Emergent Black Affluence and Social Mobility in Post-Apartheid South Africa

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Abstract

The nature and extent of black affluence in South Africa provides an indicator of the impact of efforts to eradicate the remnants of apartheid-era racial discrimination in the South African education system and labour market. Most studies examining social mobility and inequality in South Africa have looked at the bottom of the income distribution, investigating changes in the severity and also the racial incidence of poverty. This paper explores the same topic by studying the top of the income distribution.

Firstly, the paper attempts to identify the features that distinguish the affluent and specifically the black affluent from the rest of the population with a descriptive analysis. In the second section logit and multinomial logit models are used to consider the impact of geography, household characteristics and the age, education and occupation of the household head on the likelihood of being affluent. The paper investigates how affluence predictors vary between different race groups. The third and last section of the paper is devoted to a typology of the affluent.

The paper shows a dramatic increase in black affluence. Also, the analysis here confirms many of the traditional views of social mobility. The paper finds a strong association between geography, demographic profile and affluence that is robust across population groups. The empirical evidence cited is consistent with convex returns to education and a substantial role for quality of education.

Our typology of the affluent shows that race is a strong defining characteristic for the clusters identified in 1995 and 2000. Encouragingly, the evidence indicates that there is a large young racially integrated group emerging among the affluent. These households have income levels below the average for the affluent. Household heads belonging to this group, however, have educational attainment levels exceeding the average for the affluent suggesting that income might rise to match or exceed average levels for the affluent as the group matures.

Acknowledgements

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Introduction

It is vital to consider to what extent the remnants of apartheid-era racial discrimination has been effectively eliminated in the South African education system and labour market. Most studies examining social mobility and inequality in South Africa have looked at the bottom of the income distribution, investigating changes in the racial incidence and severity of poverty. This paper explores the same topic by studying the top of the income distribution.

The opportunities offered in the new political dispensation have increased the number of the black "insiders". Due to this trend it is expected that intra-racial inequality will become an increasingly important contributor towards overall inequality in South Africa.[1] By focusing on the black members of this group of affluent, this paper endeavours to improve the understanding of the emergent forces shaping social mobility and inequality in South Africa.

This paper will be divided into three sections, with the first two sections investigating the characteristics of the affluent and the determinants of affluence and the last section venturing a typology of the affluent. Throughout the paper the focus remains on the relationship between race and affluence, with a particular emphasis on identifying the unique features of black affluence.

For the analysis we use the 1995 October Household Survey/Income and Expenditure Survey (OHS/IES) and the 2000 Labour Force Survey/Income and Expenditure Survey (LFS/IES).[2] In both these surveys, but especially the last survey, there is sufficient evidence of careless field work and sloppy data entry and coding to warrant concern about the reliability of the data sets. Many of the identified problems cannot be corrected by cleaning or editing procedures. Due to sampling frame adjustments and the concerns about the reliability of the 2000 IES, the comparability of the two surveys cannot be guaranteed. Thus the analysis avoids identification of trends across the two surveys. Instead the two time periods are mostly used to test the stability of relationships between variables. Results were carefully examined for distortions attributable to the peculiarities of the data and the authors were deliberately conservative in the conclusions they drew from the analysis.

The identification of the affluent is explored in the first section of the paper.

1 Van der Berg & Marincowitz (1999) concluded that "the next quarter of a century will probably see the continued advancement of the black elite and the gradual growth and consolidation of the black middle class".

2 See Addendum A for a more detailed discussion of the 1995 OHS/IES and the 2000 LFS/IES and also the problems associated with these surveys.

1. Who are the affluent?

1.1 Identifying the affluent

Our efforts to identify the affluent will to a large extent be based on adaptations of the literature on the identification of the poor. The conventional approach to identifying the poor is to rank households according to a particular income or welfare indicator, and to then select a cut-off point to separate the poor from the non-poor (Hentschel and Lanjouw 1996: 1). Income or expenditure is usually chosen as the indicator of welfare (Glewwe 1998: 3) – although other indicators, such as education or nutrition, can also be used.

