Determinants of Subjective Poverty in Rural and Urban Areas of South Africa

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ABSTRACT

This paper extends the investigation from objective to subjective poverty, an issue that has received inadequate attention in South Africa. The empirical analysis based on the fixed effects two-stage least squares (FE-2SLS) and Living Condition Survey (LSC) reveals that household size, being male, being married or divorced, holding primary and tertiary education are strong predictors of subjective poverty across sub-samples. However, the determinants of rural subjective poverty are slightly different from the determinants of urban subjective poverty. For example, owning a piece of land appears to be important in explaining poverty in the rural sample, contrary to the urban sample. Moreover, we find that health and unemployment are strong predictors of the urban sample, while they are not significant for the rural sample. The results have important implications for policy intervention. It suggests that land is still an important component of diverse livelihoods for rural people to assist rural emerging farmers to be involved in large-scale farming.

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ملخص

توسع هذا الدراسة نطاق البحث من الفقر الموضوعي ليشمل الفقر الذاتي، وهي مسألة لم تحظ باهتمام كاف في جنوب أفريقيا. ويكشف التحليل التجريبي القائم على المربعات الصغرى على مرحلتين ذات التأثيرات الثابتة (FE-2SLS) والدراسة الاستقصائية عن الظروف المعيشية (LSC) أن حجم الأسرة المعيشية وكون الشخص ذكرًا أو متزوجًا أو مطلقًا، وحصوله على التعليم الابتدائي والجامعي هي كلها مؤشرات قوية على الفقر الذاتي عبر مختلف العينات

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الفرعية. غير أن محددات الفقر الذاتي في المناطق الريفية تختلف اختلافا طفيفا عن محددات الفقر الذاتي في المناطق الحضرية. فعلى سبيل المثال، يبدو أن امتلاك قطعة أرض مؤشر مهم عندما يتعلق الأمر بتفسير الفقر عند العينة الريفية، على عكس العينة الحضرية. علاوة على ذلك، نجد أن الصحة والبطالة مؤشران قويان بالنسبة للعينة الحضرية، في حين أنهما ليسا بالأهمية ذاتها بالنسبة للعينة الريفية. ويمكن القول أن لهذه النتائج آثار هامة على التدخلات السياساتية. إذ تشير إلى أن الأرض لا تزال عنصرا هاما في تنوع سبل عيش سكان الريف لمساعدة المزارعين الناشئين في الريف على المشاركة في الزراعة على نطاق واسع.

ABSTRAITE

Ce document permet une analyse de la pauvreté objective à la pauvreté subjective, une question qui n'a pas reçu une attention suffisante en Afrique du Sud. L'analyse empirique basée sur les moindres carrés à deux étapes à effets fixes (FE-2SLS) et l'enquête sur les conditions de vie (LSC) révèle que la taille du ménage, le fait d'être un homme, d'être marié ou divorcé, d'être titulaire d'un diplôme de l'enseignement primaire ou supérieur sont de puissants prédicteurs de la pauvreté subjective dans tous les sous-échantillons. Cependant, les déterminants de la pauvreté subjective rurale sont légèrement différents des déterminants de la pauvreté subjective urbaine. Par exemple, la possession d'un lopin de terre semble être un facteur important pour expliquer la pauvreté dans l'échantillon rural, contrairement à l'échantillon urbain. En outre, nous constatons que la santé et le chômage sont des facteurs prédictifs importants pour l'échantillon urbain, alors qu'ils ne sont pas significatifs pour l'échantillon rural. Les résultats ont des implications importantes pour l'intervention politique. Ils suggèrent que la terre reste une composante importante des divers moyens de subsistance des populations rurales, afin d'aider les nouveaux agriculteurs ruraux à s'impliquer dans l'agriculture à grande échelle.

1. Introduction

The national poverty rate in South Africa has remained stubbornly high regardless of the commitment and efforts by policymakers to combat it. According to the Stats SA figures, the number of poor people in 2015, was 30.3 million, up from 27.3 million individuals in 2011. Poverty has been at the top of the agenda for a very long time (since 1994) and retains its apartheid features. Most of the poor (regardless of the measure used) live in rural areas, dominated by the historically disadvantaged population groups (Black, Coloured, and Indians). Recent estimates (by stats SA, 2017) suggest that rural areas exhibit a high poverty headcount ratio in the region of about 81.3% compared to urban areas where it is hovering at 40.7%. Although the poverty literature in South Africa has investigated trends in objective poverty by geo-type (and other related dimensions), the results derived from such descriptive analysis are only suggestive. Such comparative (and descriptive) analysis only tells us that rural dwellers experience a higher poverty rate than urban dwellers, without shedding light on the factors underpinning these differences.

Moreover, poverty literature in South Africa (except Meth, 2006; Vermaak, 2012; Posel and Rogan 2014) has relied heavily on objective poverty measures (income and expenditure), ignoring other alternative measures (such as subjective measures). Objective poverty is commonly conceptualized as a percentage of the population whose incomes are not enough to meet the subsistence minimum (see Baran and Sweezy, 1966; Reutlin-ger and Selowsky, 1976). Poverty is then measured by linking "expenditure or income, to a money-metric poverty threshold" (Posel and Rogan 2013:2). Objective measures have been criticized for not accounting for differences in the extent of poverty in different communities, and race groups and for ignoring factors (such as tax and social grants) that may significantly alter a household income (Citro & Michael 1995; Deaton, 1997; Ravallion and Lokshin, 2001; Posel and Rogan 2014). Blank (1997) points out that poverty measures are predominantly time-invariant and therefore unreflective of policy and socio-economic changes (such as variations in the composition of the labor force participation—increase in female involvement). Posel and Rogan (2014:2) write "In the South African context, for example, state-subsidized housing and access to basic services such as electricity and water will not be reflected in income or expenditure rates of poverty, but

these may influence subjective assessments of economic well-being". In light of this, the research question asked in this study is the following: are the determinants of rural subjective poverty different from the determinants of urban subjective poverty? To answer this question, the study focuses on the potential factors contributing to the rural-urban differences in subjective poverty in South Africa.

This existing literature on the determinants of poverty in South Africa in two ways. First, it empirically investigates the determinants of rural and urban subjective poverty, a problem statement that has received less attention in South Africa. The apartheid era development policies that deliberately under-allocated resources to rural relative to urban areas triggered historical geo-type biases in South Africa (Zimbalist, 2017). While the urban areas were privileged during and soon after the apartheid regime, the under-allocation of the scarce resource seems to have played a significant role in shaping poverty trends, inequality of opportunities, and how people perceive poverty across different geo-type categories, making it challenging to design appropriate policies to address those socioeconomic issues. Therefore, a better understanding of the determinants of rural and urban subjective poverty is crucial because it can facilitate interventions targeted at the most subjectively poor areas, rather than assuming a size fit all policies.

