

# SUBJECTIVE WELL-BEING, REFERENCE GROUPS AND RELATIVE STANDING IN POST-APARTHEID SOUTH AFRICA

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## ABSTRACT

Previous studies on the determinants of subjective well-being concur on the importance of relative income, i.e., the fact that individuals' subjective well-being is dependent on how well they are doing in relation to their reference group. Using South African data from 1993, Kingdon and Knight (2006, 2007) found that in apartheid South Africa, reference groups were mostly divided along racial lines, i.e., individuals' relative income within their specific race group was significantly correlated with their subjective well-being. In this article, the methodology of Kingdon and Knight is repeated using data from the first wave of the National Income Dynamics Study (2008), in order to explore whether these reference groups have shifted in post-apartheid South Africa. The findings suggest that race-specific relative income is no longer significantly correlated with subjective well-being for the South African population as a whole, but rather that perceived relative income within the country matters as a significant predictor of subjective well-being. These results seem to be in line with the hypothesis of reference groups shifting away from a racial delineation to a more inclusive one, subsequent to the racial integration which took place after 1994. However, for a sub-population within South Africa, namely those below the poverty line (who are mostly black), a race-specific reference group remains relevant. The article provides potential reasons for why this is the case.

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## INTRODUCTION

A large and growing economic literature on subjective well-being (SWB) or happiness,<sup>1</sup> as it is sometimes referred to, has evolved since the 1990s (Stutzer and Frey, 2010, p. 2). Although studies regarding subjective well-being in developed countries are numerous, corresponding literature on the topic in developing countries is only in its infancy.

Clark and Senik (2011, pp. 30–34) provide an overview of the literature on subjective well-being and its determinants in various countries in Latin America, Asia and Africa. Specifically, Clark and Senik (2011) focus on the question of relative measures of well-being (i.e., answers to the question ‘how well am I doing in comparison to my reference group?’) as significant predictors of subjective well-being. Although the results from the studies of emerging economies differ in their detail, the overall conclusion from the literature seems to be that relative well-being is an important contributor to the subjective well-being of individuals in developing countries.

Within the South African context, Kingdon and Knight (2006, 2007) explored the determinants of subjective well-being during 1993 – prior to the first democratic elections on 27 April 1994 and the subsequent new political dispensation. They found that in 1993, subjective well-being was greatly divided along racial lines – a fact that is unsurprising given the country’s history of racial segregation.<sup>2</sup> Kingdon and Knight (2007) note that relative income enters individuals’ utility functions positively for those within the same residential cluster (‘close neighbours’) and negatively for more far-off individuals (‘more distant others’). In addition, Kingdon and Knight (2006, 2007) state that relative income (calculated as the relative standing within one’s racial group) appears to affect the subjective well-being of individuals above the poverty line, while absolute income has a more important effect on the subjective well-being of individuals below the poverty line.

Since 1994, South Africa has been introduced back into the world economy and has experienced unprecedented economic growth and large-scale racial integration. However, with high and persistent levels of inequality and poverty (both of which have a lingering racial undertone) remaining part of the South African economic landscape (Leibbrandt *et al.*, 2010, p. 13; Finn *et al.*, 2012), a relevant question at this stage is whether the new political dispensation has caused any changes in the determinants of subjective well-being. In other words, do individuals still compare their income with others of the same race group? Also, if reference groups are no longer divided along racial lines, who is the relevant reference group?

The aim of this article is to attempt to answer these questions using data from the National Income Dynamics Study done in 2008, 14 years after the first democratic elections. In line with previous findings by Posel and Casale (2011), this article notes that relative standing has a significant effect on subjective well-being, more so than relative income by race group. In addition, this article reports evidence that households in closer proximity enter the individual's utility function positively, while more far-off individuals enter the utility function negatively. This is in line with the findings by Kingdon and Knight (2007).

Our results seem to indicate that at least some racial integration has taken place in the 14 years subsequent to the end of apartheid, with reference groups shifting from being solely based on race. However, some heterogeneity exists within the results. While there has been a move away from racially delineated reference groups for non-poor individuals, relative income within the race group remains a good approximation of the reference group referred to by poor black individuals.

## SUBJECTIVE WELL-BEING: THE LITERATURE

Given the large body of research on the determinants of subjective well-being, certain stylised facts have emerged throughout the years. In the first place, it has been found that richer individuals are on average more likely to report higher levels of subjective well-being. In addition, the causation has been shown to run from income to happiness (Frey and Stutzer, 2002, p. 411; Pischke, 2011). However, the positive relationship between absolute income and subjective well-being only explains a small proportion of the differences in happiness among people (Frey and Stutzer, 2002, p. 409).

In addition, this positive relationship is limited to cross-sectional rather than time-series data (Kingdon and Knight, 2006, p. 1201). This has led to the conclusion that increases in relative income have a much larger effect on subjective well-being than absolute income (Easterlin, 1995, p. 44; 2001, p. 468).

Other studies (e.g., Easterlin, 1995; Frey and Stutzer, 2002; Layard, 2006) have focused on the issue of adaptive expectations and the fact that individuals compare their lives with those of their reference groups. This has been used to explain why individuals in developed countries only experience an increase in subjective well-being up to a certain level of income.<sup>3</sup>

An independent (though related) body of research looking at the concept of social reference groups in a more structured way has also been developed by the Leyden school (including papers such as Van Praag *et al.* [1979], Kapteyn and Van Herwaarden [1980], Van Praag *et al.* [2000] and Van Praag [2010]). These authors have developed more structural ways of determining individuals' reference groups (i.e., the people to whom they compare themselves) and individuals' social reference spaces (i.e., what weight each individual within the reference group should receive to take into account that certain individuals are more influential than others).

The studies by the Leyden school are, however, focused on exploring reference groups within the European context. The literature on relative income and other correlates of subjective well-being in South Africa are discussed next.

