	-0.00001 (-4.1)***	-0.00001 (-9.19)***
Household size	0.80 (2.09)*	0.55 (1.97)*	0.31 (11.37)***	0.11 (0.8)	0.08 (2.24)*	0.29 (12.06)***
Rural residence	----	----	0.13 (1.03)	-----	----	0.38 (3.58)**
Black Households	-0.43 (-1.32)	-0.37 (-1.59)	-----	0.13 (1.08)	-----	-----
Asian Households	-0.90 (-1.80)*	-0.63 (-1.14)	-----	-0.41 (-1.1)	-----	-----
Coloured Households	-2.97 (-0.01)	-25.9 (-0.00)	-----	-26.29 (-0.00)	-----	-----
Non-white households	-----	-----	-----	-----	-0.05 (-0.07)	-----
White Households	-6.50 (-0.04)	-1.03 (-2.07)**	-----	-0.74 (-2.89)**	-0.99 (-1.75)*	-----
Dependency ratio	1.09 (2.81)**	0.46 (2.18)**	0.27 (3.67)***	0.21 (1.81)*	0.16 (1.63)*	0.34 (5.29)***
Sample size	2668	2668	2668	2668	2668	2668
Observation (with Depvar=1)	427	110	536	860	207	1063
Adjusted R <sup>2</sup>	0.52	0.05	0.14	0.17	0.05	0.17

t-statistics are in parentheses. \*\*\* \*\* \* Indicate 1 percent, 5 percent and 10 percent levels of significance respectively

Age of household head is significant in explaining poverty, especially in the rural areas and among non-white households. As age of the household head increases, this contributes to household poverty, irrespective of the severity of poverty of the household, the location of the poor households and among non-white households. This finding is consistent with a priori expectations. However, like the other variable, the gender of the head of household, the age of the household head is insignificant in explaining poverty in the urban areas in the northern province among the very poor households though it is significant in explaining urban poverty among poor households. As such, one can infer that as poverty becomes more severe in the urban areas, age of the head of households becomes less significant in explaining it.

The source of the income of the head of households is also significant. Poverty incidence is found among households where the household head is self-employed. Self-employment at this level is more likely to be low paying, in the informal segments of the economy where investment capital and returns are low, perhaps further perpetuating poverty. Poverty is also more likely to be associated with large households with a high dependency ratio.

Receipt of remittance transfers is found to be small but very negatively correlated with poverty. This finding is significant irrespective of the way poverty is defined. Remittance transfers are therefore very important for households seeking to emerge from poverty. This finding demonstrates the importance of maintaining close link with successful family members, living elsewhere, as a way of reducing poverty incidence.

Poverty incidence in non-urban areas is higher than in the urban areas. Our a priori expectation was that urban residence would place urban dwellers in strategic positions to take advantage of income generation opportunities available in such centres. We find that residence in rural areas is significant in explaining overall poverty incidence especially among poor non-white households.

Poverty incidence is much more likely among non-white households. This is of course not surprising taking into consideration the history of past racial discrimination that the country experienced. Moreover, the main data source is the 1995 Income and Expenditure Survey report. Such a report, gathered almost immediately after the first all race elections is unlikely to have captured recent changes brought about by more representative democracy and recent attempts to redress the past racially discriminatory policies.

## 6 CONCLUDING REMARKS AND POLICY IMPLICATIONS

Our study is about the determinants of poverty in the Northern province, the poorest in the country. We sought to identify the poor and to evaluate the factors that determine their poverty status. In the process, we have applied the latest methodological development in the measurement of poverty to construct a poverty profile for the province. Although the incidence of poverty may be more prevalent in rural areas, it is also a problem in urban areas in the province. Our study lends support to the provision of wage employment as a useful means of combating poverty in this province. The poorer households are those where the income of the household head is from non-wage sources. Other studies may confirm that these non-wage income types are low and erratic and are the primary income source for these households.

The government should encourage a programme of awareness of the link between family size and poverty; and in the process promote the adoption of family planning practices.

The importance of maintaining links with successful family members working elsewhere is highlighted. Though small, remittance receipts are shown to significantly contribute towards households' income and are negatively correlated with poverty incidence. It is our considered view that the government should encourage those working in urban areas to make regular remittance transfers to rural-based family members. This could easily be achieved through a carefully worked out programme that makes remittance transfers tax-deductible. There could be other incentives too, which might link tax rebates or tax exemptions to the size of remittance transfers. This would have the potential to contribute towards poverty reduction. This kind of policy is similar to those covering particular types of gifts and donations in the United States of America.

Development programmes must be intensified to cover more projects in rural areas as well as urban fringes where the majority of the poor non-white population resides, particularly, in Bushbuckridge, Southern, Central and Lowveld regions as priority regions. It is crucial that such development projects be targeted at female and older heads of households.

The assessment of regional poverty shares in our study can serve as a basis upon which to make decisions concerning needs-based-rules for the allocation of budget expenditures to administrative regions in the province.

Finally any strategy for poverty alleviation must pay attention to measures that increase the productivity of the poor through skills training. This will help the poor not only to succeed in self-employment but also enable them to take full advantage of opportunities that become available under governmental and non-governmental poverty alleviation projects in the province.

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