The second contribution of this paper is that it considers alternative measures of objective poverty in rural and urban areas of South Africa. While it is not possible to construct a perfect measure of poverty, some scholars (e.g. Ravallion and Lokshin, 2001) have suggested alternative measures (such as subjective poverty) that can be used to supplement objective measures. Subjective poverty involves asking people to form an opinion about their poverty status— indicate if they think they are poor or not poor. A forceful proponent of this view, Ravallion, 2012, has provided some justifications as to why this approach might add value to the measurement of objective poverty and the literature in general. The crux of Ravallion, (2012) argument is that subjective poverty measures can ameliorate the problems associated with using the objective poverty measures.

The remainder of the paper is organized as follows: Section 2 provides an empirical review of the extant studies. Section 3 discusses the

methodology and data to be used. Section 4 discusses the empirical findings of the study. Lastly, section 5 presents the conclusion.

2. Review of subjective poverty determinants

What are the determinants of subjective poverty? As noted earlier, the extant literature on the determinants of poverty has predominantly looked at the objective's measures (Chiquito and Lozano, 2017; Biyase and Zwane, 2018; Leow and Tan, 2019; Heshmati, et at. 2019; John and Alexander, 2020) without paying attention to the subjective measures. This section will attempt to shed some light on this emerging literature. In its simplest form, subjective poverty is conceptualized by asking people to form an opinion about their poverty status— indicate if they think they are poor or not poor. A forceful proponent of this measure, Ravallion, 2012, has provided some justifications as to why this approach might add value to the measurement of objective poverty and the literature in general. The crux of Ravallion, (2012) argument is that subjective poverty measures ameliorate the problems associated with using the objective poverty measures. Specifically, subjective poverty measures are not underpinned by the assumption derived from objective measures (such as correct for adult equivalent scales) (Ravallion, 2012, Posel and Rogan 2014). In driving this point home, Posel and Rogan (2014:2) write "In the South African context, for example, state-subsidized housing and access to basic services such as electricity and water will not be reflected in income or expenditure rates of poverty, but these may influence subjective assessments of economic well-being".

Household characteristics (income, household size) and individual characteristics (age, marital status, education, health status as well as employment status) are key predictors of subjective poverty in this literature. For example, Empirical investigations regarding the association between income and subjective poverty have not yielded consistently negative associations between the two variables as expected. For example, while some studies do identify a negative association between income and subjective poverty (Mahmood et al, 2018 and Wang et al, 2020, Yu et al., 2021), others find a positive relationship (Burchardt, 2003; Herrera, 2006; Dolan et al, 2007). The controversies concerning different results can be attributed to the varied dataset used and the adopted measures of subjective poverty (Mahmood, 2018). For example,

Mahmood et al (2018) used Pakistan panel household survey (2010) data and self-assessed poverty measure and found evidence suggesting a negative and statistically significant relationship between subjective poverty and income. Similarly, Wang et al (2020) followed the same path using a representative Chinese household survey and MIQ to investigate poverty and subjective poverty in rural China. On the other hand, Ravallion and Lokshin used SWL and their results suggest that income increases welfare.

Many subjective poverty-related studies have established that household size influences poverty. In particular, larger families have a higher probability of being subjectively poor than smaller families (Gustafsson and Yue, 2006; Mahmood et al, 2018). For instance, Gustafsson and Yue (2006) used MIQ to investigate the rural perception of poverty in China and concluded that an increase in household size is positively correlated with subjective poverty. Specifically, the highest poverty was reported in the household with eight and more household members, consistent with many studies' findings in this field. Several empirical works in this field have also controlled for age in their subjective poverty function (Frey and Stutzer, 2002; Ferrer-i-Carbonell and Gowdy, 2007; Wang, et al, 2020; Yu et al., 2021). These studies mostly find a concave effect of age and age square on subjective poverty (Gustafsson and Yue, 2006; Posel and Rogan, 2014 and Mahamood, 2018). For example, Posel and Rogan (2014) used a probit regression to investigate the extent to which a certain individual might feel poor and found that as the person gets old, the probability of that person being poor increases. More recently, Yu et al. (2021) employed multivariable mixed-effects Tobit regression to investigate the duration of subjective poverty to subsequent cognitive performance and decline among adults aged above 64 in China. Their results reveal that people aged at or above 64 years experimented less subjective poverty compared to younger people. This is somehow related to the cumulative contribution to cognitive aging.

Consistent findings are affirming the importance of gender in explaining subjective poverty rates. For example, Colasanto (1984); Mangahas (2001); Ravallion et al (2013) found that female-headed households are less prone to subjective poverty compared to their counterparts. Mangahas (2001) found that Filipino households with women as the head or headed by an old person have a small probability of being poor. Ravallion et al (2013) also found similar results in their studies in

Tajikistan, Guatemala, and Tanzania. These results are not universal. In his study, Deeming (2013), using an SWL approach and logistic model in the UK found that gender does not matter in terms of enhancing subjective well-being.

Most studies find that highly educated people are less likely to be poor than those that are less educated (see Frey and Stutzer, 2002; Lokshin, 2004; Posel and Rogan, 2014; Wang et al, 2020). For instance, Lokshin (2004) using the Consumption Adequacy Question (CAQ) employed an ordered probit model to investigate subjective welfare in Madagascar and found that households headed by an individual with no education were among the poorest. Likewise, Wang et al, (2020) used a National Representative Survey of rural households in China to investigate poverty and subjective poverty and found that households with less subjective poverty rates were those with higher levels of education.

Employment status, as well as job stability, has also been the focus of the researchers (Filandri et al., 2020). These examine how the household characteristics affected the relationship between subjective and objective in-work poverty and they concluded that job instability among the household members had more probability of increasing subjective poverty in Italy. Along these lines, Zelinsky et al. (2021) used the MIQ to investigate subjective income poverty trends in European Union and their finding suggest that subjective poverty decreased in 16 out of 28 EU countries. What we can deduce from the extant litetrature is that there have been few studies that have looked at subjective poverty in south Africa, but none have investigated subjective poverty in rural and urban areas. Given its potential impacts spillover effects on the people's livelihood, gaining a better understanding of the factors associated with subjective poverty is of paramount impotance. Therefore, our main objective is to bridge the gap in the existing literature by investigating the determinants of subjective poverty in rural and urban areas of South Africa.

3. Methodology and data source

To investigate the determinants of subjective poverty, the analysis employs data from the LCS for SA. They were collected by Statistics South Africa (the official statistical agency). The LCS data were collected for the periods between September 2008 and August 2009, and October 2014 and October 2015, respectively. The first sample consisted of 97 486 individuals living in 25 075 households while the second sample was drawn from the master sample primary sampling units (PSUs). It consisted of 84 879 individuals living in 23 380 households. The LCS is demographically representative, containing information on subjective poverty, household asset ownership, health status, race, employment status, marital status, gender of the household members, age, education, household size, access to services, and income and expenditure. The survey used diary and recall methods; a questionnaire of seven modules; and four modules to collect data for the periods 2008/9 and 2014/15, respectively. Since the analysis focuses on the determinants that affect subjective poverty in different settlement types, apart from the full sample, we also segregate the data into two different sub-samples: rural and urban areas.