If affluence is interpreted as being defined solely in terms of income or expenditure, the identification of the affluent will be a simpler task than the identification of the poor. In the case of poverty, income or expenditure is merely a ready substitute for a multi-dimensional concept indicating deprivation of a variety of factors including security, nutrition and access to employment.

In studying poverty, it is often argued that expenditure will be a more reliable indicator of welfare than income, since the consumer's preference to smooth consumption is likely to render it less volatile than income over the short term (Ravallion, 1992: 13). However, when studying affluence, income might be a preferable measure of welfare. We would expect income to be less volatile at the top end of the income distribution and one can assume that in most cases relatively affluent individuals will be more likely to accurately recall their monthly income than their monthly expenditure.

Based on Woolard and Leibbrandt's finding (2001: 53) that in the South African context even substantial adjustments for household structure are virtually inconsequential for the identification of poor households, we will use per capita household income as measure of welfare, making no corrections for household composition.

In their comparison of different poverty measures, Woolard and Leibbrandt's (2001: 46) note that the exact point at which a poverty line is drawn will always be "somewhat arbitrary and often highly contentious". The same applies to our "line of affluence". However, there are two considerations that provide some guidance. Firstly, when selecting a line of affluence, it is vital that this group should include enough observations to enable statistical analysis – ideally also enough observations of the separate population groups to allow investigating the affluent households of different population groups in isolation. Conversely, if this line is too low and includes too many observations, the term "affluence" can lose its meaning.

Bearing these considerations in mind, the affluent is defined as the richest 15 percent of households – as measured by per capita income. The "line of affluence" is therefore drawn at a per capita income of R22 500 per year (1995 prices). In the 1995 OHS/IES (which is used as our primary data set), this group includes 4 456 observations, 913 of whom are black.[3]

3 Throughout the text population group will refer to the population group membership of the household head. Also, when we refer to gender, age and education this will be the gender age and education of the household head.

After taking household weights into account, the group represents 16.2 percent of the population.

A second line at the level of an annual income per capita of R36 000 is used to identify the very affluent. This group was defined so as to represent the top half of the affluent group. In the 1995 OHS/IES the very affluent includes 2 277 households, 326 of whom are black. This group represents 7.7 percent of the survey participants and 8.5 percent of the population after taking survey weights into account.

When using the second, higher affluence line, those observations that fall below this line, but lie above the first line of affluence – those households who are affluent, but not very affluent – will be referred to as the "merely affluent". The identification of two groups of affluent will also allow us to test the robustness of our results to the position of our line of affluence.

These lines of affluence are adjusted for inflation and then applied to the LFS/IES 2000.[4] Table 1.1 shows a 1995/2000 comparison of the breakdown of affluent households per population group. Even at these fairly modest lines of affluence, the number of very affluent coloured households in 1995 and 2000, and affluent Indian households in 2000 are such that it can be considered imprudent to make inferences from these samples.

Table 1.1: The breakdown of affluent households by population group

	1995	2000	
Population group	**Affluent**	**Very Affluent**	**Affluent**
Black	913	326	1 885
Coloured	242	88	345
Indian	251	125	162

Since our focus is on social mobility, it is useful to split the remaining households (the non-affluent) into two groups: the middle-class and the poor. The poor will be defined as the poorest 40 percent of households, which implies using a R3 650 per capita annual income as a poverty line.

4 The survey's income data is adjusted upwards by 38 percent to match National Account totals. See Addendum A for a more detailed description of the problems with the IES 2000.

Table 1.2 summarises the income group definitions as described in this section and as it will be used throughout this paper.

