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Poverty and ethnicity among black South Africans

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Abstract: This paper investigates inequalities across the major black ethnic groups in South Africa, accounting for 80 per cent of the country's population. We demonstrate that there is an important ethnic gap in the poverty levels of the Xhosa and the Zulu with respect to the Sotho/Tswana. We also show that these gaps are largely associated with the former groups having an accumulation of disadvantages in location, demographic structure, education, and labour market outcomes. The analysis of the evolution that occurred after the end of apartheid shows that the gap might have increased, especially in the case of the Zulu.

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1   Introduction

South Africa stands out for being a highly unequal country, with these inequalities largely based along racial lines between the largest white minority in sub-Saharan Africa (SSA) and the more numerous population of African origin. This was the main consequence of its particular history, in which the former group ruled the country for many years, enforcing the economic, social and political exclusion of the latter, an exclusion that intensified especially during the years of apartheid (1948-94). After the end of this regime, the country engaged in a national project of de-racialization, attempting the construction of a society in which race or ethnicity no longer determines the course of people's lives.

Poverty and deprivation in terms of meeting basic needs have both decreased in the overall population, as has the gap between blacks and whites with regards to poverty levels (Bhorat et al. 2006; Gradín 2013). Recently, Gradín (2013) demonstrated how the enormous black-white gap in poverty and material deprivation was, to a large extent, driven by the accumulation of different disadvantages among Africans across many dimensions. These Africans are overrepresented in the least developed areas in a country with extreme residential segregation; they have lower levels of attained education and generally poorer labour market outcomes; they face higher unemployment rates and fill mainly low-skill occupations. Additionally, past inequalities, proxied by the gap in parental education, were shown to play a substantial role as the main legacy of the long-lasting discrimination during the era in which whites ruled the country. Some progress made after the end of apartheid allowed Africans to increase their attained years of education and to have better access to high-skilled occupations, both of which have helped to significantly reduce the racial poverty gap. This gap remains large, however, and is increasingly associated with other factors such as the cross-racial differences in the unequal quality of education. There is evidence of de-racialization due to the increasing role of socioeconomic characteristics in explaining the income distribution in South Africa (lower between-race inequality) since the end of apartheid but, contrary to expectations, this occurred in the context of increasing inequalities pushed by higher inequality among the various races (Leibbrandt et al. 2012).

The gap between Africans and whites is so large in South Africa that it has brought much attention in the analysis of the income distribution and other relevant dimensions of well-being. There, however, each group is implicitly seen as being homogeneous. There are important differences within groups, however, that are often ignored.[1]

The first European settlers began to arrive in the region during the second half of the seventeenth century (1652), mostly from the Netherlands, but also from France and Germany, and were the basis of the current Afrikaner population, which speaks Afrikaans, a local simplified version of Dutch; they have always made up more than half of the white population. During the nineteenth century, the region progressively fell under British rule and English speakers occupied the upper-end of the income distribution, filling the best jobs, while the Afrikaans were poorer. The within-white gap, however, was practically closed during the second half of the twentieth century and today we do not find significant differences between these two groups.

On the other hand, non-whites were grouped by whites into different racial categories: currently called Coloured, Africans and Indians/Asians. The population of African descent is made up of multiple ethno-linguistic groups. The aboriginal population in the area consists of the Khoisan people, two nomadic groups of hunter-gatherers and herders (previously known as Bushmen and

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[1] A detailed demographic and economic history of South Africa can be found, for example, in Feinstein (2005) or Thompson (2006).

Hottentots) that settled in the western part of Southern Africa. This population was the first to experience contact with the Europeans and is the one whose traditional way of life was more seriously damaged, drastically decimated by conquest and by diseases for which they had no immunity. For their lighter skin colour, their descendants were categorized by whites as Coloured, not as Africans, jointly with descendants of former Malaysian slaves and people of mixed race, and adopted Afrikaans as their home language.

Most Africans are the result of the immigration of Bantu famers from the Great Lakes region in East Africa into eastern areas of South Africa since the third century. This population, although sharing a common heritage, was split into several tribes or chiefdoms, which speak different languages. The two main Bantu language branches are Nguni (including the IsiZulu, IsiXhosa, SiSwati and IsiNdebele languages) and the Sotho-Tswana branch (including SeSotho, Sepedi or Northern Sotho and Setswana). Other, smaller branches are Xitsonga and Tshivenda. In total, nine African native languages are recognized as official in the 1996 South African Constitution, sharing this status with English and Afrikaans. Africans were also extraordinarily affected by European settlement, but due to their larger numbers and higher resistance to imported diseases were able to keep their own culture and language. This is the target population of this paper, although, as mentioned, they do not account for all those of African descent, as some of them (the Khoisan and people of mixed race) are considered Coloured in the peculiar historical South African categorization of race.

Europeans did not enslave Africans but brought racial segregation, which intensified during apartheid, and used aggressive policies against non-whites across all imaginable dimensions, with special interest in the physical separation of races in all aspects of life. In particular, Africans were disenfranchised. They were dispossessed of their land and had only very limited access to it in homelands or reservations, being forced to provide low-paid and low-skill labour for European-ruled farms, mines and industries, the ultimate objective of the segregative social system. This was mostly in the form of temporary migration with limited geographical mobility, which helped to destroy their families. As a consequence of all of these circumstances, Africans are now overcrowded into homelands and in mostly informal settlements (townships) around the largest cities. Divisions among non-whites, especially among different African ethnicities, have been largely exploited and exacerbated by white rulers since the conquest period, in order to divide them and make it easier to control them. Examples of this are the different educational systems for each ethnicity during apartheid. Racist policies first led to the compulsory affiliation of blacks with one homeland, and then to the creation of pseudo-independent Bantustans.

There are reasons in general to investigate ethnic differences in socioeconomic outcomes. Ethnicity is a given characteristic that should not determine an individual's outcomes in life, per se. However, in many countries, different historical backgrounds; varying levels of access to economic opportunities, resources and political influence; a strong sense of ethnic solidarity (e.g., Bossuroy 2011) and other factors have led ethnicity to become an important determinant of differences in life outcomes. In the case of South Africa, the large black-white differential, the common history of discrimination and the construction of a new national identity based on a de-racialized society after the traumatic experience of apartheid might have helped to disregard the ethnic issue among Africans or even turn it into something politically incorrect if seen as divisive (Neff 2007, being an exception to this). However, we argue that these differences still exist, are increasing in some cases and are large enough to be well worthy of investigation to determine their nature. Given that Africans account for nearly 80 per cent of the country's population, and given the increasing role of within-race growing heterogeneity in shaping the country's income distribution, a better understanding of these ethnic differentials is crucial to ascertain the present and future of well-being in South Africa.

For these reasons, this paper attempts to fill this gap by first documenting the degree to which different African ethnicities experience important socioeconomic differences, at least according to international standards. Second, we will aim to identify the sources of the ethnic poverty gap by estimating how much of the gap is associated with certain groups having poorer characteristics than others. Although all African groups were discriminated against, their different histories and cultures, as well as their specific geographical locations, might have led some of them to have higher poverty rates as a consequence of them living in the least developed areas, dropping out earlier from school, and so forth. Or, on the contrary, they may have a higher risk of being poor associated with certain given characteristics. For that, we will use a regression-based decomposition technique that allows us to break the observed differential into the part that is explained by characteristics and the part that remains unexplained (the conditional poverty gap).

In what follows, we first describe the data and demonstrate how income distribution varies across ethnicities. Subsequently, we present the methodology and provide the explanation for these ethnic gaps. A final section summarizes the main results.