## Research on the determinants of subjective well-being in South Africa

Within the South African context, quite a few studies have considered the determinants of subjective well-being. Møller and Saris (2001, p. 110) examined the different domains affecting subjective well-being within each race group, and found that, while income is an important domain for the determination of subjective well-being for Africans and coloureds, whites and Asians are more influenced by other domains related to family and relationships. They also note that the determinants of subjective well-being are differentiated between the different provinces.

Bookwalter and Dalenberg (2004) came to a similar conclusion: they used the Southern African Labour and Development Research Unit (SALDRU) household survey, administered in 1993, to examine the determinants of happiness for individuals in and out of poverty. They found that individuals below the poverty line view housing and transportation as the most important determinants of happiness, while those above the poverty line view sanitation, water, energy, education and health as more important. These results have important policy implications.

The structure of happiness equations and the determinants of subjective well-being in South African data have been discussed in depth by Powdthavee (2003, 2005, 2006). In terms of the structure of happiness equations, Powdthavee (2003) finds correlates with subjective well-being that are similar to those found in developed countries. These include actual as well as relative income, household living conditions as well as individual-level characteristics, such as whether an individual is unemployed as well as the age and race of the individual. Within the South African context, whether the individual has been a victim of a crime is also significantly (negatively) correlated with reported subjective well-being (Powdthavee, 2005).

Kingdon and Knight (2006) also used the 1993 SALDRU household survey to examine the determinants of subjective well-being in South Africa prior to the end of apartheid, and found that, although absolute household income and subjective well-being are positively correlated, the effect of household income on the subjective well-being of the household is not very large. In addition, Kingdon and Knight (2006, p. 1219) note that absolute income seems to matter for individuals in households below the poverty line, while relative income matters for individuals in households above the poverty line. In their research, relative income is calculated using the household's race group as reference and generating race-specific income quintiles. Kingdon and Knight (2006, p. 1220) conclude that pre-1994, subjective well-being in South Africa was divided along racial lines.

More recent studies have focused on changes in South Africans' subjective well-being subsequent to the end of apartheid. In this regard, Møller (2007a, 2007b) provides a detailed overview of the perceptions and attitudes of South Africans ten years after the 1994 democratic elections. She argues that, within a transitional economy such as South Africa (in which political liberation was introduced before economic reform), a large portion of the population was granted political rights without the necessary economic opportunities. According to Møller, this explains the increase in self-reported well-being among Africans during the time of the 1994 elections, and the subsequent decrease as basic economic needs were not met – which may be interpreted as a reflection of the economic opportunities available to individuals. This decrease in hope and optimism (as evidenced by a decrease in subjective well-being) has also been ascribed to the increase in violent crime which affected thousands of South Africans during this post-apartheid period (Louw, 2007).

In terms of reference groups within the South African context, Kingdon and Knight (2007) explore the local determinants of subjective well-being in further detail and specifically focus on the issue of reference groups within South Africa as a divided society. They report, again looking at 1993 SALDRU data, that although relative education and relative employment levels matter for subjective well-being, relative income is still the most significant determinant of subjective well-being. Relative income to other households in the same neighbourhood cluster is positively associated with subjective well-being, while relative income to more far-off others (i.e., other households in the district) is negatively associated with subjective well-being (Kingdon and Knight, 2007, p. 77). Testing this hypothesis further, they come to the conclusion that the positive effect of others' income at the cluster level is altruistic – i.e., subjective well-being is raised if other households in the same neighbourhood are doing well, while subjective well-being is diminished if those households are not doing well. On the other hand, Kingdon and Knight (2007, p. 81) note a negative effect on subjective well-being for more distant households, i.e., within the same district.

Bookwalter and Dalenberg (2010) confirm the findings of Kingdon and Knight (2007),<sup>4</sup> reporting that poorer households are more likely to perceive wealthier households as having a positive (rather than a negative) impact on well-being. They expand the definition of the reference group tested by Kingdon and Knight (2007) by testing the significance of relative income in comparison to one's parents on subjective well-being. Bookwalter and Dalenberg (2010) note that relative income, compared with that of one's parents, has a large and significant impact on subjective well-being. In their study, those individuals who perceived their own household to be wealthier than that of their parents, were much more likely to report higher levels of subjective well-being.

Although significant advances have been made in increasing the level of racial integration within South Africa post-1994, Du Toit and Kotzè (2011) point out that post-apartheid affirmative action may have had the opposite effect, namely

entrenching the racial divide brought about by apartheid legislation.<sup>5</sup> Some evidence of this breakdown in society is found in the study by Posel and Hinks (2013), who examined levels of trust in South Africa. They note that South Africans have very low levels of reported trust compared with other countries, even when looking at trust among neighbours.

In a recent work, Wolhard Kaus (2013) approaches the question of reference groups in South Africa from a different angle, by examining the issue of conspicuous consumption within different local race groups. The hypothesis is that if conspicuous (visible) consumption is a form of status-seeking behaviour in line with Veblen's signalling model,<sup>6</sup> then the introduction of the relative standing of the individual, compared to the reference group in the model, should account for all differences in conspicuous spending between race groups. After finding large and significant differences in conspicuous consumption between white and black South Africans, Kaus (2013) set out to test whether these differences can be explained by the signalling model. He did this by introducing a proxy of reference group income, using the mean provincial income of each race group as a rough proxy of reference groups. Introducing this proxy diminishes all differences in conspicuous spending in Kaus' models. Indirectly, Kaus' assumption that reference groups in South Africa remain divided along racial lines is therefore confirmed by the results.

Du Toit and Kotzè (2011, p. 131), however, highlight the fact that recent data from the 2006 World Values Survey seem to signal increased racial tolerance and interpersonal trust. Indications of racial integration seem to be borne out by the results of Timothy Hinks' (2012) study on the impact of fractionalisation within the South African context. Hinks (2012, p. 262) notes that a higher level of ethnic and linguistic fractionalisation within the household cluster is positively correlated with subjective well-being, which seems to indicate that there has been an increase in racial tolerance. Hinks (2012, p. 261) even goes so far as to describe these results as being 'consistent with a nation that enjoys diversity'.