Table 1.2: Income classifications

Per capita income (1995 prices)	Percentage of population in IES 1995	Household classification	
Less than R 3 650	40 %	Poor	Non-affluent
Between R 3 650 and R 22 500	36%	Middle-class	
Between R 22 501 and R 36 000	16%	Merely Affluent	Affluent
More than R 36 000	8%	Very Affluent	

1.2 Racial dimensions of affluence

Considering South Africa's political past, it is not surprising to find that there is a strong racial dimension to affluence. In 1995 71 percent of the country's affluent (79 percent of the very affluent) was white. Despite representing 70 percent of the population, blacks only comprised 22 percent of the affluent (15 percent of the very affluent).

By 2000 the composition of the affluent had changed considerably. The white share of affluence had shrunk to 47 percent while the black share of affluence rose to 41 percent. Table 1.3 also shows that the percentage of Indians in the affluent group remained largely unchanged while the coloured share of affluence more than doubled.

Table 1.3: Proportion of the affluent belonging to each population group

	1995	2000	
Population group	Affluent	Very Affluent	Affluent
Black	22 %	15 %	41 %
Coloured	3 %	2 %	8 %
Indian	4 %	3 %	4 %

Table 1.4 shows that even though we observe a rise in the proportions of households who are affluent for each population group, the size of the population shift as described in Table 1.5 seems implausibly large and possibly attributable to problems with the surveys. According to the survey the population share of blacks moved from 70 percent to 78 percent between 1995 and 2000 while the population share of whites shrunk from 19 percent to 11 percent over the same period. It is thus likely that the survey trends may overrepresent increases in black affluence and underrepresent increases in white affluence.

Table 1.4: Proportion of each population group classified as affluent

	1995	2000	
Population group	**Affluent**	**Very Affluent**	**Affluent**
Black	5.1 %	1.9 %	9.0 %
Coloured	6.7 %	2.5 %	16.8 %
Indian	21.9 %	10.8 %	28.9 %
White	59.9 %	35.0 %	74.9 %
Total	**16.2 %**	**8.5 %**	**18.1 %**

Table 1.5: Population group breakdown of households

Population group*	1995	2000
Black	70.0 %	77.8 p%
Coloured	8.3 %	8.1 %
Indian	2.6 %	2.5 %
White	19.2 %	11.4 %

*Race shares do not add to 100 percent due to “Unspecified” category

Table 1.6 shows that the mean age of the black affluent household head is lower in 2000 than in 1995, while the reverse trend is observed for white affluent household heads over the same period, suggesting that inter-racial shifts in affluence have been more pronounced among younger cohorts.

Table 1.6: Mean and standard deviations for household per capita income, age and educational attainment of household head per population group for affluent

Variable			Black	Coloured	Indian	White
Per capita income (1995 prices)	1995	Mean	41 414	39 159	48 727	55 794
		Std Dev	35 767	28 326	39 063	63 502
	2000	Mean	30 262	32 463	40 432	51 550
		Std Dev	25 421	21 727	33 249	55 186
Age of household head	1995	Mean	40.2	41.7	43.4	45.6
		Std Dev	11.3	12.0	12.9	14.1
	2000	Mean	39.7	42.0	44.4	47.3
		Std Dev	10.5	13.0	11.9	15.3
Years of educational attainment of household head	1995	Mean	10.9	11.7	12.1	12.5
		Std Dev	3.7	2.8	2.7	1.8
	2000	Mean	9.7	11.7	12.0	12.8
		Std Dev	4.3	2.6	2.9	2.1

1.3 Affluence and geography

Table 1.7 considers the relationship between affluence and geography. Gauteng and the Western Cape are the only provinces with a higher proportion of affluent residents than the national average in both 1995 and 2000. The Eastern Cape and Limpopo have the lowest proportion of affluent inhabitants. It is likely that the strong decline in the proportion of Gauteng residents who are affluent are due to problems with the survey: either attributable to adjustments in the sampling frame or alternatively, unreliable field work in Gauteng.[5]

Table 1.7: Proportion of each province's population classified as affluent

Province	Percentage of households		
	1995	2000	
	Affluent	Very Affluent	Affluent
Gauteng	34.1	19.3	25.3
Western Cape	23.0	13.0	30.4
Northern Cape	12.1	6.3	20.7
Kwazulu-Natal	11.9	6.0	13.2
Free State	11.2	5.2	20.3
Northwest	10.9	4.6	15.8
Mpumalanga	9.7	4.6	15.3
Limpopo	7.8	3.4	6.4
Eastern Cape	7.7	3.5	9.8
Total	**16.2**	**8.5**	**18.1**

5 See the addendum for a more thorough discussion of problems relating to the two surveys

Table 1.8 shows that affluence is more prevalent in urban areas. More than 20 percent of urban residents are affluent, while less than 5 percent of those in rural areas are affluent.