2   Income distribution by ethnicity in South Africa

2.1   Data and main definitions

The empirical analysis uses the National Income Dynamics Study (NIDS) database as the main source of information. NIDS is a panel produced by the Southern Africa Labour and Development Research Unit (SALDRU) at the University of Cape Town, of which we use the first two waves (SALDRU 2012a, 2012b). Wave 1 collected information from a first interview at households in 2008. A second interview was then conducted between May 2010 and September 2011. We worked with two different samples. One is a 2008 cross-section of 22,213 African individuals living in 5,631 households. The other is a balanced panel of those who were also successfully interviewed in the second wave (17,365 African individuals). The attrition rate of Africans who remained in the scope of the survey (who did not die or move out of South Africa) was approximately 15 per cent on average. It is known that in this panel there is a higher probability of attrition for those with higher incomes in 2008 (Finn et al. 2014). This is also true for Africans. For example, attrition was 18 per cent among non-poor Africans in 2008 versus 13 per cent among the poor. Attrition is also higher among Africans speaking IsiXhosa (22 per cent) and SeSotho (18 per cent) and lower among those speaking Setswana and IsiZulu (12 per cent). Longitudinal weights are thus used in order to at least partially recover the representativeness of the original sample.

Ethnicity is proxied by the language spoken at home in 2008. About 91 per cent of Africans report speaking a native language at home, 7 per cent have missing information, and only 1.5 per cent speak Afrikaans or English, although the former is de facto the lingua franca for the majority of the population and thus is used as a second language to some degree by most Africans. We focus the analysis on four out of nine groups for both simplicity and for guarantying a large enough number of observations per group. The two largest groups are Zulu (29 per cent of Africans) and Xhosa (22 per cent), both part of the Nguni linguistic group. The other two are Sotho (11 per cent) and Tswana (8 per cent). While the first two analysed groups are those with generally poor income, the other two, which will be pooled together, are those with the reported highest income among all African groups.

Income is measured as the total amount received during the 30 days prior to the interview by all household members from multiple sources, such as earnings, social benefits, interest payments

and so forth, and includes own-home imputed rent. Income magnitudes are all expressed in September 2008 prices, based on monthly national-level consumer price index estimates from Statistics South Africa. For robustness, we have checked to ensure that eliminating imputed rental income from the income definition did not significantly affect the results.[2] A person is considered to be poor when her per capita monthly household income lies below a poverty line fixed at 515 Rands.[3] This is the updated lower-bound for the cost-of-basic-needs poverty line estimated by Hoogeveen and Özler (2006) and Özler (2007), widely used in the previous literature. We differentiate between those who were poor only in the first interview and those who were poor in both interviews. For simplicity, we call the former *temporary* poor and the latter *persistent* poor, although we are not aware of their specific situations in between both interviews.

There are two characteristics of the panel structure that might be problematic when it comes to measuring poverty dynamics. Interviews in both waves were not necessarily conducted in the same calendar month and the time span between them varies from 18 to 42 months (although about 72 per cent lie in the 27-31 months range). This particular structure could affect our dynamic results because of the influence of seasonal earnings and the fact that a higher time span could increase the likelihood of experiencing a large change in income. However, our aim is to analyse differences across groups, and thus our results would be affected by different time profiles across groups (we are able to control for that factor) and different impacts of a given time profile for some groups (which will be integrated in the unexplained portion of our model).

Despite the limitations of this unique nationally representative panel in South Africa, it should be kept in mind that it is of extraordinary high quality, especially if compared with most panels used in Africa, which tend to be small and restricted to specific communities (e.g., see the review in Baulch and Hoddinott 2000).

In order to evaluate the trend after the end of apartheid, we use a second source of information, also produced by SALDRU: the 'Project for Statistics on Living Standards and Development' (PSLSD) for 1993 (SALDRU 1994). This cross-section contains information on 34,869 Africans in 6,475 households. This database has several similarities to NIDS but also has some comparability issues, discussed in detail in Leibbrandt et al. (2012). In particular, a single individual in PSLSD answered all of the questions on income on behalf of all members of the household, whereas in NIDS each member of the household answered individual income questions. There are also concerns with the comparability of two income components, which for that reason will be removed in the analysis of the trend: own-home imputed rent and income from agricultural sources.

2.2 Income distribution and ethnicity

First, we provide evidence in support of the fact that African ethnic groups have differing income distributions. Figure 1 plots the estimated adaptive kernel density function for each group based on the 2008 cross-section. It becomes clearly apparent that the Xhosa and Zulu lie behind the Sotho and Tswana in terms of per capita income, with other Africans in between both groups. Thus, this renders it evident that for a large set of poverty lines, the first two groups will report higher levels of poverty. The specific poverty line used in this paper is also drawn in the same graph.

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[2] The risk was that the imputation was made using similar covariates as those used here to estimate poverty risk and, thus, part of the relationship found between poverty and covariates could be driven by these imputations.

[3] Using the exchange rate of September 2008 this meant about US$43 per month. From estimations in Özler (2007) it is implied that this poverty line amounted to US$3.7/day in 2000.

Table 1 provides some summary statistics for all four races and the main African ethnic groups. Looking at the 2008 cross-section, as is well known, all African groups clearly lie far behind the other races in South Africa, especially whites, because of their lower incomes and higher poverty rates. The gap is as huge as if their statistics came from different countries, if not continents. However, this fact should not conceal that the differential among Africans themselves is also big. The median income for the Sotho/Tswana is more than 70 per cent higher than that of the Xhosa (61 per cent in the case of the Zulu). Additionally, poverty rates are about 20 percentage points higher among the Zulu and Xhosa than among the Sotho/Tswana. This poverty differential is large according to international standards. Indeed, it is slightly larger than the black-white differential in poverty rates previously found in Brazil or in the US (Gradín 2009, 2012).

Table 1: Income and poverty by race and African ethno-linguistic group

Ethnicity	2008 Cross-section				2008-2010/11 Balanced panel				
	% Pop.	Mean income	Median income	Poverty rate %	Poverty rate %	Persistent poverty %	Temporary poverty %	Entry rate %	Exit rate %
Xhosa	18.5	734	376	60.7	60.9	43.3	17.6	38.7	28.9
Zulu	23.7	756	401	62.5	63.6	44.9	18.7	33.7	29.3
Sotho/Tswana	16.8	1,255	644	41.6	43.0	30.1	12.9	23.2	30.0
Other African	20.1	1,164	495	51.9	56.2	41.5	14.7	28.8	26.2
Total African	79.2	970	465	54.9	56.7	40.5	16.2	30.5	28.5
Coloured	9.0	1,728	1,028	25.2	27.5	15.1	12.5	13.9	45.3
Asian/Indian	2.6	5,120	2,258	8.8	13.9	9.0	4.9	1.4	35.2
White	9.3	7,736	5,284	1.4	1.3	0.9	0.3	1.5	27.3
Total country	100	1,771	574	46.1	48.8	34.5	14.3	22.8	29.4

Source: Own construction using NIDS (2008, 2010/11).

Figure 1: Density functions by African ethno-linguistic group in South Africa
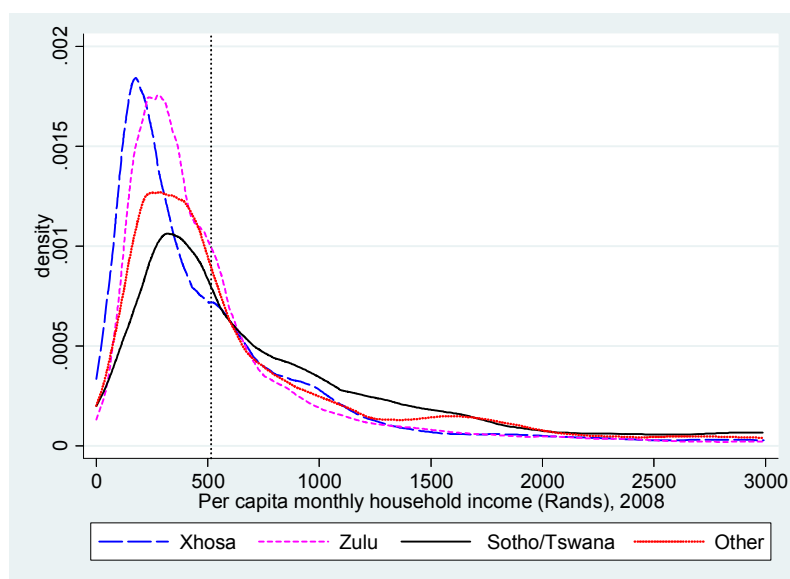
Source: Own construction using NIDS (2008).