3.1. Variable description

To explore the determinants of subjective poverty, the study accounts for the most relevant variables suggested by the existing literature (Ravallion and Lokshin, 2002; Frey and Stutzer, 2002; Herrera, 2006; Posel and Rogan, 2014; Wang, et al, 2020) on the household and demographic characteristics that explain subjective poverty. Our dependent variable of interest is subjective poverty (measured by self-assessed poverty). This is captured by the following question: "Would you say you and your household are at present: wealthy; very comfortable; reasonably comfortable; just getting along; poor; or very poor?' For robustness check, we used an economic ladder question (ELQ) a measure used by several important scholars in this field (Easterlin, 2001; Frey and Stutzer, 2002; Bardasi and Francesconi, 2003; Winkelmann, 2004; Ravallion, 2012). In the living condition survey this question is framed as follows: "Please imagine a 9-step ladder where on the bottom, the 1st step, stand the poorest people, and on the highest step, the 9th, stand the rich. On which step would you consider you and your household to be?".

Although the above-mentioned measures have been both used in the empirical analysis of subjective poverty, the former is a preferred formulation in this paper in so far as it is more direct compared to the latter one. As Posel and Rogan (2014:6) put it "The question does not require respondents to provide a relative assessment of their economic status and we also do not have to make assumptions about the association between ladder-rank and subjective poverty."

The determinants included in the model are consistent with those used in the earlier studies on subjective poverty (Ravallion and Lokshin, 2002; Herrera, 2006; Posel and Rogan, 2014 and Wang, et al, 2020). They include (1) economic factors (employment and income); (2) demographic and personality factors (age, household size, gender, race, marital status, assets, location, education, health, and province dummies), (see the Table 1 in the appendix).

Table 2 shows the summary stats of the variables used in the analysis. As is clear from the table, respondents had to choose from seven answer options. The percentage distributions of answers were as follows: 'wealthy' (0.32%); 'very comfortable' (3.00%) ; 'reasonably comfortable' (14%); 'just getting along' (44%); 'poor' (28%); or 'very poor' (9.8%). The economic ladder question and the responses categories are used for robustness check as noted earlier. The percentage distributions suggest that Poorest is (17.2%) '2sd' (18.32%) '3rd' (21.9%) '4th' (21.17%) '5th' (13.76%) '6th' (4.45%) '7th' (2.12%) '8th' (0.5%) 'Rich' (0.54%). As regards the demographic factors, the table shows that gender composition is mostly in line with existing studies, with 54.4 % females compared to 45.6% males. Race dummies, comparing the largest population group Africans (81.6%) with smaller ones (minorities), such as Coloured (1.3%) Indians (11%), and Whites (5.4 %).

Determinants of Subjective Poverty in Rural and
Urban Areas of South Africa

Table 2: Summary stats

VARIABLES		Mean/%		Std	Min	Max		
Household characteristics								
Loginc		10.65		1.211	2.565	15.89		
Access to land		0.098		0.298	0	1		
Hhsize								
Respondents characteristics		4.115		0.692	1	28		
Age								
36-48		0.152		0.359	0	1		
49-59		0.086		0.281	0	1		
60+		0.083		0.276	0	1		
Agesq		1,175		1,452	0	10,609		
Male		0.456		0.498	0	1		
Female		0.544		0.489	0	1		
NMarried		0.474		0.499	0	1		
Married		0.157		0.364	0	1		
Divorced		0.023		0.146	0	1		
Widowed		0.053		0.224	0	1		
No.school		0.064		0.244	0	1		
Peduc		0.281		0.449	0	1		
Seduc		0.28		0.449	0	1		
Matric		0.1		0.3	0	1		
Teduc		0.022		0.147	0	1		
African		0.816		0.388	0	1		
Coloured		0.013		0.115	0	1		
Indian		0.117		0.322	0	1		
White		0.054		0.226	0	1		
Unemployed		0.052		0.222	0	1		
Health		0.205		0.404	0	1		
Location								
Rural		0.422		0.494	0	1		
Urban		0.578		0.494	0	1		
WC		0.116		0.32	0	1		
EC		0.138		0.345	0	1		
NC		0.057		0.231	0	1		
NW		0.08		0.272	0	1		
GP		0.139		0.346	0	1		
LP		0.125		0.331	0	1		
MP		0.099		0.299	0	1		
FS		0.085		0.279	0	1		
KZN		0.16		0.366	0	1		
Instruments								
SocG		0.2		0.4	0	1		
GoverG		0.036		0.186	0	1		
Dependent variables								

ELQ	Poorest	2sd	3rd	4th	5th	6th	7th	8th	Rich
Percentage	17.2	18.32	21.9	21.17	13.76	4.45	2.12	0.5	0.54

SAP	Wealthy	Very comfortable	Reasonably comfortable	Just getting along	Poor	very poor
Percentage	0.32	3.00	14.62	44.1	28.16	9.81

3.2. Model specification

This section will delve into the estimation of the determinants of subjective poverty in SA. Given the binary nature of our dependent variables in this study, we use a random effect probit framework to model the probability of a certain household falling into subjective poverty. Let the latent model of subjective poverty be specified as follows:

$$Y_{it}^* = \beta X_{it}' + \varepsilon_{it} \quad i = 1,2,\dots,N; \quad t = 1,\dots,T, \tag{1}$$

$$\varepsilon_{it} = c_i + u_{it}, \tag{2}$$

Where Y_{it}^* is a latent dependent variable; Y_{it} is the observed binary outcome variable defined as

$$y_{it} = \begin{cases} 1 & if \ Y_{it}^* > 0; \\ 0, & otherwise. \end{cases} \tag{3}$$

In equation (1) the subscripts i and t show a certain household at time t. β is a vector of coefficients or variation given a vector of explanatory variables. ε_{it} is a composite error term (see equation 2) which can be decomposed into c_i, a term denoting unobserved individual heterogeneity effect and $u_{it} \sim IN(0, \sigma_c^2)$, a random error term. Furthermore, the likelihood function can be marginalised if that is conditional on the X_{it}, the unobserved individual heterogeneity term is also normally distributed with $c_i \sim IN(0, \sigma_c^2)$ and is independent of the X_{it} and u_{it}.