Table 1.8: Proportion of urban/rural dwellers classified as affluent

	Proportion who are affluent	
	1995	**2000**
Urban	25.53	24.39
Rural	4.35	3.70
Total	**16.2**	**18.1**

1.4 Affluence and household size

Cross-tabulations indicate that affluent households generally have smaller families. According to table 1.9, non-affluent families had 4.70 members on average in 1995, compared to affluent families who had 2.73 members on average.

Table 1.9: Household size for the affluent

	Average number of members in household	
	1995	**2000**
Non-affluent	4.70	4.20
Affluent	2.73	2.41
Very Affluent	2.55	2.41

Table 1.9 also suggests that there has been a move towards smaller families. The average household size declined from 4.39 households members in 1995 to 3.85 household members in 2000. The average non-affluent family now had 4.20 members – still substantially higher than the 2.41 average family size of affluent households. The decrease in household size has been slightly larger for affluent households, who experienced a 14 percent reduction in household size compared to 11 percent for the non-affluent. Disaggregating the affluent households into different population groups suggests that the effect is mainly driven by the change in household size of affluent blacks – as illustrated by Table 1.10.

Table 1.10: Average household size for the affluent by population group

Population group	Average household size			
	1995		2000	
	Affluent	Very Affluent	Affluent	Very Affluent
Black	2.59	2.51	1.87	1.95
Coloured	3.04	2.52	3.08	2.85
Indian	3.51	3.39	3.30	2.98
White	2.73	2.53	2.69	2.54
Total	**2.73**	**2.55**	**2.41**	**2.41**

It is insightful to further disaggregate black households by household size. For both affluent and very affluent black households there was a large shift towards single-member households. This shift may be partly attributable to problems with the survey's sampling frame in 1995, which resulted in undercounting of black single-member households.

Table 1.11: Black affluent households, by household size

Household size	Percentage of affluent households			
	1995		2000	
	Affluent	Very Affluent	Affluent	Very Affluent
1	38.3	40.2	61.2	56.2
2	18.3	18.9	14.7	17.0
3	15.4	14.4	10.8	12.4
4	14.2	13.5	6.7	8.4
5	6.9	6.3	4.5	4.1
6	3.5	4.0	1.2	0.9
7	1.7	2.2	0.6	0.7
8	1.0	0.4	0.2	0.1
9	0.5	0.2	0.0	0.0
10	0.1	0.0	0.1	0.2

1.5 Affluence and the gender of the household head

The negative relationship between female-headed households and predicted income is well-established in the literature on poverty determinants. As the literature would predict, Table 1.12 shows that female-headed household were less common amongst affluent than non-affluent households.[6] However, the table also shows that the proportions of female-headed households were very similar for affluent and non-affluent households in 1995 and, surprisingly, by 2000 the very affluent had a higher proportion of female-headed households than the "merely" affluent. The Lowess graphs display the same trend, but in more detail. The table and graphs appear to indicate that the negative statistical association between income and the probability of observing a female-headed household might only hold true for households below a certain income level.

Table 1.12: Proportion of female household heads in different income groups

	1995	2000
Non-affluent	0.343	0.428
Affluent	0.150	0.187
Very Affluent	0.146	0.193
Total	**0.312**	**0.384**

6 By using Pearson's chi-squared test, the hypothesis, that affluence is independent of the gender of the household head, can be rejected in both periods at a level of confidence exceeding 99,9 percent.