Table 1 also provides information for the balanced panel. Poverty rates in the panel for 2008 are similar to those found in the cross-section, which means that the reweighting does a good job at correcting the effects of attrition. Approximately 30 per cent of those who are poor in 2008 leave poverty by the next interview (exit poverty rate). These are the temporary poor, while the remaining 70 per cent are the persistent poor. Additionally, a large proportion of those who were not found poor in 2008 fell into poverty by the second interview (entry poverty rate). Here the proportion diverges depending on the group, going from 23 per cent for the Sotho/Tswana to 34 per cent of the Zulu and 39 per cent of the Xhosa, which again indicates a large ethnic gap.

Disentangling the sources of these differentials in poverty rates and entry rates among Africans on the basis of ethnicity is the main objective of the paper.

2.3 Potential explanations of differentials in poverty risk and entry rates

The African population differs according to its various ethnicities in several aspects that could affect poverty risk, either through opportunities to obtain income or according to needs. Although present in various territories, for historical reasons each group is predominant in different provinces. The Zulu make up 92 per cent of the African population in Kwazulu-Natal (with Durban as the largest city), while the Xhosa account for 94 per cent of the African population in Eastern Cape and 64 per cent in Western Cape (which includes Cape Town). The Sotho amount to 79 per cent in Free State, and the Tswana are 57 per cent of the Africans in Northern Cape and 64 per cent in North West. The last two groups mostly live near the border with Lesotho and Botswana, respectively, whose main populations are closely related. The province of Gauteng (including Johannesburg and Pretoria) provides the highest diversity (26 per cent Zulu, 15 per cent Sotho, 13 per cent Xhosa, and 11 per cent Tswana). The different industry specializations of the South African provinces could lead to differences in job availability and wages.

African ethnic groups also differ in terms of other characteristics. Near half of the Zulu and Xhosa live in Tribal Authority Areas (47 per cent and 46 per cent, respectively, compared with 22 per cent of the Sotho/Tswana) and in larger proportions in informal urban settlements (20 per cent and 13 per cent versus 10 per cent). While about 60 per cent of the Sotho/Tswana live in formal urban areas, only 25 per cent and 39 per cent of the Zulu and Xhosa live in those areas. The Zulu and Xhosa also have lower education, 20 per cent or less of those 18 years or older have completed secondary school (matric) compared with 30 per cent of the Sotho/Tswana. The Xhosa have the weakest attachment to the labour market. For example, 29 per cent of those 16 years or older in this group report being employed (including casual employment and self-employment), compared with 38 per cent of the Zulu and 43 per cent of the Sotho/Tswana. The Zulu stand out for having larger households, especially with more children, which increases the households' needs. Zulu people live in households with 2.7 children and 3.9 adults, on average, compared with 2.2/3.2 (Xhosa) and 1.8/3 (Sotho/Tswana). The first two groups also tend to have much older household heads, and the Zulu stand out for having the lowest proportion of householders who are not married (34 per cent compared with 40 per cent or more in the other groups).

Apart from differing in relevant characteristics, it might be possible that these had a different impact on the risk of being poor in each case due to factors we are not able to control for. This would be the consequence of different economic environments and, thus, opportunities available in their respective provinces, the quality of education received, cultural differences, and so forth. For example, if there were group differences in terms of their returns to education in the labour market, the association between poverty and a given attained educational level (e.g., secondary school completed) would also be different. The lack of literature addressing ethnic differences in education, labour market outcomes, and so forth makes it difficult to ascertain the relevance of

these factors. However, our results below show that it is the differences in observed characteristics that matter the most.

3   Methodology for decomposing the ethnic poverty gap

We examined the contribution of a number of household characteristics to the differential in poverty rates by using an approach that is an extension of the classical Blinder-Oaxaca decomposition of the average gap into explained and unexplained parts, but applied to a dichotomous variable (poverty indicator) instead of a continuous variable (e.g., wage).[4] In our framework, the ith person in group g is considered poor (alternatively entry poverty) when her per capita household income y_i^g is (falls) below the poverty line z. Then, under a logit probabilistic model, the likelihood of this person being in (entering) poverty (P_i^g) is given by:

$$P_i^g = \Pr\left(y_i^g < z\right) = F(X_i^g \beta^g) = \frac{\exp\left(X_i^g \beta^g\right)}{1 + \exp\left(X_i^g \beta^g\right)} \tag{1}$$

where F represents the logistic probabilistic cumulative distribution, X_i^g is a vector of characteristics describing i's household, and β^g is the associated vector of coefficients. We estimated regressions separately for each group.

Among the explanatory variables (see average values in the Appendix), we included a number of characteristics of the household (grouped into location, demographic, education, labour and other factors) that may influence poverty risk. Regarding location, we distinguish between residence in rural, tribal authority, urban informal and urban formal areas. We have not included the province of residence because there is little overlapping among groups, something necessary for any counterfactual analysis. However, most of the expected differences resulting from Africans living in different provinces will be captured by other variables in the model (urbanization, education, occupation and so forth). Among the demographic variables, we included several characteristics of the head, such as gender/age (15-24, 25-55 and 56 or older), migration status (non-migrant, immigrant from another province or immigrant from abroad; migrated during the last 5 years or not), or marital status (married, living with partner, never married or widow(er)/divorced/separated). We also included the number of children (0-5 and 6-14) and adults (15 or above) in the household. With respect to education, we took into account the level of attained education by the head (none, grades 1-7, 8-11 or secondary schooling or higher; a scale reflecting reading and writing literacy in home language and in English), as well as the proportion of those at least 18 years old with secondary schooling (matric) completed. The labour factors considered employment status of the head (not economically active, unemployed, self-employed, casual employed or other employed), her occupation (legislators/senior officials/managers, clerks, service/shop/market sales, skilled agricultural/fishery workers, craft and related trades, plant and machinery operators and assemblers) and a dependency ratio defined as the proportion of adults in the household not working and not receiving pensions or unemployment benefits. Among other factors, we included information regarding the quarter in which the first interview occurred (and the second one, as well as the time span between both interviews in the case of the panel). In the case of the entry poverty rate, we have also included the distance to the poverty line in 2008 to account for the fact that for those groups that are on average closer to that threshold, a smaller income change is required to fall below the poverty

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[4] See Blinder (1973) and Oaxaca (1973).

line. In order to explain the dynamics we have not included any event (e.g., the head being laid-off or getting divorced) because this would require a more in-depth analysis beyond the scope of this paper. However, note that by controlling for initial characteristics we are indirectly capturing the effects of those events that are most strongly associated with them (for example, if those with no education are more prone to losing their jobs).

We estimated the probability of a person being poor (entering into poverty) with all explanatory variables collected at the household level. In other words, each household is replicated m times in the regression, where m is the household size. The reason for this is that poverty is usually measured as the proportion of individuals (not households) below the poverty line, while the poverty status of any person is determined according to his/her household income. Because of this specification, the standard i.i.d. assumption is violated due to correlation within households (clusters). For this reason, following Cappellari and Jenkins (2004), robust variance estimators were computed, allowing for arbitrary correlation between observations within the same sample cluster, while assuming independence across clusters.