If we assume that the distribution of the latent variable Y^*, conditioned on c_i is independent normal (Heckman, 1981), the vector of parameters βs can be easily estimated. Hence,

$$\Pr(Y_{it} = 1 | c_i, X_{it}) = \Pr\left(\frac{u_{it}}{\sigma_u} > \frac{-\beta X_{it} - c_i}{\sigma_u}\right) = \emptyset \ (v_{it}) \tag{4}$$

Where

$$v_{it} = -(\beta X_{it}' + c_i) / \sigma_u, \tag{5}$$

And $\emptyset$ represents the distribution function of the standard normal variate. Therefore, the likelihood function to be maximized which was assumed to be with respect to c is given by

$$\Pi_i \left\{ \int_{-\infty}^{\infty} \Pi_{i=1}^{T} \left[1 - \emptyset(\beta^* X'_{it} + \sqrt{\frac{\gamma}{1-\gamma}} c^*)\right]^{1-Y_{it}} \right\} \quad \text{x} \quad \left\{ \left[\emptyset(\beta^* X'_{it} + \sqrt{\frac{\gamma}{1-\gamma}} c^*)\right]^{1-Y_{it}} \emptyset(c^*) dc^* \right\}, \quad (6)$$

Where $\beta^* = \beta/\sigma_u$ and $c_i = c_i/\sigma_u$.

3.3. Endogeneity issues

It is conceivable that some of the explanatory variables (e.g., income) might be endogenous. We attempt to take care of the endogeneity of income arising from the causality bias using a fixed effect instrumental variable, as suggested by Amemiya (1978) and Newey (1987). In the fixed effect instrumental variable model, the challenge is to identify the instruments that satisfy the validity conditions. In other words, if a certain instrument F_1 is available, for it to be valid it must meet two fundamental conditions, as follows: $E(T;Y) = 0$ and the $E(T;X) \neq 0$. On the one hand, this simply means that the covariance between the instrument and the dependent variable must be zero, implying that both are not correlated. On the other hand, the covariance between the instrument and the endogenous variable should be different from zero, which means they must be correlated. (Wooldridge, 2002; Murray, 2006). Nonetheless, in this study, we use social benefits as an instrument for income as suggested by Andriopoulou and Tsakloglou (2011). Led by the availability of the data, we divide social benefits into two instruments, those that include social relief[3] and government benefits.

Therefore, equation (1) can be written as shown below[4].

$$X_{it} = \tau_k \sum_{j-1}^{n} F_{it} + \epsilon_{it} \;, \quad (1a)$$

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[3] The questions of these variables are asked in question 6.1I and 4.2a in the LCS questionnaire, 2008/9 and 2014/15, respectively.
[4] The explanatory variables are the same as in the random effect probit model.

$$Y_{2it} = \sum_{j=1}^{n} \prod_k X_{1it} + v_{it} \, , \tag{1b}$$

Where, in equation (1a) X_{it} is the endogenous variable, F_{it} is a set of instrumental variables and other explanatory variables. Equation (1b) X_{1it} is a vector of the equation (1a) regression's residual and all the explanatory variables of equation (1) τ it's a vector of other structural parameters. $\prod (k = 1,...,m)$ are matrices of parameters, by assumption normally distributed.

4   Empirical Results

4.1 Stepwise regression estimates: random effect probit
Table 3 below reports the results of the random effect probit estimates of the determinants of subjective poverty. The estimates are first displayed for the entire sample and then split into sub-samples (rural and urban). Initially model (1) of Table 3 reports the estimated coefficient of income and sequentially incorporates covariates into the model that are important in explaining subjective poverty.

The estimated coefficients of most variables (across the models: Model 1 to model 4) are broadly consistent and collaborate with the findings of previous studies in this field. Expectedly, we find that subjective poverty is determined by household income, household size, access to land, sex, education, race dummies, employment status, self-reported health status, location, and provincial dummies. Model (1) of Table 3 reports the estimated coefficient of income. Consistent with previous work (Ravallion et al, 2020), we find that household income, is a negative and a significant predictor of subjective poverty ($\beta = -0.45$; T = -152). Model 2 of Table 3 is similar to model 1 except that it adds access to land and household size variables. We find that having access to land enters with a positive sign, while household size enters with the expected sign and is significantly related to subjective poverty ($\beta = 0.07$; T = 68), echoing the findings obtained by Mahmood et al (2018) that household size increased subjective poverty in Russia. Interestingly, incorporating these variables does not seem to materially affect the income-subjective poverty nexus.

Model 3 incorporates the respondents' characteristics (i.e., age, gender, education, race, self-assessed health, and employment status). Most of these variables are significant and carry an excepted sign, except for marital status (being married and divorced are not significant). Specifically, the coefficients of the other determinants of subjective poverty, such as age category: 36-48 and 49-59 ($\beta = 0.05$; T=3.6 and $\beta = 0.07$; T =3.5), being male ($\beta = 0.04$; T=5.3), and race dummies (β =-0.42, T=-35.17; β =-0.58, T-15.3; β =-0.66, T=-23.54) are mostly in line existing studies (Ravallion and Lokshin (nd); Posel and Rogan, 2014; Wang, et al 2020; Filandri et al 2020 and Yu et al, 2021).

Education coefficient is of interest, as it suggests that highly educated individuals are less likely to experience subjective poverty: primary education (β =0.11, T=10.9), secondary education (β =0.03, T=3.78), Matric (β =-0.160, T=-12.31), Tertiary education β =-0.39, T=-11.88). This contradicts Wang et al (2020), who found that education is associated with an increase in subjective poverty. The reasonable explanation is that the more educated people are, they would expect high good life quality.

The last model (4) which controls for location, mostly presents negative and significant estimates on provincial dummies. We find that, compared to Western Cape (used as a reference category), households living in other provinces such as Eastern Cape and Northern Cape are more likely to suffer from subjective poverty, implying that these rural provinces should continue to be a major focus of poverty alleviation efforts in South Africa.

Table3: Random effect probit estimates of determinants of subjective poverty in SA

VARIABLES	Model (1) Spoverty	Std.Err	Model (2) Spoverty	Std.Err	Model (3) Spoverty	Std.Err	Model (4) Spoverty	Std.Err
Household Characteristics								
Loginc	-0.456***	(0.003)	-0.523***	(0.004)	-0.444***	(0.004)	-0.432***	(0.004)
Access to land			0.109***	(0.014)	0.066***	(0.014)	0.025*	(0.015)
Hhsize			0.068***	(0.001)	0.057***	(0.001)	0.056***	(0.001)
Respondents Characteristics								
Age								
36-48					0.046***	(0.013)	0.050***	(0.013)
49-59					0.074***	(0.021)	0.075***	(0.021)
60+					-0.078**	(0.033)	-0.091***	(0.033)
Agesq					0.000***	(0.000)	0.000***	(0.000)
Male					0.037***	(0.007)	0.039***	(0.007)
Lparter					0.038***	(0.011)	0.022**	(0.011)
Married					-0.257***	(0.014)	-0.288***	(0.014)
Widowed					-0.029	(0.018)	-0.061***	(0.018)
Divorced					0.024	(0.025)	-0.008	(0.025)
Peduc					0.109***	(0.010)	0.097***	(0.010)
Seduc					0.034***	(0.009)	0.030***	(0.009)
Matric					-0.160***	(0.013)	-0.146***	(0.013)
Teduc					-0.392***	(0.033)	-0.394***	(0.033)
Coloured					-0.422***	(0.012)	-0.453***	(0.016)
Indians					-0.583***	(0.038)	-0.452***	(0.038)
White					-0.659***	(0.028)	-0.666***	(0.029)
Health					-0.026***	(0.010)	-0.035***	(0.010)
Unemployed					0.136***	(0.013)	0.149***	(0.013)
Settlement type								
Rural							0.092***	(0.009)
Location								
EC							0.213***	(0.018)
NC							-0.006	(0.019)
FS							-0.066***	(0.019)
KZN							-0.209***	(0.018)
NW							0.014	(0.019)
GP							-0.085***	(0.018)
MP							-0.192***	(0.019)
LP							-0.042**	(0.019)
Constant	4.578***	(0.033)	4.986***	(0.040)	4.166***	(0.044)	4.074***	(0.049)
Observations	198,827		145,756		145,756		145,756	