Figure 1: Lowess graph showing proportion of female-headed black households by household income per capita in 1995

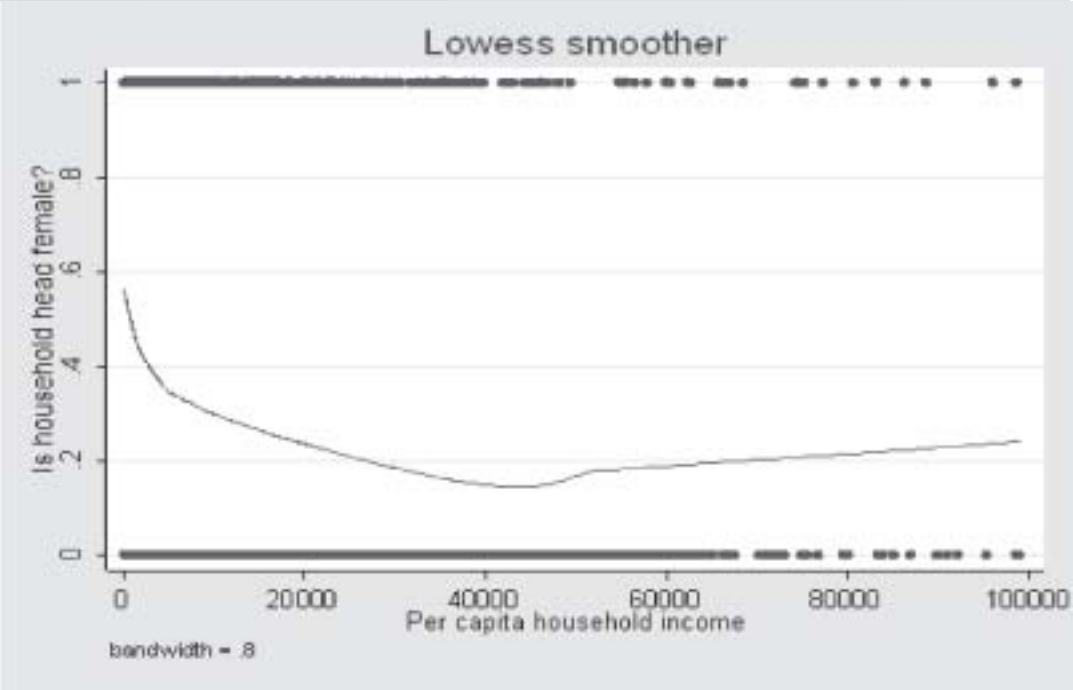
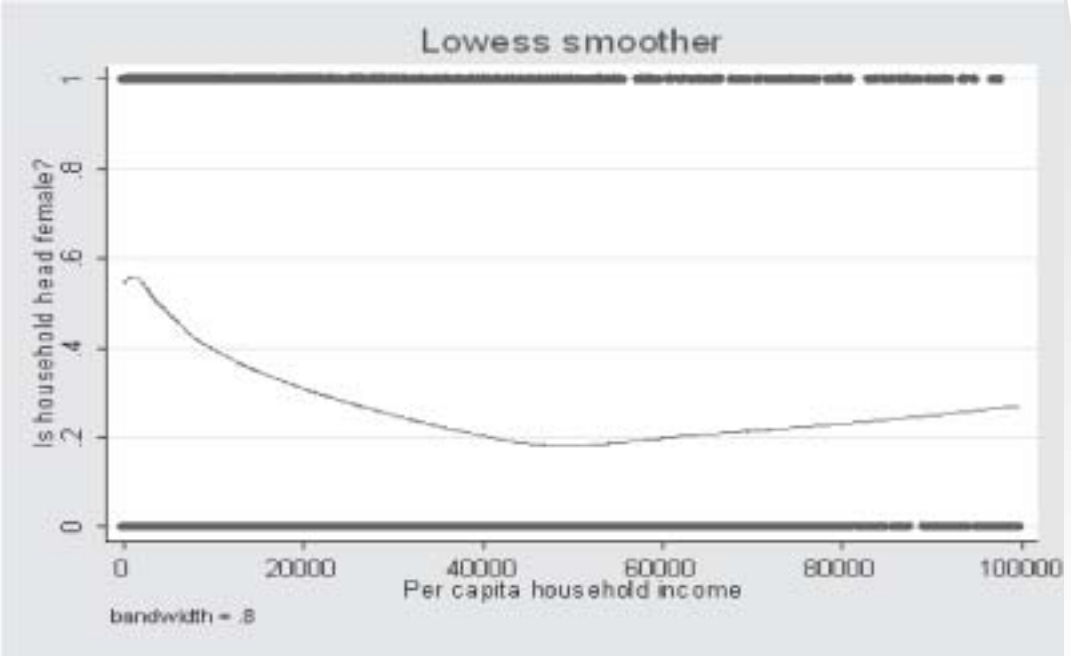