As indicated in the introduction, the question is therefore whether the new political dispensation has had any effect on the way South Africans view their lives. In other words, have subjective well-being and the reference groups against which individuals compare themselves changed since 1993? The remainder of this article is devoted to answering this question.

## THE DATA

The data used in this analysis are from the first wave of the National Income Dynamics Study (NIDS). The survey, completed during 2008, incorporates data from just over 7 000 households, containing approximately 28 000 household members as well as data on approximately 19 000 individuals aged 14 years and older.<sup>7</sup>

The NIDS questionnaire is unique in that it contains questions aimed at gauging respondents' subjective well-being, their optimism about the future and their relative

income. The level of subjective well-being is recorded in the data through the inclusion of a variable measuring, on a scale from 1 to 10, the level of satisfaction with life experienced by each adult (with 1 signaling extreme dissatisfaction and 10 signaling extreme satisfaction). This differs from the SALDRU data discussed above, where the question was posed to ascertain the household's subjective well-being. The response rate for this question is relatively high (approximately 81 per cent of adults who completed a questionnaire provided a response to this question).<sup>8</sup>

Although the mean level of subjective well-being for the entire sample is approximately 5.5, marked differences in the subjective well-being between Africans and whites are observed in the data. While the mean subjective well-being for the African population in the sample is just above 5 (with a standard deviation of 2.5), the mean for the white sample is much higher at a subjective well-being level of almost 7 (with a standard deviation of 1.8). This is in line with the differences in mean per capita income which is observed between the two race groups: the average per capita household income for white individuals in the data was approximately R8 375, while the average per capita household income for black individuals was approximately R1 139 (both in 2010 Rand). In addition, the distribution of subjective well-being for the white sample is much more skewed, indicating the higher levels of subjective well-being are generally observed amongst white respondents. This is in line with previous findings by Posel and Casale (2011) and Hinks (2012), and suggests that the findings of Kingdon and Knight (2007) regarding the racial division of subjective well-being were still observable in 2008.

Following Kingdon and Knight (2006, p. 1208), Table 1 sets out the cross-tabulation of the subjective well-being and actual income categories. In accordance with the methodology applied by Kingdon and Knight, the actual per capita household income is divided into ten categories, so that the percentage of the sample falling into each category corresponds to the proportion of the sample in each subjective well-being category. For example, since 8.3 per cent of the sample indicated a subjective well-being level of 1, the 8.3 per cent of the sample with the lowest absolute income is allocated to the first income category, and so on.

It is clear from the table that the incidence level between these two variables is low. Only in the 7<sup>th</sup> and 8<sup>th</sup> categories are the diagonal cell frequency highest among the cells in the row. This is similar to the result from Kingdon and Knight's (2006, p. 1208) analysis. However, conducting a Pearson's Chi-squared test for independence leads to the conclusion that the variables are not entirely independent, as the null hypothesis cannot be rejected.

In addition to data on subjective well-being, NIDS also contains data on each adult's hopefulness about the future (measured on a scale from 1 to 4). This variable is included in the subjective well-being function in an attempt to control for the existence of a set-point of subjective well-being. In other words, the inclusion of a measure of each individual's optimism about the future attempts to control for the unobserved characteristics which make some individuals more prone to higher

levels of subjective well-being than others, irrespective of observable differences in characteristics and circumstances.

As for relative income, the dataset includes various questions regarding an individual's subjective position on income distribution. More specifically, respondents were asked to indicate on a scale of 1 to 6 (with 1 being the lowest and 6 the highest) the household's perceived relative position in the national income distribution, compared to others at the time of the survey. Elsewhere in the survey questionnaire, respondents were asked to indicate, on a scale of 1 to 5 (with 1 being the highest and 5 the lowest) the household's perceived relative position in the income distribution within the village or suburb where the respondents reside.

**Table 1:** Cross tabulation of subjective well-being category and absolute income category

Income category	Subjective well-being category										Total
	1	2	3	4	5	6	7	8	9	10	
1	14.14	14.95	12.70	10.31	6.90	7.39	4.09	2.88	4.84	11.28	8.32
	1.18	0.76	0.95	1.17	1.29	0.91	0.51	0.33	0.18	1.04	
2	14.14	10.29	7.23	6.49	3.81	2.78	4.31	2.75	0.36	2.71	5.15
	1.19	0.53	0.54	0.73	0.71	0.34	0.54	0.31	0.01	0.25	
3	12.50	11.49	9.34	9.52	6.52	7.59	6.51	3.95	3.75	5.81	7.50
	1.05	0.59	0.70	1.08	1.22	0.93	0.82	0.45	0.14	0.54	
4	13.49	16.54	17.75	15.08	11.12	9.49	8.29	6.43	8.63	10.66	11.32
	1.13	0.84	1.33	1.71	2.08	1.17	1.04	0.73	0.32	0.98	
5	20.89	18.95	22.20	22.31	20.56	17.57	14.86	11.27	16.76	21.84	18.66
	1.75	0.97	1.66	2.53	3.84	2.16	1.86	1.27	0.62	2.01	
6	10.21	12.18	12.78	13.96	14.52	10.99	11.89	10.41	6.81	13.73	12.29
	0.85	0.62	0.96	1.58	2.71	1.35	1.49	1.18	0.25	1.27	
7	9.30	9.54	11.13	12.55	15.21	14.61	15.44	11.11	14.42	7.50	12.57
	0.78	0.49	0.83	1.42	2.84	1.79	1.94	1.26	0.53	0.69	
8	3.77	4.43	4.54	5.40	10.13	16.51	14.82	21.38	13.75	11.91	11.29
	0.32	0.23	0.34	0.61	1.89	2.03	1.86	2.42	0.51	1.10	
9	1.09	0.67	0.92	2.00	4.93	4.28	5.32	5.87	4.51	3.30	3.67
	0.09	0.03	0.07	0.23	0.92	0.53	0.67	0.66	0.17	0.30	
10	0.46	0.96	1.41	2.39	6.31	8.79	14.46	23.93	26.16	11.26	9.24
	0.04	0.05	0.11	0.27	1.18	1.08	1.81	2.70	0.96	1.04	
<b>Total</b>	100	100	100	100	100	100	100	100	100	100	100