The simple econometric specification proposed here allows us to identify the statistical association between the probability of being poor (entering into poverty) and each household attribute, when the other characteristics are controlled for. However, we should be cautious in interpreting the results, as no control for possible endogeneity sources was made, and no causal relationship can be assessed. In this context, the head-count ratio of poverty (entry poverty rate) in group g, H^g, is equal to the average predicted probability for this group (with population N^g):

$$H^g = \overline{P^g} = \overline{F(X_i^g \beta^g)} = \frac{1}{N^g} \sum_{i=1}^{N^g} F(X_i^g \beta^g) \tag{2}$$

Based on this, we are able to break the observed differential in poverty (entry) rates among two given groups 0, the reference, and 1, the target group

$$H^1 - H^0 = \overline{P^1} - \overline{P^0} = \overline{F(X^1 \beta^1)} - \overline{F(X^0 \beta^0)} \tag{3}$$

into two distinct terms

$$H^1 - H^0 = \left[\overline{F(X^1 \beta^1)} - \overline{F(X^0 \beta^1)} \right] + \left[\overline{F(X^0 \beta^1)} - \overline{F(X^0 \beta^0)} \right] \tag{4}$$

The first term is the *aggregate characteristics (explained) effect* that results from shifting the characteristics of the target group to those of the reference group. This indicates the gap that would be gone if both groups shared, on average, the same characteristics. The second term is the *aggregate coefficients (unexplained) effect*. This results from shifting the coefficients of the reference group to those of the target group. This component, which can be interpreted as the conditional gap, is associated with characteristics having different impacts on the poverty risk (entry) of each group. There is wide consensus in the literature about this type of decomposition and there is nothing special about the fact that we use non-linear probability regressions (non-linear F).

The evaluation of the individual contribution of each variable to the total explained difference, the detailed decomposition, is more complicated because of the non-linearity of F (there is not a unique procedure). Here, we followed the linear approximation proposed by Even and

Macpherson (1990, 1993) and Yun (2004). Then, $W_{\Delta X}^k = \frac{(\bar{X}_k^0 - \bar{X}_k^1)\beta_k^1}{(\bar{X}^0 - \bar{X}^1)\beta^1}\left[\overline{F(X_i^1\beta^1)} - \overline{F(X_i^0\beta^1)}\right]$ is the individual contribution of characteristic k (k=1,..., K) to the characteristics effect, while $W_{\Delta\beta}^k = \frac{\bar{X}_k^0(\beta_k^0 - \beta_k^1)}{\bar{X}^0(\beta^0 - \beta^1)}\left[\overline{F(X_i^0\beta^1)} - \overline{F(X_i^0\beta^0)}\right]$ is its contribution to the coefficients effect. To prevent the identification problem associated with the detailed decomposition of the coefficients effect (the results for categorical variables depend on which is the omitted category, Oaxaca and Ransom 1999), we use the normalization of coefficients proposed in Yun (2005, 2008). Reported standard errors are based on the Delta method.

This technique has a few advantages over other proposed methods that appear in the literature. First, the weights are quite transparent and simple to compute, because this only requires estimates of the coefficients and sample means for the characteristics. Second, this procedure overrides the problem of path dependency that is common to all sequential approaches to non-linear models, in which values of characteristics and/or coefficients of one group need to be switched with those of the other group. Third, unlike these sequential approaches, the detailed characteristics effect can be obtained without making any assumptions to match individuals of one group with the characteristics of another. Finally, the original Oaxaca-Blinder approach is shown to be a particular case of this decomposition when *F* is a linear function.

4   Results

4.1   Explaining the differential

In this section, we investigate the extent to which the differential in terms of the risk of being in and falling into poverty differs across ethnic groups. The results are reported in Table 2 for two samples: the 2008 cross-section and the 2008/10-11 balanced panel. The former gives us a more accurate estimation of the contribution of each characteristic to the gap in poverty rates in 2008. The latter allows us to produce the decomposition differentiating between persistent and temporary poverty, and to investigate the flows into poverty. However, this is done at the price of having a sample that could be biased because of attrition, thus emphasizing the importance of comparing the results for poverty rates in 2008 in both samples (which in general provide similar results).

It turns out that the Xhosa and the Zulu, having a higher prevalence of those characteristics more closely associated with poverty, can explain most of the gaps in ethnic poverty rates in 2008, or more specifically, 15.6 and 18.7 percentage points, respectively (or 82 per cent and 90 per cent of the corresponding gap). Thus, these differentials are not mainly the result of these groups having different poverty risks associated with them. In fact, the remaining unexplained part (3.5 and 2.2) that would prevail if all groups shared the same characteristics is statistically insignificant in both cases. However, the proportion that is explained increases when it comes to explaining persistent poverty, and substantially decreases in cases of temporary poverty. In fact, higher temporary poverty among the Xhosa remains fully unexplained, while only a half of the differential for the Zulu is explained. This means that the association between characteristics in 2008 and poverty rates happens mostly through the persistent poor (about 70 per cent of those poor in 2008) rather than through the temporary poor (the remaining 30 per cent).

Regarding which characteristics explain the poverty gaps, as happened in the case of the black-white differential (Gradín 2013), these are the result of the accumulation of inequalities across different dimensions, and even if there are some common patterns for the Xhosa and Zulu, some remarkable differences arise. The gap in attained education is a fundamental factor in explaining higher poverty among both the Xhosa and Zulu (more than 4 percentage points or

about a fifth of the observed gap) because the distribution of attained education for these groups is similar, with both showing a lower proportion of adults with secondary school completed compared with Sotho and Tswana. Education helps to explain both higher persistent and temporary poverty in the case of the Zulu, but only higher persistent poverty among the Xhosa.

The lower proportion of the Xhosa and, especially, the Zulu residing in formal urban areas also explains a significant share of their poverty gaps. However, the gap that is explained by groups diverging in their type of location varies substantially depending on the nature of poverty that is analysed. Location explains approximately a third of the gap (about 4.5 percentage points) in persistent poverty in each case. However, the negative sign of the effect associated with the differential in temporary poverty in both cases indicates that if all groups had the same distribution by type of location, temporary poverty should be even higher because living in tribal areas substantially increases the likelihood of being persistent poor but strongly reduces the risk of being temporary poor. As a result, if we looked at the differential effect in the case of poverty rates, the importance of location might be underestimated, especially for the Xhosa, compared with focusing on persistent poverty.

Furthermore, the higher number of children in Zulu households explains most of the gap for this group (more than 8 percentage points or 40 per cent of the gap). This factor is also important in the case of the Xhosa, but to a lesser extent (3 percentage points or 15 per cent of the gap). In both cases, the number of children is associated with persistent rather than with temporary poverty. The situation of the Xhosa in the labour market turns out to be more important in explaining the differential of poverty rates for this group (5.4 percentage points or 28 per cent of the gap). This factor is also important, at 3.6 percentage points or 17 per cent of the gap, for the Zulu. The higher proportion of Xhosa dependent adults is due to their lower labour force participation rate. In both groups, the labour situation in 2008 helps to more effectively explain the differential in the case of persistent poverty (especially evident for the Zulu).

Other factors tend to be less relevant and statistically insignificant in most cases. There are, however, a few exceptions. A higher proportion of Xhosa and Zulu people live in female-headed households, but this factor helps to explain nearly 1 percentage point of the higher poverty rate only for the Xhosa. The lower proportion of Zulu living in households with a married head explains 0.5 percentage points of their higher poverty rate, mainly persistent poverty. However, the higher proportion of Xhosa living with a widow(er)/separated/divorced head and the lower proportion of those whose head lives with a partner, jointly explain -0.9 percentage points of the gap in persistent poverty rates. That is, the gap would be higher after equalizing these proportions with those of the reference group. Similarly, the generally higher age of Zulu household heads explains -1.4 percentage points of the gap in persistent poverty, but helps to explain 1.2 percentage points of their higher temporary poverty.