Robust standard errors in parentheses. *
** p<0.01, ** p<0.05, * p<0.1.

Table 4: Random effect probit estimates of determinants of subjective poverty (SAP) in rural areas

VARIABLES	Model (1) Coeff.	Std.Err	Model (2) Coeff.	Std.Err	Model (3) Coeff.	Std.Err	Model (4) Coeff.	Std.Err
Household Characteristics								
Loginc	-0.385***	(0.005)	-0.485***	(0.007)	-0.446***	(0.007)	-0.440***	(0.007)
Access to land			0.025	(0.016)	0.023	(0.017)	0.020	(0.017)
Hhsize			0.055***	(0.002)	0.053***	(0.002)	0.055***	(0.002)
Respondents Characteristics								
Age								
36-48					0.058***	(0.020)	0.063***	(0.020)
49-59					0.102***	(0.030)	0.104***	(0.031)
60+					0.034	(0.047)	0.017	(0.047)
ages					0.000**	(0.000)	0.000***	(0.000)
Male					0.026**	(0.011)	0.023**	(0.011)
Lpartner					-0.027	(0.017)	-0.041**	(0.017)
Married					-0.340***	(0.022)	-0.386***	(0.022)
Widowed					-0.048*	(0.026)	-0.093***	(0.026)
Divorced					0.179***	(0.041)	0.120***	(0.042)
Peduc					0.064***	(0.013)	0.044***	(0.014)
Seduc					-0.008	(0.014)	-0.025*	(0.014)
Matric					-0.216***	(0.022)	-0.204***	(0.022)
Teduc					-0.382***	(0.059)	-0.399***	(0.060)
Coloured					-0.236***	(0.038)	-0.301***	(0.058)
Indian					-0.323*	(0.184)	-0.198	(0.185)
White					-0.592***	(0.089)	-0.629***	(0.090)
Health					-0.074***	(0.015)	-0.080***	(0.015)
Unemployed					0.134***	(0.020)	0.139***	(0.020)
Location								
EC							0.267***	(0.071)
NC							0.151**	(0.070)
FS							-0.018	(0.076)
KZN							-0.217***	(0.071)
NW							0.040	(0.071)
GP							-0.046	(0.089)
MP							-0.124*	(0.071)
LP							-0.015	(0.070)
Constant	3.969***	(0.053)	4.754***	(0.068)	4.360***	(0.072)	4.327***	(0.101)
Observations	85,794		60,457		60,457		60,457	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Note: The dependent variable is the self-assessed poverty (SAP)

Are the determinants of subjective poverty shared in the rural and urban areas of South Africa? To answer this question, we split the sample into rural and urban sub-samples (rural and urban) and the results are presented in Tables 4 and 5 below. The estimates of these subsamples are somewhat different from each other (rural different from the urban sample), confirming the importance of distinguishing between the two samples in South Africa. Distinguishing between the determinants of rural and urban areas seems to provide some nuances and useful insights.

As displayed in Models 1 to 4 of Tables 4 and 5, for rural and urban samples, household income, is still a negative and a significant predictor of subjective poverty (β = -0.39; T=77) (β =-0.46, T=114), respectively, findings that are echoed in many previous studies. As for the rural and urban samples, the results in Model 1 to 4 of Table 5 prove yet again that household income is an important predictor of subjective poverty — negatively related to subjective poverty. However, having access to land does not seem to be related to subjective poverty for the rural sample, a somewhat surprising finding. Other remaining coefficients mostly resemble the ones obtained in the full sample and urban sample.

Table 5: Random effect probit estimates of determinants of subjective poverty in urban areas

VARIABLES	Model (1) Coeff.	Std.Err	Model (2) Coeff.	Std.Err	Model (3) Coeff.	Std.Err	Model (4) Coeff.	Std.Err
Household Characteristics								
Loginc	-0.456***	(0.004)	-0.508***	(0.005)	-0.427***	(0.005)	-0.428***	(0.005)
Access to land			0.120***	(0.031)	0.065**	(0.031)	0.048	(0.031)
Hhsize			0.069***	(0.002)	0.058***	(0.002)	0.059***	(0.002)
Respondents Characteristics								
Age								
36-48					0.038**	(0.018)	0.035*	(0.018)
49-59					0.051*	(0.029)	0.044	(0.029)
60+					-0.187***	(0.047)	-0.193***	(0.047)
agesq					0.000***	(0.000)	0.000***	(0.000)
Male					0.049***	(0.010)	0.050***	(0.010)
Lparter					0.064***	(0.014)	0.064***	(0.014)
Married					-0.221***	(0.018)	-0.227***	(0.018)
Widowed					-0.057**	(0.025)	-0.058**	(0.025)
Divorced					-0.070**	(0.033)	-0.082**	(0.033)
Peduc					0.155***	(0.014)	0.153***	(0.014)
Seduc					0.084***	(0.013)	0.080***	(0.013)
Matric					-0.107***	(0.017)	-0.105***	(0.017)
Teduc					-0.374***	(0.040)	-0.374***	(0.040)
Coloured					-0.411***	(0.013)	-0.459***	(0.017)
Indians					-0.561***	(0.038)	-0.511***	(0.039)
White					-0.636***	(0.030)	-0.661***	(0.031)
Health					0.015**	(0.013)	0.000	(0.013)
Unemployed					0.154***	(0.017)	0.156***	(0.017)
Location								
EC							0.199***	(0.021)
NC							-0.039*	(0.021)
FS							-0.056***	(0.020)
KZN							-0.126***	(0.021)
NW							0.035	(0.024)
GP							-0.075***	(0.018)
MP							-0.242***	(0.025)
LP							0.044	(0.036)
Constant	4.470***	(0.043)	4.739***	(0.052)	3.854***	(0.058)	3.916***	(0.061)
Observations	113,033		85,299		85,299		85,299	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Surprisingly, we find a positive and significant association between having access to land and subjective poverty in the urban sample. But the level of significance changes once we control for all the other predictors (see Model 4), suggesting that the estimated coefficient of this variable could have been biased (to a certain extent) by not controlling for the other variables in the analysis. The rest of the other urban estimated parameters are largely consistent with the full sample estimates. Similar to the full sample, subjective poverty is mostly influenced by household size, gender, education, race dummies, employment status, self-accessed health status, and provincial dummies, across the models.