Notes: In each cell, the weighted row percentage and column percentage are provided. Chi-Squared= 4.0 (Significant at Pr=0.000)

Information on individuals' perceived relative income has not been included in many South African datasets.<sup>9</sup> This is perhaps because of the potential endogeneity concerns



which exist between subjective reports of well-being and self-reported income (individuals who are more likely to report lower levels of well-being are more likely to also report lower relative income). However, relative income has been shown to play an important role in estimating subjective well-being functions in South Africa. Recent findings by Posel and Casale (2011) explore the perceived relative income data in NIDS to illustrate how this has a much greater effect on subjective well-being than actual relative income. It is for this reason that the above-mentioned variables are included as controls. There are essentially five sets of variables included in the analysis.

- First, in order to make the results comparable with those of Kingdon and Knight (2007), a host of variables at the household level are included: household size, number of children younger than 16 in the household, number of household members of pensionable age, as well as province dummies. Other variables are primarily indicative of the household's socio-economic status (including the log of per capita monthly household income and an asset index).<sup>10</sup> The main specification includes a variable capturing whether a household member owns the dwelling within which the household resides.<sup>11</sup>
- Second, variables controlling for individual characteristics include age, employment status, years of education, marital status, gender, race, hopefulness about the future and self-assessed health status.<sup>12</sup> Most of these variables have been found in the literature to be significantly correlated with the level of subjective well-being in South Africa (Powdthavee, 2003; Hinks and Gruen, 2007). It is important to include individual-level controls in the regression analysis, to control for the fact that the question regarding perceived well-being was asked to individuals in NIDS, not to the household as a whole (as was the case in the SALDRU survey).<sup>13</sup>
- Third, the analysis includes variables created to control for the actual relative standing of households in their residential cluster and district. These variables have been created in order to make the analysis comparable with that of Kingdon and Knight (2007), and focus on the unemployment rate, levels of education and income within the residential cluster and district. In addition, two variables capturing the racial fractionalisation within the neighbourhood (cluster) and larger area (district) within which the household is situated, are included. A Herfindahl index is constructed to capture the measure of racial fractionalisation, in line with Hinks (2012):

$$H_j = 1 - \sum_i^N s_{ij}^2$$

- where  $n_i$  is the total number of individuals (sum of) within the cluster or district. More racially fractionalised or heterogeneous clusters/districts would therefore have a higher Herfindahl index.
- The fourth set of variables captures the household's actual relative within-race position in the income distribution.
- The last set of variables includes the perceived relative standing of the household within the national and local (village/suburb) income distribution.

## THE ANALYSIS: A COMPARISON BETWEEN PRE- AND POST- 1994 SUBJECTIVE WELL-BEING IN SOUTH AFRICA

### Methodology

In accordance with previous studies on subjective well-being, an ordered probit model is used to estimate the subjective well-being function. To maximise the comparability of the results, the model follows that of Kingdon and Knight (2007) closely for the first specification, i.e., only household-level covariates are included.<sup>14</sup> However, as set out above, since the NIDS questionnaire aimed the subjective well-being question at individuals (not the household), it is important to include individual-level variables.

The results from these two different specifications of the model are presented in Table 2. To simplify the interpretation of the results, both the coefficients and marginal effects for reporting the top category (subjective well-being level 10) are reported. The results in Table 2 are robust across the two model specifications. As far as the household-level coefficients are concerned, the mean household education level enters the subjective well-being function positively. As expected, the African dummy is negative and significant, reflecting the large difference in the level of subjective well-being reported between Africans and whites. In addition, viewing your neighbours as aggressive is negatively correlated with subjective well-being. Unsurprisingly, and in line with previous results, both the asset index and per capita household income are positively correlated with subjective well-being.

The measure of fractionalisation within the household's cluster is negatively correlated with subjective well-being, which is contrary to the findings of Hinks (2012), although his analysis focuses on ethno-linguistic fractionalisation, which is a slightly more nuanced concept than pure racial fractionalisation. Also, interestingly, the district-level measure of racial fractionalisation is not significantly correlated with subjective well-being, which seems to indicate the importance of immediate (rather than far-off) neighbours.

As far as the individual-level variables are concerned, both age and education have a positive effect on reported life satisfaction, as expected. The variable controlling for an individual's inherent life satisfaction (hope for the future) does not have a significant effect on reported subjective well-being.

Married individuals are more likely to report the highest subjective well-being category than widowed individuals, but no significant difference is observed between single or divorced individuals and widowed individuals (corroborating the findings of Hinks and Gruen [2007] for data from Durban). Self-reported health status only appears to have a significant effect on reported subjective well-being at lower levels (rank 3–5); these individuals are less likely to report the highest subjective well-being category. There seems to be no significant difference in life satisfaction between males and females.