Table 2: Decomposition of the African ethnic poverty gap, 2008-10/11

	Xhosa					Zulu				
	Cross-section Poor 2008	Panel Poor 2008	Persistent poor	Temporary poor	Entry rate	Cross-section Poor 2008	Panel Poor 2008	Persistent poor	Temporary poor	Entry rate
Target group	60.7 (2.0)	60.9 (2.2)	43.3 (2.3)	17.6 (1.7)	38.7 (3.3)	62.5 (1.7)	63.6 (1.8)	44.9 (2.0)	18.7 (1.6)	33.7 (2.5)
Sotho/Tswana	41.6 (1.8)	43.0 (2.0)	30.1 (1.8)	12.9 (1.3)	23.2 (2.1)	41.6 (1.8)	43.0 (2.0)	30.1 (1.8)	12.9 (1.3)	23.2 (2.1)
Differential	19.1 (2.7)	17.9 (3.0)	13.2 (2.9)	4.7 (2.1)	15.4 (3.8)	20.9 (2.4)	20.7 (2.6)	14.9 (2.7)	5.8 (2.1)	10.5 (3.2)
Unexplained	3.5 (2.1)	2.1 (2.3)	-1.9 (2.1)	4.4 (2.7)	10.9 (3.4)	2.2 (2.0)	2.9 (2.2)	1.1 (2.1)	2.1 (2.2)	-0.2 (2.9)
Explained	15.6 (2.3)	15.9 (2.5)	15.1 (2.6)	0.3 (1.9)	4.6 (3.5)	18.7 (2.2)	17.8 (2.3)	13.8 (2.3)	3.6 (1.7)	10.7 (2.9)
Location	2.2 (1.1)	2.0 (1.3)	4.4 (1.1)	-0.5 (2.5)	-0.2 (0.8)	4.1 (1.2)	5.0 (1.4)	4.6 (1.5)	-0.8 (1.6)	2.3 (1.2)
Demographic	4.2 (1.6)	3.3 (1.8)	1.0 (1.4)	0.2 (1.5)	0.1 (1.5)	7.1 (1.6)	5.6 (1.7)	3.2 (1.6)	0.9 (1.2)	3.9 (1.9)
Marital status	0.0 (0.4)	0.1 (0.6)	-0.9 (0.4)	0.2 (0.9)	-0.3 (0.5)	0.5 (0.3)	0.3 (0.3)	0.4 (0.3)	-0.2 (0.3)	2.1 (1.0)
Immigration	0.9 (1.0)	0.7 (1.1)	-0.1 (0.7)	0.1 (0.5)	0.5 (0.6)	-0.7 (0.8)	-1.3 (0.9)	-1.2 (0.9)	0.0 (0.8)	0.2 (0.9)
Head sex	0.8 (0.5)	0.7 (0.5)	0.6 (0.4)	0.0 (0.0)	0.0 (0.4)	0.1 (0.3)	0.0 (0.4)	0.2 (0.3)	-0.1 (0.4)	0.0 (0.3)
Head age	0.1 (0.4)	0.0 (0.5)	-0.5 (0.4)	0.2 (1.3)	-0.4 (0.5)	-0.5 (0.5)	-0.9 (0.6)	-1.4 (0.6)	1.2 (0.6)	0.5 (0.4)
No. of children	2.9 (1.1)	2.5 (1.1)	2.1 (1.0)	-0.1 (0.6)	1.1 (1.0)	8.4 (1.4)	8.4 (1.5)	5.9 (1.2)	-0.3 (0.7)	1.6 (1.3)
No. of adults	-0.5 (0.4)	-0.8 (0.7)	0.0 (0.2)	-0.1 (0.6)	-0.8 (0.9)	-0.8 (0.7)	-1.0 (0.8)	-0.7 (0.9)	0.3 (0.8)	-0.6 (0.5)
Labour	5.4 (1.3)	6.1 (1.4)	2.6 (1.1)	0.6 (3.3)	0.6 (1.8)	3.6 (1.2)	3.0 (1.5)	3.2 (1.3)	0.1 (1.2)	1.0 (1.2)
Education	4.2 (1.2)	4.8 (1.3)	5.3 (1.4)	-0.1 (0.3)	2.7 (2.1)	4.3 (1.2)	4.6 (1.6)	3.2 (1.6)	2.5 (1.5)	1.3 (1.3)
Other	-0.4 (0.3)	-0.3 (0.3)	1.8 (1.2)	0.0 (0.2)	1.4 (1.6)	-0.4 (0.2)	-0.5 (0.3)	-0.4 (0.6)	0.9 (0.6)	2.2 (1.2)
Quarter	-0.4 (0.3)	-0.3 (0.3)	2.1 (1.2)	-0.2 (0.9)	0.4 (1.4)	-0.4 (0.2)	-0.5 (0.3)	-0.5 (0.5)	1.1 (0.6)	0.7 (0.8)
Time			-0.3 (0.6)	0.1 (0.8)	-0.4 (0.6)			0.1 (0.2)	-0.2 (0.2)	0.4 (0.5)
Distance					1.4 (1.0)					1.1 (0.9)

Note: Delta standard errors in parenthesis.

Source: own estimation using NIDS (2008, 2010/11).

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Controlling for the time of the interview was actually important only in a few cases. The quarter in which income was measured explains approximately 2 percentage points of the higher persistent poverty rates of the Xhosa. In the case of the Zulu, the contribution of this factor to the gap in poverty rates is negative (-0.4 percentage points) in the cross-section but positive (1 percentage point) in explaining their higher rate of temporary poverty.

The detailed coefficients effects were computed but are not reported because they turned out to be statistically insignificant in almost all cases. This might be due to the problem of identification between the effects of the intercept and those of the covariates. In fact, after applying the correction mentioned in the methodological section (such as there is no omitted category), most of the effects are concentrated in the intercept, which could be interpreted as coming from unobservable characteristics differing by group.

We have also analysed the extent to which entry and exit poverty rates differ by ethnicity. As mentioned previously, while exit rates are similar across groups, there is a substantial gap in entry rates. A decomposition of these last differentials shows that it can be concluded that the higher entry rate of the Zulu (about 10 percentage points) is the result of a compositional effect; that is, the entire gap is explained by them having a higher prevalence of those characteristics that make people more vulnerable to entering poverty. Among them, the most important seem to be location and head's marital status (above 2 percentage points each out of 10), as well as the number of children (1.6 percentage points). That is, nearly 60 per cent of the Zulu higher risk of falling into poverty is associated with the group's lower proportion of people living in formal urban areas and in households with more children, and whose heads are married, because these factors are associated with a significantly lower risk of a Zulu entering poverty. The shorter distance, on average, to the poverty line, and the timing of the interviews (quarter and time span) jointly explain an additional approximate 2.2 percentage points. The remaining gap is explained by the weaker attachment of the Zulu to the labour market (1 percentage point) and their lower attained education (1.3 percentage points), but is not statistically significant (after having controlled for the distance to the poverty line).

Surprisingly, the flow into poverty seems to be very different in the case of the Xhosa. The gap in entry poverty rates is higher, at 15.4 percentage points, and only 4.6 (30 per cent) is the result of a compositional effect. Even this amount is with extremely high standard errors, so that neither the global explained effect nor any detailed effect is statistically significant. Thus, it can be concluded that their higher probability of falling into poverty is explained by a higher risk associated with the relevant characteristics (especially the number of children and marital status, whose coefficient effects are statistically significant and jointly account for 10 percentage points, two-thirds of the gap). This means that a different profile of Xhosa and Sotho/Tswana people fell into poverty between 2008 and 2010/11.

4.2   Trends

In order to analyse the post-apartheid trend, we undertake the decomposition of the ethnic poverty gap using the cross-sections of PSLSD, with income collected in 1993 right before the general elections that put an end to apartheid, and NIDS 2008. We exclude from the income definition the two components that are potentially less comparable: own-home imputed rent and income from agriculture. Poverty rates in 2008, as shown in Table 3, are therefore higher using this restricted definition of income than those reported in the previous section (about 5.2 percentage points for the Xhosa, 6.5 for the Zulu, and 8 for the Sotho/Tswana). The differential in poverty rates is of 16.4 and 19.5 percentage points, respectively, for the Xhosa and Zulu. For the decomposition, we concentrate the analysis on those variables that were available in both surveys, thus excluding the head's literacy in education, while the migration status only takes into

account whether or not the head migrated during the last five years. Location in 1993 distinguishes between urban, rural and metropolitan areas.