4.2. Stepwise regression estimates: FE-2SLS

To account for the potential feedback relationship between subjective poverty and income (endogeneity bias), we estimate the corresponding results of the determinants of subjective poverty using FE-2SLS estimator. We first performed different post-estimation specification tests, to check if the results are contaminated. These include the Anderson canon test (with the null hypotheses suggesting that the instruments are weak); the Sargan test of identification (with the null hypotheses of the model being exactly identified); and finally, the Hausman test of endogeneity of the regressors (with the null hypothesis of no endogeneity).

The results reveal that the Hausman test chi square p-value is statistically significant across all the samples. Thus, we reject the null hypotheses that the income is exogenous, and therefore an IV technique was required. Furthermore, the Sargan test exhibits chi-square p-value statistically significant for the full and rural samples. This implies that we reject the null hypotheses of the exact identification of the model.

Table 6: FE-2SLS estimates of determinants of subjective poverty (SAP) in SA

VARIABLES	Model (1) Coeff.	Std.Err	Model (2) Coeff.	Std.Err	Model (3) Coeff.	Std.Err	Model (4) Coeff.	Std.Err
Household Characteristics								
Loginc	0.066**	(0.031)	-0.375***	(0.028)	-0.498***	(0.032)	-0.520***	(0.031)
Access to land			-0.056***	(0.008)	-0.081***	(0.014)	-0.033***	(0.011)
Hhsize			0.037***	(0.005)	0.049***	(0.009)	0.054***	(0.009)
Respondents Characteristics								
Age								
36-48					0.070**	(0.030)	0.069**	(0.030)
49-59					0.060	(0.057)	0.058	(0.058)
60+					-0.072	(0.093)	-0.069	(0.096)
agesq					0.000**	(0.000)	0.000**	(0.000)
Male					0.059***	(0.022)	0.055***	(0.019)
Lparter					0.064***	(0.015)	0.079***	(0.018)
Married					0.140***	(0.026)	0.151***	(0.030)
Widowed					0.060***	(0.014)	0.075***	(0.015)
Divorced					0.053***	(0.007)	0.051***	(0.007)
Peduc					-0.106***	(0.025)	-0.106***	(0.026)
Seduc					-0.092***	(0.027)	-0.103***	(0.031)
Matric					0.015	(0.018)	0.005	(0.019)
Teduc					0.232***	(0.028)	0.230***	(0.023)
Coloured					0.050**	(0.021)	-0.018*	(0.011)
Indians					0.220***	(0.035)	0.213***	(0.028)
White					0.467***	(0.055)	0.429***	(0.051)
Health					0.035***	(0.003)	0.025***	(0.002)
Unemployed					-0.099***	(0.029)	-0.110***	(0.026)
Settlement type								
Rural							-0.132	(0.017)
Location								
EC							-0.008	(0.013)
NC							-0.140***	(0.013)
FS							-0.129***	(0.010)
KZN							-0.127***	(0.011)
NW							-0.048***	(0.005)
GP							0.001	(0.004)
MP							-0.086***	(0.017)
LP							-0.080***	(0.016)
Constant	-0.309	(0.329)	4.281***	(0.308)	5.416***	(0.297)	5.751***	(0.297)
Observations	198,827		145,756		145,756		145,756	
Anderson Canon	225.304	(0.000)						
Sargan Statistic	18.707	(0.000)						
Hausman (endogeneity)	137.519	(0.000)						

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Note: The dependent variable is the self-assessed poverty (SAP)

Moving from random effect probit to FE-2SLS affected the estimated coefficients of certain variables. For example, while the estimated coefficient of income remains negative and significant, its magnitude is now smaller. Implying that the estimates derived from the random effect probit overstate the effect of income. Other determinants of subjective poverty also changed after controlling for endogeneity. For example, in model 3 Table 6, we observe that access to land, age (49-59 and 60+), marital status (widowed and divorced), education, belonging to any population group, and health status are different from the random effect estimates. Although age, being widowed or divorced, and holding matric seems to have maintained their signs, their level of significance suggests that their important role in explaining subjective poverty in SA has changed.

Given that the determinants of subjective poverty vary by location, we also controlled for endogeneity in the rural and urban sub-samples. The results are summarised in Tables 8 and 9 below. The empirical analysis based on the FE-2SLS reveals that household size, being male, being married or divorced, and having completed primary and tertiary education are still strong predictors of subjective poverty across sub-samples (rural and urban).

Table 7: FE-2SLS estimates of determinants of subjective poverty (SAP) in rural areas

VARIABLES	Model (1) Coeff.	Std.Err	Model (2) Coeff.	Std.Err	Model (3) Coeff.	Std.Err	Model (4) Coeff.	Std.Err
Household Characteristics								
Loginc	0.016	(0.038)	-0.249***	(0.019)	-0.420***	(0.029)	-0.352***	(0.038)
Access to land			0.003	(0.008)	-0.027***	(0.009)	-0.015	(0.012)
Hhsize			0.027***	(0.004)	0.043***	(0.007)	0.038***	(0.007)
Respondents Characteristics								
Age								
36-48					0.078***	(0.018)	0.067***	(0.017)
49-59					0.074*	(0.040)	0.066*	(0.035)
60+					0.037	(0.063)	0.027	(0.053)
agesq					0.000***	(0.000)	0.000***	(0.000)
Male					0.042***	(0.016)	0.033**	(0.015)
Lparter					0.014	(0.021)	0.005	(0.019)
Married					0.011	(0.024)	-0.032	(0.026)
Widowed					0.025	(0.017)	0.006	(0.015)
Divorced					0.067***	(0.011)	0.047***	(0.011)
Peduc					-0.033**	(0.016)	-0.025	(0.018)
Seduc					-0.031	(0.020)	-0.029	(0.023)
Matric					-0.007	(0.013)	-0.022*	(0.012)
Teduc					0.156***	(0.041)	0.090**	(0.044)
Coloured					-0.002	(0.018)	-0.049**	(0.024)
Indians					0.195***	(0.031)	0.178***	(0.036)
White					0.361***	(0.030)	0.236***	(0.041)
Health					-0.009	(0.008)	-0.014	(0.010)
Unemployed					-0.021	(0.021)	-0.004	(0.019)
Location								
EC							0.062***	(0.015)
NC							0.035***	(0.011)
FS							-0.007	(0.026)
KZN							-0.092***	(0.010)
NW							0.017	(0.016)
GP							0.027	(0.029)
MP							-0.026	(0.025)
LP							-0.020	(0.019)
Constant	0.332	(0.389)	2.952***	(0.181)	4.588***	(0.259)	3.940***	(0.350)
Observations	85,794		60,457		60,457		60,457	
Anderson Canon	55.487	(0.000)						
Sargan Statistic	74.171	(0.000)						
Hausman (endogeneity)	8.441	(0.003)						

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Note: The dependent variable is the self-assessed poverty (SAP)

However, we find the determinants of rural subjective poverty to be slightly different from the determinants of urban subjective poverty. For example, contrary to the urban sample, owning a piece of land appears to be important in explaining poverty (statistically significant) in the rural sample. This implies that owning a piece of land in a rural area is likely halfway through reducing subjective poverty than in the urban areas, this is also well discussed by (Lipton, 2006). Moreover, we find that health and unemployment variables are strong predictors in the urban sample, while they are not significant for the rural sample.