**Table 2:** Ordered probit models of subjective well-being

	Specification 1		Specification 2	
	Coefficient	Marginal effects (outcome=10)	Coefficient	Marginal effects (outcome=10)
HH size	0.0028	0.0004	-0.0049	-0.0007
Number of children in hh (<16 years)	0.0368	0.0056	0.0349	0.0053
Number of pensioners in hh	-0.0175	-0.0027	-0.0244	-0.0037
Mean education in hh	0.0270***	0.0041	0.0176**	0.0027
Rural formal	0.0420	0.0061	0.0345	0.0049
Urban formal	0.0884	0.0133	0.1023	0.0151
Urban informal	0.0022	0.0003	0.023	0.0032
HH owns the dwelling	0.0477	0.0073	0.061	0.0092
African	-0.0784	-0.012	-0.1475*	-0.0223
Coloured	0.1785*	0.0274	0.1575*	0.0238
Indian	0.2001	0.0307	0.1877	0.0284
Proportion of hh members employed	0.0148	0.0023	0.0687	0.0104
Theft in neighbourhood - common	-0.0411	-0.0063	-0.0295	-0.0045
Neighbours aggressive - common	-0.0795	-0.0122	-0.0646	-0.0098
Asset index	0.1593***	0.0245	0.1503***	0.0227

	Specification 1		Specification 2	
	Coefficient	Marginal effects (outcome=10)	Coefficient	Marginal effects (outcome=10)
Log (monthly per capita hh income)	0.1046***	0.0161	0.0897***	0.0136
HHI in cluster	-0.0932	-0.0143	-0.1022*	-0.0155
HHI in district	-0.0016	-0.0002	-0.0016	-0.0002
Age			-0.0274***	-0.0041
Age squared			0.0003***	0.000
Male			-0.0378	-0.0057
Highest level of educ in years			-0.0222*	-0.0034
Highest level of educ in years squared			0.0016*	0.0002
Married			0.0375	0.0057
Living with partner			0.0500	0.0077
Widowed			-0.0740	-0.0106
Divorced			-0.1112	-0.0155
Perceived health rank 2			0.0404	0.0067
Perceived health rank 3			-0.1471**	-0.0218
Perceived health rank 4			-0.1436*	-0.0214
Perceived health rank 5			-0.4814***	-0.0580
Hopeful about the future always/often			0.0285	0.0043
Unemployed discouraged			-0.1002	-0.0148
Unemployed strict			-0.0991*	-0.0147
Employed			-0.0275	-0.0043
Member of an organisation/group			0.1134***	0.0175
N	12717		12593	

Notes: Sample includes all adults 15 years and older. Standard errors have been corrected for clustering at the level of the enumeration cluster. Provincial dummies included, but not reported. Health status: rank 1 most healthy and rank 5 least healthy. Base category is: Tribal authority area, white, not economically active, never married, perceived health rank 1 (highest).

\*\*\* significance at 1% level, \*\* significance at 5% level, \* significance at 10% level.

So far, the results are broadly compatible with the findings reported by Kingdon and Knight (2006, 2007) for pre-1994 South Africa. The next section explores whether this is still the case if the relative income of close and more distant others is considered.

## Subjective well-being and spatial reference groups

Following the approach by Kingdon and Knight (2007), variables were created to control for the relative well-being of households, compared to other households within the same residential cluster (nearby others) and district (distant others). Variables controlling for mean employment, education and income were created at the district and cluster level, by taking the average level within the cluster or district, excluding that specific household.

The NIDS data include 400 household clusters that are all in the same district and geographical area.<sup>15</sup> This is the smallest geographic unit of analysis within NIDS. These clusters together comprise the district councils or district municipalities, of which there are 53 in South Africa.<sup>16</sup> Within the district councils, households from different geographical areas are included. Although the households in the clusters are very homogeneous in nature, the households in the district council are more diverse. The district is therefore seen as a proxy for more distant others, while the cluster is seen as a proxy for closer others. Table 3 replicates the approach taken by Kingdon and Knight (2007, p. 78).

**Table 3:** Subjective well-being and relative income across spatial reference groups

	1	2	3	4	5	6
African	-0.1377*	-0.1372*	-0.1311*	-0.1289*	-0.0820	-0.0860
Coloured	0.1658*	0.1666*	0.1720*	0.1725**	0.2049**	0.1972**
Indian	0.1999	0.1993	0.1922	0.2066	0.2027	0.2177*
Proportion of hh members employed	0.0506	0.0499	0.0698	0.0780	0.0641	0.0629
Asset Index	0.1509***	0.1507***	0.1460***	0.1435***	0.1346***	0.1346***
Log (monthly per capita hh income)	0.0856***	0.0853**	0.0876***	0.0866***	0.0747**	0.0736**
Mean cluster prop of employed in hh	0.1505	0.1567				
Mean district prop of employed in hh		-0.0655				
Mean cluster years of educ per hh			0.0102	0.0255		

	1	2	3	4	5	6
Mean district years of educ per hh				-0.0960**		
Mean cluster log pc hh income					0.0756*	0.0911**
Mean district log pc hh income						-0.1409***
N	12 593	12 593	12 593	12 593	12 593	12 593

*Notes: Sample includes all adults 15 years and older. Reported results are coefficients from ordered probit regressions on subjective well-being categories. Standard errors have been corrected for clustering at the level of the enumeration cluster. A full set of control variables (including controls for province of residence) are included, but not reported. Mean cluster and district level variables were created without taking into account the household's own contribution to the average.*

*\*\*\* significance at 1% level, \*\* significance at 5% level, \* significance at 10% level.*

Cluster and district average variables are included stepwise so that the effect of each of the variables can be ascertained separately and in combination with each other. Table 3 provides some evidence that cluster-level variables enter the individual's utility function positively,<sup>17</sup> while the district-level variables enter negatively.

This accords with the research of Kingdon and Knight (2007, p. 78), who, after finding that the cluster-level coefficients are more significant for smaller clusters, concluded that the positive effect of the cluster-level variable is a result of altruism towards others who are similar to one's own household. Given that the clusters in the NIDS data are all smaller than 200 households, it would appear that the positive effect of the cluster-level variables can in this instance also be attributed to altruistic feelings, while the district-level variables appear to confirm the usual finding that relative well-being has a significant effect on how well individuals think they are doing (i.e., their subjective well-being).

Thus far the results appear to indicate that not much has changed from the 1993 SALDRU data. However, in the next two sections, the hypothesis of a race-related reference group is explored in more detail.