Between 1993 and 2008, the point estimates of the differential in poverty rates increased for the Zulu by approximately 6 percentage points, and to a much lower extent for the Xhosa, at 1.1. However, the high standard errors do not allow for the conclusion that any of these increases were statistically significant. The reason behind this larger increase for the Zulu lies in the contribution of children, which significantly increased from a contribution of 2.8 percentage points of the gap in 1993 to 8.2 in 2008. This is so not because an increasing gap in the number of children across groups, but because of an increasing association of this factor with higher poverty after the end of apartheid for all groups, but especially for the Zulu. It also turns out that since the end of apartheid, the role of the labour market substantially decreased because the dependency ratio, for example, became less relevant for poverty while at the same time the ethnic gap in this ratio was reduced. On the contrary, the importance of the ethnic differential in attained education and, to a lesser extent, location, increased in terms of explaining poverty for both groups. The association between education and poverty, and the inter-group differential in this factor, both increased.

Table 3: Decomposition of the African ethnic poverty gap, 1993-2008

| | Xhose | | | | Zulu | | | |
	1993		2008		Δ	1993		2008		Δ
Target group	75.9	(1.1)	65.9	(1.9)	-10.0	74.0	(1.1)	69.0	(1.5)	-5.0
Sotho/Tswana	60.6	(1.4)	49.5	(1.9)	-11.1	60.6	(1.4)	49.5	(1.9)	-11.1
Differential	15.3	(1.8)	16.4	(2.6)	1.1	13.4	(1.8)	19.5	(2.4)	6.1
Unexplained	2.9	(1.9)	2.0	(2.2)	-1.0	4.1	(1.7)	1.5	(2.0)	-2.6
Explained	12.4	(1.5)	14.4	(2.1)	2.1	9.3	(1.4)	18.0	(2.1)	8.7
Location	0.8	(0.4)	2.5	(1.0)	1.7	0.9	(0.4)	4.0	(1.1)	3.0
Demographic	1.5	(0.8)	2.9	(1.3)	1.4	1.6	(0.9)	8.0	(1.4)	6.3
Marital status	-0.1	(0.3)	0.2	(0.5)	0.3	0.0	(0.2)	0.6	(0.3)	0.6
Immigration	-0.4	(0.3)	-0.3	(0.4)	0.1	0.1	(0.1)	-0.2	(0.2)	-0.2
Head sex	0.5	(0.3)	0.8	(0.5)	0.2	0.2	(0.2)	0.3	(0.3)	0.1
Head age	-0.3	(0.3)	0.6	(0.5)	0.9	-0.5	(0.4)	0.3	(0.5)	0.8
No. of children	1.9	(0.7)	2.5	(1.0)	0.6	2.8	(1.7)	8.2	(1.4)	5.4
No. of adults	-0.2	(0.2)	-0.7	(0.7)	-0.6	-0.9	(0.6)	-1.2	(0.7)	-0.3
Labour	9.9	(1.2)	5.8	(1.4)	-4.1	6.5	(0.9)	2.7	(1.0)	-3.8
Education	0.5	(0.3)	3.7	(1.0)	3.2	0.2	(0.5)	3.6	(0.8)	3.3
Other (quarter)	-0.3	(0.5)	-0.5	(0.4)	-0.2	0.1	(0.1)	-0.2	(0.2)	-0.2

Note: Income without own-home imputed rent and income from agriculture. Set of variable restricted to those available in 1993. Delta standard errors in parenthesis.

Source: Own estimation using PSLSD (1993) and NIDS (2008).

5 Concluding remarks

This paper has investigated inequalities across the main black ethnic groups in South Africa, a population that accounts for nearly 80 per cent of the country's total population. Understanding these inequalities might be important for gaining a better knowledge of income distribution in this highly unequal society with such a long history of racial and ethnic segregation and discrimination along all possible dimensions of life. We have shown that there is indeed an important ethnic gap in the poverty levels of the Xhosa and the Zulu with respect to the

Sotho/Tswana. We have also shown that these gaps are largely associated with the Xhosa and the Zulu having an accumulation of disadvantages in location, demographic structure, education and labour market outcomes. Some characteristics are common to both groups (e.g., more rural population, lower attained education), some are more important for the Xhosa (e.g., lower employment) and some more important for the Zulu (e.g., higher numbers of children). We have described the importance of taking into consideration the different time-poverty profiles. Higher persistent poverty is much more effectively explained than higher temporary poverty in both groups. Most characteristics are more important in explaining the gap in persistent poverty (e.g., location, number of children, education) but some are also important for temporary poverty (e.g., lower employment). In addition, the role of some characteristics, especially location, might be better understood using panel data because having a population that is more rural generally increases the risk of persistent poverty while reducing the likelihood of temporary poverty.

The analysis of the evolution of South African society after the end of apartheid indicates that the gap might have increased, especially in the case of the Zulu. It also shows that its nature substantially changed for both groups, with increasing relevance of the gap in education and in different locations, while decreasing the role of the labour market outcomes. However, the most distinctive factor for the Zulu was the increasing relevance of the number of children in explaining their higher poverty.

Higher poverty seems to be induced by a higher risk of falling into poverty, and this is fully explained by the higher prevalence of those characteristics that are associated with that risk in the case of Zulu. However, the higher entry rate of Xhosa remains unexplained. This might be associated with their specific location in the Eastern Cape and the opportunities that this ethnicity face, but in order to understand that, it would deserve a more in-depth analysis of the trigger events.

Although no causality can be claimed in this partial-equilibrium exercise undertaken here, those factors with higher relevance in explaining poverty differentials are expected to indicate characteristics, which if equalized among groups, would produce the largest reduction in poverty levels of the target groups. Along this line, one specific implication of the paper is that the results suggest that extending to all Africans the progress made by some ethnicities in terms of individual and households characteristics, might have a large potential reduction in their poverty levels. This is definitely more realistic an exercise than equalizing the characteristics of Africans with those of whites that, although fair enough, will take a much longer time.

Appendix

Appendix Table A1: Summary statistics of explicative variables: average values (%) in NIDS (2008)

	Xhosa	Zulu	Sotho/ Tswana	Other African	African
Rural formal	1.8	7.6	7.4	5.9	5.8
Tribal authority area	46.3	47.3	22.1	48.1	42.5
Urban formal	38.8	25.3	60.6	35.7	38.1
Urban informal	13.2	19.8	9.9	10.4	13.7
Married head	40.4	33.9	41.3	47.1	40.7
Head living with partner	7.9	12.0	12.6	9.3	10.4
Head widow(er)/divorced/separated	26.0	23.0	20.3	18.2	21.7
Head never married	25.6	31.1	25.8	25.4	27.2
Head immigrant status missing	2.6	4.2	4.3	10.8	5.9
Non-immigrant head	50.5	49.2	24.5	32.6	39.7
Immigrant head (South A.)	46.6	44.9	68.7	50.7	51.6
Immigrant head (abroad)	0.2	1.7	2.6	6.0	2.9
Non-migrant head (5 years)	90.0	88.6	83.1	84.3	86.5
Migrant head (5 years)	10.0	11.4	16.9	15.7	13.5
Male head	46.8	43.7	53.0	49.5	47.9
Female head	53.2	56.3	47.0	50.5	52.1
Head aged 15-24	4.8	4.9	5.5	5.7	5.2
Head aged 25-55	63.7	59.9	72.0	66.8	65.1
Head aged 56+	31.5	35.2	22.6	27.5	29.7
No. of children 0-5	0.9	1.1	0.8	0.8	0.9
No. of children 6-14	1.4	1.6	1.1	1.2	1.3
No. of adults	3.2	3.9	3.0	3.3	3.4
Head labour st. missing	8.1	13.2	9.5	16.2	12.3
Economically active head	43.4	29.7	24.4	33.4	32.8
Unemployed head	12.4	12.2	15.6	11.0	12.5
Employed head (other)	26.5	31.7	37.9	27.2	30.4
Self-employed head	5.5	8.1	8.4	8.0	7.6
Casual-employed head	4.2	5.1	4.3	4.2	4.5
Dependency ratio	0.6	0.6	0.5	0.6	0.6
Occupation missing	77.1	77.3	67.5	75.6	74.9
Manager	4.6	3.6	6.2	6.6	5.2
Clerk	2.2	1.5	3.6	2.2	2.3
Service workers	4.9	4.6	6.0	3.8	4.7
Skilled agricultural	1.1	2.7	2.7	1.8	2.1
Craft and related trade	6.2	4.8	8.6	5.9	6.1
Plant and machinery	3.9	5.5	5.4	4.2	4.8
Head none education	21.7	27.4	14.8	24.6	22.9
Head grade1-7	32.0	36.7	30.7	23.5	30.6
Head grade 8-11	31.2	24.0	29.5	28.9	28.1
Head completed high school	15.1	11.9	25.0	23.0	18.4
Literacy reading (home lang.)	1.9	1.8	1.6	1.7	1.8
Literacy writing (home lang.)	1.9	1.9	1.6	1.7	1.8
Literacy reading (English)	2.4	2.5	2.1	2.1	2.3
Literacy writing (English)	2.4	2.5	2.1	2.1	2.3
Household mean with high sc.	16.8	18.8	28.6	27.1	22.8

Source: Own construction using NIDS (2008).