Table 8: FE-2SLS estimates of determinants of subjective poverty (SAP) in urban areas

VARIABLES	Model (1) Coeff.	Std.Err	Model (2) Coeff.	Std.Err	Model (3) Coeff.	Std.Err	Model (4) Coeff.	Std.Err
Household Characteristics								
Loginc	-0.378***	(0.045)	-0.285***	(0.022)	-0.399***	(0.030)	-0.403***	(0.027)
Access to land			-0.006	(0.009)	-0.031	(0.019)	-0.022	(0.016)
Hhsize			0.030***	(0.003)	0.042***	(0.008)	0.043***	(0.008)
Respondents Characteristics								
Age								
36-48					0.047	(0.030)	0.048*	(0.029)
49-59					0.043	(0.051)	0.045	(0.050)
60+					-0.113	(0.082)	-0.107	(0.081)
agesq					0.000**	(0.000)	0.000**	(0.000)
Male					0.045***	(0.016)	0.044***	(0.015)
Lparter					0.081***	(0.013)	0.084***	(0.013)
Married					0.122***	(0.025)	0.123***	(0.025)
Widowed					0.056***	(0.011)	0.065***	(0.012)
Divorced					0.031***	(0.008)	0.032***	(0.007)
Peduc					-0.086***	(0.024)	-0.084***	(0.025)
Seduc					-0.086***	(0.029)	-0.089***	(0.030)
Matric					-0.014	(0.017)	-0.016	(0.018)
Teduc					0.140***	(0.016)	0.138***	(0.013)
Coloured					-0.037***	(0.010)	-0.051***	(0.008)
Indians					0.082***	(0.020)	0.093***	(0.018)
White					0.280***	(0.038)	0.269***	(0.033)
Health					0.033***	(0.004)	0.028***	(0.003)
Unemployed					-0.092***	(0.025)	-0.088***	(0.022)
Location								
EC							0.022**	(0.010)
NC							-0.122***	(0.013)
FS							-0.103***	(0.008)
KZN							-0.072***	(0.007)
NW							-0.047***	(0.004)
GP							-0.006	(0.004)
MP							-0.104***	(0.013)
LP							-0.002	(0.027)
Constant	4.477***	(0.494)	3.353***	(0.240)	4.441***	(0.288)	4.521***	(0.262)
Observations	113,033		85,299		85,299		85,299	
Anderson Canon	239.188	(0.000)						
Sargan Statistic	2.233	(0.1351)						
Hausman (endogeneity)	87.00	(0.000)						

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Note: The dependent variable is the self-assessed poverty (SAP)

In summary, the empirical analysis based on the FE-2SLS and LCS reveals that household size, being male, being married or divorced, and having completed primary and tertiary education are strong predictors of subjective poverty across sub-samples (rural and urban). However, we find the determinants of rural subjective poverty to be slightly different from the determinants of urban subjective poverty. For example, contrary to the urban sample, owning a piece of land appears to be important in explaining poverty (statistically significant) in the rural sample. Moreover, we find that health and unemployment variables are strong predictors in the urban sample, while they are not significant for the rural sample.

4.3.   Robustness check

We performed some robustness checks on the determinants of subjective poverty. Specifically, we replaced the subjective measure of poverty with an alternative measure, namely, the economic ladder question, a measure used by several important scholars in this field (Easterlin, 2001; Frey and Stutzer, 2002; Bardasi and Francesconi, 2003; Winkelmann, 2004; Ravallion, 2012). The question is usually framed as follows: "Please imagine a 9-step ladder where on the bottom, the first step, stand the poorest people, and on the highest step, the ninth, stand the rich. On which step consider you and your household to be?[5]" (Ravallion and Lokshin, 1998). Tables (9 and 10) in the appendix, show the estimated results for the rural and urban. Reassuringly, the robustness estimates of the determinants of subjective poverty are mostly consistent with the earlier estimates and therefore not too sensitive to this alternative measure of subjective poverty. this confirms our results concerning the suitability of the alternative variables used.

5. Concluding remarks

Although poverty literature in South Africa has investigated trends in objective poverty by geo-type (and other related dimensions), the results derived from such descriptive analyses are only suggestive. This study extends the investigation from objective poverty to subjective poverty, an

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[5] In this study it takes a value of 1 if the household belongs to the first and second ladder and 0 otherwise.

issue that has received inadequate attention in South Africa. This paper also deals with these discrepancies by investigating the determinants of rural and urban poverty using appropriate statistical analysis. The supreme objectives of this study are to assess the determinants of subjective poverty in South Africa based on the full sample and to evaluate the determinants of subjective poverty in rural and urban areas of South Africa.

The empirical analysis, based on the FE-2SLS and Living Condition Survey (LCS), reveals that household size, being male, being married or divorced, and having completed primary and tertiary education, are strong predictors of subjective poverty across sub-samples (of rural and urban). However, we find the determinants of rural subjective poverty to be slightly different from the determinants of urban subjective poverty. For example, owning a piece of land appears to be important in explaining poverty (statistically significant) in the rural sample, in contrast to the urban sample. Moreover, we find that health and unemployment variables are strong predictors in the urban sample, while they are not significant for the rural sample. The results derived from this study have important and broader implications for policy intervention. It suggests that land is still an important component of diverse livelihoods for rural people and can assist not only the subsistence rural farmers but also it is more likely going to help emerging farmers who want to be involved in large-scale farming.