## Subjective well-being and race-specific relative income

To test whether race-specific reference groups are still relevant for subjective well-being, variables capturing the relative standing of individuals within their specific race group are included in the regression, as set out in Table 4.

These include variables indicating the household's position in the race-specific income quintiles, i.e., where the household falls relative to its race group. In addition, another variable is created as the log of the race-specific district mean income, in other words the mean per capita household income of all households of the same race within the household's district. It is evident from Table 4 that none of these

race-specific variables have any significant effect on the subjective well-being of individuals, although the general mean district household income remains negative and significant.

In addition to the abovementioned estimations, the sample is also divided according to whether a household falls below or above the poverty line, to ascertain whether this classification influences the effect of race-specific relative income on subjective well-being and to therefore test for heterogeneity in the results for the entire sample. This essentially replicates Kingdon and Knight's (2006, p. 1219) approach. The poverty line selected is R575 in 2010 Rands.<sup>18</sup> This poverty line has been used in many studies but has its origin in the work of Özler (2007), where it was used as a poverty line of R322 in 2000 prices.

Table 5 reports the results from an ordered probit on the subjective well-being variable including all of the control variables discussed in the sub-section above, in addition to the log of the district mean income<sup>19</sup> for the sample above and below the poverty line.

**Table 4:** The effect of race-specific relative income on subjective well-being

	1	2	3	4
African	-0.0860	0.0052	-0.0250	0.0047
Coloured	0.1972**	0.2623**	0.2398	0.2617*
Indian	0.2177*	0.2331*	0.2297	0.2430
Proportion of hh members employed	0.0629	0.0651	0.0849	0.0824
Asset index	0.1346***	0.1351***	0.1548***	0.1364***
Log (monthly per capita hh income)	0.0736**	0.0737**	0.0865	0.0689
Mean cluster log pc hh income	0.0911**	0.0860**		0.0949**
Mean district log pc hh income	-0.1409***	-0.1688***	-0.1687***	-0.1676***
Log of the race-specific district mean income (mean per capita household income of all of the households of the same race within the household's district)		0.0582	0.0837	0.0512

	1	2	3	4
Own-race income quintile 2			0.0877	0.1006
Own-race income quintile 3			0.0369	0.0516
Own-race income quintile 4			0.0719	0.0870
Own-race income quintile 5			0.0256	0.0260
N	12 593	12 593	12 593	12 593

*Notes: Sample includes all adults 15 years and older. Reported results are coefficients from ordered probit regressions on subjective well-being categories. Standard errors have been corrected for clustering at the level of the enumeration cluster. A full set of control variables (including controls for province of residence) are included, but not reported. Mean cluster and district level variables were created without taking into account the household's own contribution to the average.*

*\*\*\* significance at 1% level, \*\* significance at 5% level, \* significance at 10% level.*

For the sub-sample above the poverty line, the results are similar to those in Table 4 – the race-specific variables have no effect on the subjective well-being of individuals. However, for individuals above the poverty line, absolute income matters as the household income and asset index variables are significant. Below the poverty line we however see a different picture: for poor individuals, relative income seems to matter, specifically relative income within their race group. This might be because the results for the poor sub-sample are driven primarily by data on black individuals (93 per cent of the individuals in this sub-sample are black). Restricting the sample to only include white, Indian and coloured individuals confirms this hypothesis – the race-specific relative income variables become insignificant and are thus clearly driven by the black sub-sample. As a result, this might be seen as a lingering effect of apartheid's restriction on movement. Poor black individuals often still reside in areas that are largely homogenous in terms of race, where very little racial integration has taken place.

For the group of non-poor individuals, the post-1994 abolition of apartheid and its policies that facilitated integration between races has resulted in a shift in the relevant reference group for these individuals. However, for poor black individuals, this shift did not take place and the results from Kingdon and Knight (2006, 2007) remain valid in 2008, with race being a significant determinant of the reference group of this sub-sample.



**Table 5:** Relative income on subjective well-being above and below the poverty line

	<b>Below R575 poverty line</b>	<b>Above R575 poverty line</b>
African	0.1981	0.3490*
Coloured	0.6105**	0.4192***
Indian	0.6430**	0.3871**
Asset index	0.0352	0.2032***
Log (monthly per capita hh income)	-0.1944	0.2411***
Mean cluster log pc hh income	0.1829**	0.0381
Mean district log pc hh income	-0.3399***	-0.1013
Log of the race-specific district mean income (mean per capita household income of all of the households of the same race within the household's district)	0.1660	0.0540
Own-race income quintile 2	0.2616**	0.1864
Own-race income quintile 3	0.3346**	-0.0500
Own-race income quintile 4	-	-0.0969
Own-race income quintile 5	-	-0.3261
N	5 919	6 673

*Notes: Sample includes all adults 15 years and older. Reported results are coefficients from ordered probit regressions on subjective well-being categories. Standard errors have been corrected for clustering at the level of the enumeration cluster. A full set of control variables (including controls for province of residence) are included, but not reported. Mean cluster and district level variables were created without taking into account the household's own contribution to the average.*

*\*\*\* significance at 1% level, \*\* significance at 5% level, \* significance at 10% level.*

Another interesting result from Table 5 is that while absolute income and asset-ownership were positive and significantly correlated with reported life satisfaction for individuals who live in households above the poverty line, no such significant effect was found for those individuals living in households below the poverty line. This contradicts the 1993 results of Kingdon and Knight (2006). However, given the significance of the cluster income variable, it might be indicative of raised awareness among poor individuals regarding their relative well-being, compared to others in their immediate environment. Indeed, if the regression is repeated without the cluster and district level variables, the sign of the asset index and own income variables for individuals below the poverty line becomes positive (but still not significant).