Appendix Table A2: Logit regressions of the probability of being poor across African ethnic groups in South Africa, 2008

	Xhosa		Zulu		Sotho/Tswana	
	Coef.	SE	Coef.	SE	Coef.	SE
Rural formal	0.383	0.317	-0.221	0.232	-0.220	0.280
Tribal authority area	-0.058	0.216	0.629	0.168	0.510	0.209
Urban formal	-0.817	0.212	-0.387	0.174	-0.359	0.173
Urban informal	0.492	0.274	-0.021	0.237	0.069	0.258
Head living with partner	-0.341	0.347	-0.157	0.190	0.426	0.276
Head widow(er)/divorced/separated	-0.254	0.247	0.142	0.194	-0.303	0.195
Head never married	0.348	0.214	0.269	0.174	0.348	0.183
Non-immigrant head	0.025	0.341	0.232	0.230	-0.065	0.263
Immigrant head (South A.)	-0.410	0.326	0.387	0.229	-0.107	0.236
Immigrant head (abroad)	1.380	0.818	0.014	0.440	-0.275	0.487
Non-migrant head (5 years)	-0.085	0.247	-0.161	0.162	0.117	0.157
Migrant head (5 years)	0.085	0.247	0.161	0.162	-0.117	0.157
Male head	-0.491	0.152	-0.040	0.117	-0.114	0.120
Female head	0.491	0.152	0.040	0.117	0.114	0.120
Head aged 15-24	-0.055	0.395	0.021	0.342	-0.345	0.315
Head aged 25-55	0.006	0.231	0.120	0.200	0.321	0.186
Head aged 56+	0.049	0.274	-0.141	0.230	0.024	0.228
Not economically active head	-1.006	0.655	0.351	1.074	-0.866	0.581
Economically active head	0.018	0.272	-0.555	0.312	-0.180	0.249
Unemployed head	-0.437	0.394	-0.031	0.366	0.164	0.276
Employed head (other)	-0.122	0.302	0.049	0.291	-0.025	0.243
Self-employed head	-0.249	0.530	-0.494	0.374	-0.235	0.339
Casual-employed head	1.796	0.533	0.680	0.368	1.141	0.362
Head: Elementary occupation or missing	0.038	0.335	1.580	0.244	1.133	0.286
Head: Manager, professional, technician	-0.537	0.593	-1.306	0.556	-0.924	0.710
Head: Clerk	0.958	0.739	-2.056	0.710	-0.775	0.632
Head: Service workers	-0.727	0.466	0.848	0.440	0.013	0.449
Head: Skilled agricultural	0.631	0.460	1.060	0.477	0.464	0.512
Head: Craft and related trade	-0.087	0.537	0.141	0.352	-0.132	0.380
Head: Plant and machinery	-0.276	0.579	-0.267	0.378	0.221	0.526
Dependency ratio	3.907	0.524	2.214	0.328	3.140	0.394
No. of children 0-5	0.750	0.205	0.690	0.126	0.633	0.118
No. of children 6-14	0.426	0.108	0.643	0.083	0.661	0.104
No. of adults	-0.187	0.079	-0.064	0.059	-0.187	0.082
Head none education	0.423	0.304	0.319	0.213	0.702	0.260
Head grade1-7	0.256	0.217	0.285	0.171	0.247	0.180
Head grade 8-11	0.033	0.225	-0.187	0.178	-0.665	0.190
Head completed high school	-0.713	0.401	-0.416	0.318	-0.284	0.300
Household mean with high school	-1.612	0.644	-1.130	0.536	-1.401	0.444
Head: Literacy reading (home lang.)	-0.358	0.426	-0.382	0.360	-0.615	0.326
Head: Literacy writing (home lang.)	0.234	0.426	0.380	0.318	0.489	0.332
Head: Literacy reading (English)	-0.558	0.490	-0.098	0.303	0.700	0.403
Head: Literacy writing (English)	0.734	0.491	0.231	0.289	-0.695	0.398
Interview 1st Quarter	0.284	0.271	-0.101	0.153	0.212	0.216
Interview 2nd Quarter	-0.019	0.271	0.275	0.138	-0.265	0.223
Interview 3rd-4th Quarter	-0.265	0.489	-0.174	0.212	0.053	0.371
Intercept	-1.464	0.611	-3.592	0.649	-2.754	0.604
Pseudo R2	0.428		0.412		0.417	
N. observations	4,260		8,196		4,409	

Note: Normalized coefficients.

Source: Own construction using NIDS (2008).

Appendix Table A3: Logit regressions across African ethnic groups in South Africa, NIDS 2008-10 panel