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Appendix

Table 1: Explanatory variables used in the empirical analysis

Self-Assessed Poverty (SAP)	Dummy	1=poor and very poor, 0 otherwise
Household	Continuous	Total income of the household
Characteristics	Dummy	1=Owning or access to land, 0 otherwise
Income	Continuous	Household size
Access to land		
Hhsize	Dummy	1= age between 18 and 35 years old, 0 otherwise
Respondents'	Dummy	1= age between 36 and 48 years old, 0 otherwise
Characteristics	Dummy	1= age between 49 and 59 years old, 0 otherwise
18-35	Dummy	1= 60 +, 0 otherwise
36-48	Continuous	
49-59		
60+	Dummy	1= never married, 0 otherwise
ages	Dummy	1= living with a partner, 0 otherwise
	Dummy	1= married, 0 otherwise
Never married	Dummy	1= divorced and separated, 0 otherwise
Living with partner	Dummy	1= widow/er, 0 otherwise
Married		
Divorced	Dummy	1= household member with no schooling, 0
Widow/er	Dummy	otherwise
	Dummy	1= household member with primary educ., 0
No schooling	Dummy	otherwise
Primary education	Dummy	1= household member with secondary educ., 0
Secondary education	Dummy	otherwise
Matric	Dummy	1= household member with matric, 0 otherwise
Tertiary education		1= household member with tertiary educ., 0
Female	Dummy	otherwise
Male	Dummy	1= female, 0 otherwise
	Dummy	1= male, 0 otherwise
African	Dummy	
Indian	Dummy	1= African, 0 otherwise
White	Dummy	1= Indian, 0 otherwise
Coloured		1= White, 0 otherwise
Health	Dummy	1= Coloured, 0 otherwise
Unemployed	Dummy	1= less than adequate, 0 otherwise
Location		1= unemployed, 0 otherwise
Rural	Dummy	
Urban	Dummy	1= living in formal or informal rural, 0 otherwise
	Dummy	1= living in formal or informal urban, 0 otherwise
WC	Dummy	
NC	Dummy	1= living in Western Cape, 0 otherwise
FS	Dummy	1= living in Northern Cape, 0 otherwise
KZN	Dummy	1= living in Free State, 0 otherwise
NW	Dummy	1=living in KZN, 0 otherwise
GP		1= living in North West, 0 otherwise
MP		1= living in Gauteng, 0 otherwise
LP		1= living in Mpumalanga, 0 otherwise
		1= living in Limpopo, 0 otherwise

Table 92: FE-2SLS (ELQ) estimates of determinants of subjective poverty in rural areas

VARIABLES	Model (1) Coeff.	Std.Err	Model (2) Coeff.	Std.Err	Model (3) Coeff.	Std.Err	Model (4) Coeff.	Std.Err
Household characteristics								
Loginc	-0.817***	(0.157)	-0.676***	(0.164)	-0.608***	(0.042)	-0.625***	(0.051)
Access to land			0.040	(0.022)	-0.008	(0.028)	-0.010*	(0.024)
Hhsize			0.063***	(0.007)	0.053***	(0.011)	0.055***	(0.011)
Repondents characteristcs								
Age								
36-48					0.141***	(0.012)	0.142***	(0.011)
49-59					0.075*	(0.043)	0.075*	(0.043)
60+					-0.015	(0.091)	-0.017	(0.092)
agesq					0.000**	(0.000)	0.000**	(0.000)
Male					0.055**	(0.026)	0.056**	(0.026)
LPartner					-0.160**	(0.063)	-0.155**	(0.063)
Married					0.034	(0.059)	0.048	(0.060)
Widowed					-0.088	(0.054)	-0.083	(0.051)
Divorced					-0.093**	(0.041)	-0.089**	(0.040)
Peduc					-0.086***	(0.017)	-0.090***	(0.018)
Seduc					-0.089***	(0.028)	-0.092***	(0.029)
Metric					0.073*	(0.038)	0.073*	(0.039)
Teduc					0.441***	(0.055)	0.463***	(0.064)
Coloured					0.659***	(0.144)	0.675***	(0.158)
Indian					0.135**	(0.055)	0.137**	(0.056)
White					0.733***	(0.128)	0.753***	(0.138)
Health					0.001	(0.014)	0.002	(0.016)
Unemployed					-0.103***	(0.016)	-0.109***	(0.017)
Location								
EC							-0.002	(0.051)
NC							-0.017	(0.032)
FS							-0.068***	(0.024)
KZN							-0.009	(0.034)
NW							0.002	(0.027)
GP							0.183***	(0.024)
MP							0.025	(0.032)
LP							-0.036	(0.034)
Constant	8.660***	(1.603)	6.966***	(1.672)	6.269***	(0.390)	6.439***	(0.493)
Observations	57,884		34,428		34,428		34,428	

***P<0.01; **P<0.05 and *P<0.1

Note: The dependent variable is the economic ladder question (ELQ)

Table 10: FE-2SLS estimates of determinants of subjective poverty (ELQ) in urban areas

VARIABLES	Model (1) Coeff.	Std.Err	Model (2) Coeff.	Std.Err	Model (3) Coeff.	Std.Err	Model (4) Coeff.	Std.Err
Household characteristics								
Loginc	-0.232***	(0.026)	-0.187***	(0.019)	-0.194***	(0.005)	-0.209***	(0.007)
Access to land			-0.026***	(0.005)	-0.041***	(0.004)	-0.027***	(0.004)
Hhsize			0.006***	(0.002)	0.010***	(0.003)	0.011***	(0.002)
Respondents characteristics								
Age								
36-48					0.017	(0.011)	0.020*	(0.011)
49-59					-0.002	(0.028)	0.002	(0.029)
60+					-0.108*	(0.056)	-0.104*	(0.059)
agesq					0.000**	(0.000)	0.000*	(0.000)
Male					0.018	(0.017)	0.018	(0.016)
LPartner					-0.131***	(0.014)	-0.128***	(0.012)
Married					-0.051***	(0.009)	-0.043***	(0.008)
Widowed					-0.068***	(0.010)	-0.060***	(0.008)
Divorced					-0.046***	(0.008)	-0.044***	(0.007)
Peduc					0.001	(0.009)	-0.005	(0.008)
Seduc					-0.026***	(0.005)	-0.034***	(0.006)
Metric					-0.021	(0.013)	-0.022	(0.014)
Teduc					0.040***	(0.009)	0.047***	(0.010)
Coloured					0.028	(0.029)	0.060**	(0.028)
Indian					0.032***	(0.010)	0.016	(0.012)
White					0.120***	(0.033)	0.124***	(0.039)
Health					-0.026***	(0.007)	-0.028***	(0.007)
Unemployed					-0.093***	(0.010)	-0.097***	(0.011)
Location								
EC							-0.007*	(0.004)
NC							-0.078***	(0.004)
FS							-0.075***	(0.007)
KZN							-0.092***	(0.008)
NW							-0.074***	(0.010)
GP							-0.007	(0.008)
MP							-0.067***	(0.002)
LP							-0.030**	(0.014)
Constant	2.744***	(0.286)	2.213***	(0.219)	2.309***	(0.057)	2.509***	(0.072)
Observations	78,490		53,260		53,260		53,260	

***P<0.01; **P<0.05 and *P<0.1

Note: The dependent variable is the economic ladder question (ELQ)