The low correlation between actual relative income rank and perceived relative income rank seems to indicate that the dummies included by Kingdon and Knight (2007) are potentially a poor proxy for where individuals rank themselves in the

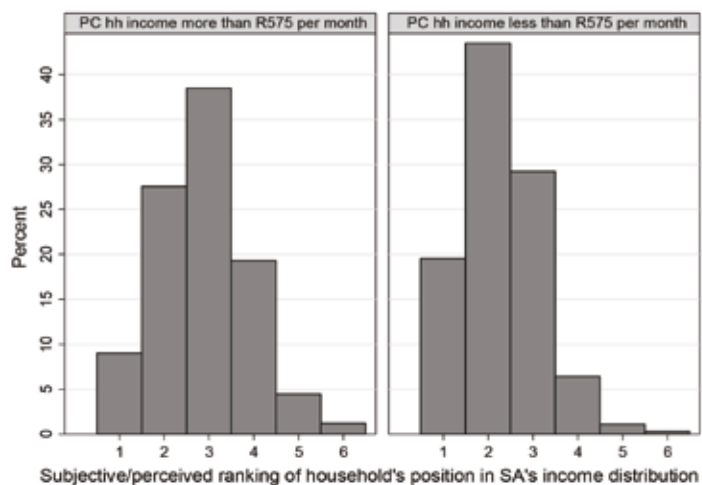
income distribution. The next section therefore discusses the impact of perceived relative income on subjective well-being.

## The effect of perceived relative income

If the relevant reference group is no longer entirely racially divided, the question is what measure individuals use to gauge their well-being. The effect of perceptions of individuals' relative standing on their subjective well-being levels is tested in Tables 6 and 7.

These regressions include individuals' perception of where their household ranks in terms of the national income and the income distribution within their village or suburb. These subjective relative income measures are a better indication of an individual's perceived relative income, for two reasons: first, the dummies are not race-specific, and second, the dummies take into account the fact that individuals' actual relative position on the income distribution often differs substantially from their perceived relative position (see Posel and Casale, 2011; Ravallion, 2002).

As an indication of the mismatch between individuals' perceived rank in the income distribution and their actual rank, we include Figure 1 which illustrates the distribution of perceived relative income for individuals below and above the poverty line, which clearly shows the mismatch of perceived and actual income rank.



**Figure 1:** Perceived relative income above and below the poverty line

Table 6 sets out the results from two specifications in which perceived relative income is introduced. It would appear that perceived relative income on both a national and a local level enters the individual's utility function negatively.

**Table 6:** The effect of perceived relative income on subjective well-being

	<b>Specification 1</b>	<b>Specification 2</b>
African	-0.1855**	-0.1868**
Coloured	0.2453***	0.2646***
Indian	0.1482	0.1073
Proportion of hh employed	0.0780	0.0764
Asset index	0.0897**	0.0492
Log (monthly per capita hh income)	0.0754***	0.0500**
Relative household income to others in your village/suburb		
Above-average inc in village/suburb	-0.4151***	-0.3817***
Average inc in village/suburb	-0.6417***	-0.5718***
Below-average inc in village/suburb	-1.1015***	-0.9626***
Much below average inc in village/suburb	-1.3268***	-1.1035***
Relative household income to others in SA		
Ladder rung 2 in SA		0.4249***
Ladder rung 3 in SA		0.5366***
Ladder rung 4 in SA		0.6959***
Ladder rung 5 in SA		0.9913***
Ladder rung 6 in SA		1.1570***
N	11 871	11 830

*Notes: Sample includes all adults 15 years and older. Reported results are coefficients from ordered probit regressions on subjective well-being categories. Standard errors have been corrected for clustering at the level of the enumeration cluster. A full set of control variables (including controls for province of residence) are included, but not reported. Reference group is perceived relative income relative to others in SA ladder rung 1 and perceived relative income in village much above average.*

*\*\*\* significance at 1% level, \*\* significance at 5% level, \* significance at 10% level.*

The results from Table 7 seem to also indicate that individuals' perceived relative income affects reported subjective well-being for individuals in households both below and above the poverty line. In fact, for both these groups, perceived relative income is more important than actual income, which becomes insignificant with the inclusion of the perceived relative income variables. In line with the findings from Table 5, the coefficients on the perceived relative income within the village are significantly larger for poor individuals than for the non-poor sample. This provides further support for the hypothesis that the relevant reference group for poor black

individuals remains those closest to them – individuals in the village or suburb who are, as a result of the lingering effect of apartheid, almost always ensured to also be black. Additional support for this hypothesis is obtained from further regression analysis. In a regression on the poor sample, the inclusion of perceived relative income in the village cancels out the effect of the race-specific relative income variable. This does not hold true for the non-poor sub-sample. In addition, perceived relative income in South Africa as a whole remains significant and has no effect on the race-specific relative income variable. It would therefore appear that race-specific relative income is a proxy for poor black individuals' perceived relative income.

From Table 7, it is interesting to note that many individuals rank themselves at the top of the income distribution (ladder rung 5 or 6, compared to the rest of South Africa), but objectively are in poverty. Conversely, many individuals rank themselves at the bottom of the income distribution while in actual fact they are not in poverty, objectively speaking. This mismatch between perceived relative income and actual relative income is similar to what Ravallion (2002) observed in Russia in the 1990s and what Posel and Casale (2011) found for South Africa, and in line with what is shown in Figure 1.