	Poor in 2008						Persistent poor						Temporary poor						Entry into poverty					
	Xhosa		Zulu		Sotho/Tswana		Xhosa		Zulu		Sotho/Tswana		Xhosa		Zulu		Sotho/Tswana		Xhosa		Zulu		Sotho/Tswana	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Rural formal	0.442	0.395	-	0.242	-	0.308	-	0.697	0.344	0.255	-	0.284	1.188	0.653	-	0.372	-	0.339	0.098	0.562	0.042	0.356	0.239	0.364
Tribal authority area	0.016	0.264	0.605	0.171	0.563	0.231	1.356	0.319	1.050	0.168	0.252	0.206	-	0.324	-	0.190	0.488	0.218	-	0.324	0.261	0.247	-	0.284
Urban formal	-	0.244	-	0.186	-	0.194	-	0.300	-	0.207	-	0.195	-	0.316	-	0.243	0.012	0.242	-	0.280	-	0.260	-	0.239
Urban informal	0.352	0.322	-	0.263	0.152	0.285	-	0.371	-	0.275	0.265	0.251	0.530	0.324	0.907	0.262	-	0.318	0.656	0.417	0.122	0.318	0.366	0.320
Head living with partner	0.328	0.250	-	0.174	-	0.203	-	0.208	-	0.155	-	0.207	0.206	0.227	0.031	0.201	-	0.236	0.198	0.273	-	0.272	-	0.246
Head widow(er)/divorced/separated	-	0.433	0.059	0.228	0.408	0.297	0.759	0.311	-	0.241	0.245	0.282	-	0.419	0.143	0.333	0.102	0.291	0.134	0.428	0.672	0.351	1.035	0.327
Head never married	-	0.263	0.078	0.201	-	0.220	-	0.235	0.011	0.197	-	0.218	0.345	0.272	0.015	0.244	-	0.283	-	0.342	0.213	0.291	-	0.288
Non-immigrant head	-	0.557	-	0.384	0.244	0.425	-	0.492	-	0.354	-	0.454	0.070	0.500	0.214	0.452	0.834	0.609	-	0.748	0.623	0.560	0.828	0.658
Immigrant head (South A.)	0.381	0.324	0.171	0.214	-	0.259	0.219	0.277	0.134	0.194	-	0.264	-	0.294	0.007	0.250	-	0.369	0.231	0.411	-	0.312	-	0.386
Immigrant head (abroad)	0.172	0.307	0.382	0.242	-	0.231	0.104	0.281	0.609	0.222	0.229	0.252	-	0.310	-	0.271	-	0.312	0.050	0.418	-	0.339	-	0.348
Non-migrant head (5 years)	-	0.300	-	0.201	0.067	0.178	-	0.252	0.070	0.207	0.060	0.195	0.302	0.206	-	0.261	0.083	0.201	0.108	0.253	0.391	0.256	0.486	0.214
Migrant head (5 years)	0.068	0.300	0.241	0.201	-	0.178	0.335	0.252	-	0.207	-	0.195	-	0.206	0.255	0.261	-	0.201	-	0.253	-	0.256	-	0.214
Male head	-	0.171	-	0.123	-	0.134	-	0.162	-	0.107	-	0.133	-	0.140	0.036	0.150	0.094	0.147	-	0.200	-	0.164	-	0.163
Female head	0.481	0.171	0.019	0.123	0.086	0.134	0.510	0.162	0.091	0.107	0.206	0.133	0.003	0.140	-	0.150	-	0.147	0.384	0.200	0.006	0.164	0.103	0.163
Head aged 15-24	0.222	0.436	0.072	0.424	-	0.338	0.518	0.352	0.145	0.298	-	0.336	-	0.335	-	0.356	0.103	0.324	0.728	0.439	0.357	0.434	-	0.380
Head aged 25-55	-	0.252	0.166	0.245	0.252	0.207	-	0.198	0.261	0.178	0.379	0.183	-	0.201	-	0.217	-	0.206	-	0.281	-	0.240	0.232	0.226
Head aged 56+	-	0.294	-	0.256	-	0.248	-	0.246	-	0.203	-	0.252	0.709	0.263	0.426	0.228	0.168	0.258	-	0.331	0.155	0.310	0.377	0.300
Not economically active head	-	0.724	1.337	1.423	-	0.590	-	1.664	2.049	1.185	-	0.519	0.623	1.275	-	1.222	-	0.618	-	1.545	-	1.117	-	0.783
Economically Active head	0.022	0.290	-	0.354	-	0.278	-	0.402	-	0.309	-	0.254	0.127	0.356	-	0.330	0.150	0.292	0.137	0.473	-	0.369	0.257	0.330
Unemployed head	-	0.410	-	0.430	0.131	0.299	-	0.437	-	0.434	0.138	0.297	-	0.411	0.220	0.436	0.074	0.307	0.448	0.500	-	0.524	0.115	0.449
Employed head (other)	-	0.331	-	0.357	-	0.261	-	0.456	-	0.306	-	0.274	-	0.419	0.202	0.341	0.266	0.338	0.817	0.455	-	0.348	-	0.306
Self-employed head	-	0.577	-	0.439	-	0.340	0.406	0.661	-	0.380	-	0.403	-	0.512	0.454	0.420	0.529	0.361	0.511	0.561	0.173	0.415	1.211	0.401
Casual-employed head	1.930	0.619	0.482	0.453	1.256	0.431	1.788	0.692	-	0.360	1.189	0.484	0.187	0.508	0.395	0.502	0.181	0.552	1.632	0.724	1.835	0.493	1.214	0.504
Head: Elementary occupation or missing	0.238	0.350	1.110	0.241	0.744	0.270	0.036	0.381	0.962	0.216	0.654	0.319	0.400	0.384	0.460	0.308	0.241	0.358	0.527	0.352	0.399	0.280	0.097	0.355
Head: Clerks, Service workers	-	0.468	-	0.400	-	0.355	-	0.493	-	0.328	-	0.445	-	0.742	0.031	0.562	-	0.538	-	0.597	-	0.421	0.104	0.389
Head: Skilled agricultural	0.305	0.474	0.378	0.474	-	0.496	1.086	0.602	0.608	0.425	-	0.502	-	0.754	0.043	0.511	0.628	0.579	-	0.735	1.467	0.603	-	0.671
Head: Craft and related trade	0.184	0.536	-	0.353	-	0.361	0.305	0.519	-	0.322	-	0.496	0.385	0.469	0.082	0.563	0.435	0.417	1.126	0.456	-	0.557	-	0.409
Head: Plant and machinery	0.048	0.596	-	0.367	0.594	0.397	-	0.655	-	0.395	0.338	0.613	1.100	0.522	-	0.485	0.220	0.547	-	0.482	-	0.396	0.087	0.555
Dependency ratio	3.617	0.554	2.084	0.344	3.287	0.424	2.689	0.469	1.003	0.345	2.216	0.465	1.194	0.531	1.170	0.436	2.016	0.530	2.171	0.524	0.420	0.443	1.283	0.527
No. of children 0-5	0.801	0.205	0.651	0.124	0.636	0.127	0.945	0.188	0.436	0.095	0.697	0.129	-	0.147	-	0.098	-	0.157	0.651	0.227	1.281	0.196	0.435	0.177
No. of children 6-14	0.327	0.116	0.591	0.082	0.678	0.112	0.353	0.107	0.441	0.080	0.511	0.102	-	0.149	-	0.085	0.106	0.112	0.340	0.162	0.532	0.160	-	0.141
No. of adults	-	0.084	-	0.061	-	0.094	-	0.091	-	0.066	-	0.091	-	0.082	0.027	0.070	-	0.091	-	0.094	-	0.096	-	0.118
Head none education	0.612	0.337	0.302	0.211	0.848	0.288	0.801	0.336	0.058	0.243	1.047	0.293	0.042	0.386	0.234	0.265	-	0.331	0.039	0.479	0.434	0.349	0.416	0.407
Head grade1-7	0.338	0.235	0.295	0.179	0.283	0.195	0.569	0.279	0.246	0.190	-	0.202	-	0.254	0.243	0.217	0.451	0.233	0.366	0.299	0.348	0.280	-	0.272
Head grade 8-11	0.026	0.251	-	0.204	-	0.215	0.454	0.263	-	0.208	-	0.220	-	0.268	0.110	0.269	0.136	0.242	0.210	0.350	-	0.272	-	0.260
Head completed high school	-	0.463	-	0.322	-	0.315	-	0.648	-	0.351	-	0.327	0.188	0.610	-	0.420	-	0.402	-	0.502	-	0.483	-	0.446
Hhld mean with high school	-	0.674	-	0.546	-	0.490	-	0.773	-	0.505	-	0.564	-	0.813	0.872	0.558	0.377	0.544	-	0.804	-	0.659	-	0.616
Head: Literacy reading (home lang.)	-	0.472	-	0.336	-	0.338	0.203	0.522	-	0.212	-	0.370	-	0.512	0.123	0.277	-	0.407	-	0.846	0.213	0.530	-	0.487
Head: Literacy writing (home lang.)	0.030	0.483	0.489	0.309	0.511	0.345	-	0.525	0.306	0.236	0.316	0.379	0.308	0.532	0.033	0.275	0.227	0.381	0.395	0.831	-	0.544	0.697	0.484
Head: Literacy reading (English)	-	0.560	-	0.355	0.894	0.443	-	0.460	0.570	0.278	0.240	0.473	0.093	0.479	-	0.346	1.242	0.768	-	0.633	0.203	0.690	0.957	0.596
Head: Literacy writing (English)	0.718	0.553	0.269	0.349	-	0.449	0.609	0.451	-	0.286	-	0.457	-	0.458	0.678	0.343	-	0.782	0.863	0.597	-	0.669	-	0.613
Distance to poverty line/100																			-	0.016	-	0.016	-	0.020
Intercept	-	0.679	-	0.771	-	0.620	-	1.723	-	1.455	-	1.338	-	1.313	-	1.256	-	1.491	1.862	1.994	0.541	1.652	1.756	1.493
Pseudo R^2	0.421		0.376		0.430		0.439		0.313		0.393		0.156		0.138		0.143		0.291		0.324		0.297	
N. observations	3,200		6,924		3,593		3,200		6,924		3,593		3,200		6,924		3,593		1,264		2,178		1,796	

Notes: Normalized coefficients. Controls for the quarter of interviews and timespan between interviews were included.

Source: Own construction using NIDS (2008-10).

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