**Table 7:** Perceived relative income and subjective well-being above and below the poverty line

	<b>Below the R575 poverty line</b>	<b>Above the R575 poverty line</b>
African	-0.3218	-0.1197
Coloured	0.4379*	0.2167**
Indian	0.5022	0.0475
Proportion of hh employed	0.4158	-0.0241
Asset index	-0.0324	0.0968**
Log (monthly per capita hh income)	0.0271	0.0602
<b>Perceived relative household income to others in your village/ suburb</b>		
Above-average inc in village/suburb	-0.5316***	-0.2734*
Average inc in village/ suburb	-0.8414***	-0.4370***
Below-average inc in village/ suburb	-1.2874***	-0.7961***
Much below average inc in village/suburb	-1.4192***	-0.9363***

	<b>Below the R575 poverty line</b>	<b>Above the R575 poverty line</b>
<b>Perceived relative household income to others in SA</b>		
Ladder rung 2 in SA	0.4483***	0.3479***
Ladder rung 3 in SA	0.4838***	0.5393***
Ladder rung 4 in SA	0.7265***	0.6988***
Ladder rung 5 in SA	0.8962***	1.0496***
Ladder rung 6 in SA	1.0295	1.2258***
N	5 533	6 297

*Notes: Sample includes all adults 15 years and older. Reported results are coefficients from ordered probit regressions on subjective well-being categories. Standard errors have been corrected for clustering at the level of the enumeration cluster. A full set of control variables (including controls for province of residence) are included, but not reported. Reference group is perceived relative income relative to others in SA ladder rung 1 and perceived relative income in village much above average.*

*\*\*\* significance at 1% level, \*\* significance at 5% level, \* significance at 10% level.*

## CONCLUSION

This article set out to evaluate the shifts in reference groups which have occurred since the country's first democratic elections in 1994. For this purpose, 2008 data from NIDS were applied using the methodology in Kingdon and Knight (2006, 2007), where the authors used data from 1993. A comparison between these two sets of results reveals that while certain conclusions drawn by Kingdon and Knight (2006, 2007) still held true in 2008, there were some changes in the determinants of subjective well-being subsequent to 1994.

The differences in the level of subjective well-being between races (specifically the African and white race groups) have not changed since 1994, and significant differences between these groups remained in 2008. However, some changes to the reference group with which individuals compare themselves have occurred since 1994.

More specifically, it would appear that the measures Kingdon and Knight used to proxy for individuals' racially divided reference groups, are no longer such a good proxy for reference groups for South Africa as a whole. However, this result is driven primarily by non-poor individuals. For a part of the population, i.e., those above the poverty line, reference groups have shifted away from being race-specific. However, for individuals below the poverty line, who are mostly black and reside in homogenous areas, the conclusion by Kingdon and Knight that reference groups are determined along racial lines remains as relevant in 2008 as it was in 1994.

In addition to the above, both individuals below and above the poverty line regard perceived relative income as an important determinant of their subjective well-being, although poor black individuals regard their perceived relative income of individuals in the village or suburb (i.e., close neighbours) as more important than their perception regarding their relative income in the country as a whole. This may be explained by the political changes which have taken place in South Africa since 1994, with integration occurring more at the top end of the income distribution, and many poor black individuals remaining behind in areas which are racially homogenous – a lingering effect of apartheid policies.

While society was greatly divided along racial lines prior to 1993, subsequent to 1994 greater racial integration took place and one would therefore expect the relevant comparison group to include individuals from all race groups. The results support this proposition for a large part of the population, however, for those in poverty, race remains a significant determinant of the relevant reference group with which individuals compare themselves in determining their subjective well-being.

## BIOGRAPHICAL NOTE

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## ENDNOTES

1. In this article the terms are used inter-changeably.
2. Significant differences in SWB between racial groups have, however, also been found in more developed economies such as the US and UK (Hinks and Gruen, 2007, p. 317; Dolan *et al.*, 2008, p. 99).
3. Kenny (1999) estimates this level to be where the real per capita GDP reaches approximately \$20 000 p/a.
4. Using the same data as Kingdon and Knight (2007).

5. The authors refer to the ‘re-racialization of society’ in South Africa (Du Toit and Kotzè, 2011, p. 85).
6. In other words, individuals purchase certain assets purely to indicate their relative standing in the income distribution of their reference group. Therefore, the higher up one is in the reference group income distribution, the more conspicuous one’s consumption will be.
7. In other words, individuals purchase certain assets purely to indicate their relative standing in the income distribution of their reference group. Therefore, the higher up one is in the reference group income distribution, the more conspicuous one’s consumption will be.
8. This calculation and all subsequent analyses exclude all adults for whom only a proxy questionnaire was completed.
9. Although it is not uncommon in data from other countries (see, e.g., Ravallion [2002], who explores such data for Russia).
10. The asset index was created using multiple component analysis with most of the assets included in the NIDS household questionnaire, including radio, TV, satellite dish, VCR, computer, camera, electric stove, gas stove, microwave, fridge, washing machine, sewing/knitting machine, lounge suite, car, motorcycle, bicycle, plough, tractor, wheelbarrow, and grinding mill. It includes an indication of the living conditions of the household, namely the dwelling type; roof material; wall material; main water source; type of toilet and main source of fuel used for lighting, heating and cooking.
11. Since many households responded in the affirmative to this question, we only code it as equal to 1 if the dwelling is a formal house with brick walls.
12. It has been shown that health has a significant effect on a person’s subjective well-being (Posel and Casale, 2011, p. 9).
13. To make the results more comparable with those from the SALDRU survey, the regressions were repeated on the sub-sample of individuals who were the primary respondents in the household questionnaire. However, this did not significantly alter the main results.
14. Although it could be argued that individual-level characteristics would also affect the way in which an individual would respond to questions regarding the well-being of his or her household.
15. In other words, each district consists of a number of clusters which are all homogeneous, be they in a rural, urban, informal rural or tribal authority area within the district.
16. Here referred to as districts and district councils.
17. Again, as mentioned above, the regressions were repeated only on the sample of individuals who were the main respondents in the household questionnaire (to make the results more comparable with those using the SALDRU data, where subjective well-being was measured at household level). However, there were no significant differences from the results reported here.
18. All prices in the NIDS data have been inflated to reflect August 2010 prices.

19. Household income was chosen instead of personal income, because of a large number of non-random missing values for personal income. In addition, this approach makes the results more comparable to those of Kingdon and Knight (2007).

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