Figure 2: Lowess graph showing proportion of female-headed black households by household income per capita in 2000



Further analysis is required to distinguish the separate effects and compare the relative weight of the different predictors of affluence. In section two the characteristics discussed in section one are used as explanatory variables in a logistic regression modelling the likelihood of a household being affluent.

2. The Determinants of Affluence

The model uses predictors of low income as the predictors of affluence, asking whether the absence of characteristics associated with poverty necessarily increased the likelihood of affluence.[7]

The second and fourth column of Table 2.1 summarise the regression results for a logistic regression for affluence including geography, race, household size, and the gender, educational attainment and age of the household head.[8] A second model is estimated with white-education interaction variables included as regressors. The rest of the section is devoted to a discussion of the results of these two models, first applied to all affluent households and then only to black affluent households.

7 Working on the KwaZulu-Natal Income Dynamic Study, Keswell (2001) emphasised the problems with an aggregated analysis of socio-economic dynamics. He showed that social mobility is a heterogeneous process characterised by non-linearities.

8 To test the sensitivity of the results for the selected affluence line, coefficients were estimated when the line of affluence is shifted both 2 percentage points up and 2 percentage points down from the 15 percent affluence cut-off. All the model's significant variable coefficients remain within the 95 percent confidence interval when the definition of the dependent variable is altered.

Table 2.1: Logistic regression of affluence

	Model 1 1995	Model 2 1995	Model 1 2000	Model 2 2000
Observations	28 349	28 349	25 821	25 821
Pseudo R^2	0.5438	0.5454	0.5014	0.5024
Constant	-7.51***	-7.47***	-5.50***	-5.51***
	(-19.50)	(-19.70)	(-4.75)	(-14.43)
Coloured	0.42***	0.42***	0.56***	0.56***
	(4.03)	(3.96)	(4.92)	(4.90)
Indian	1.08***	1.08***	0.91***	0.90***
	(9.17)	(8.86)	(5.91)	(5.76)
White	2.16***	1.02	2.31***	-0.25
	(29.95)	(1.11)	(22.94)	(-0.14)
Rural	-0.28***	-0.26***	-1.23***	-1.23***
	(-3.76)	(-3.53)	(15.55)	(-15.56)
Proportion workers	1.18***	1.26***	1.20***	1.23***
	(7.26)	(7.73)	(7.49)	(7.64)
Number of dependants	-0.63***	-0.62***	-0.62***	-0.62***
	(-15.56)	(-15.68)	(15.09)	(-15.19)
Female household head	-0.61***	-0.63***	-0.81***	-0.83***
	(-8.26)	(-8.56)	(11.47)	(-11.62)
Age of household head	0.14***	0.14***	0.15***	0.15***
	(11.09)	(11.35)	(9.79)	(10.10)
Age of household head squared	-0.0013***	-0.0013***	-0.0013***	-0.0013***
	(-9.79)	(-10.07)	(-8.00)	(-8.31)
Education of household head	-0.04	-0.14***	-0.21***	-0.24***
	(-1.20)	(-3.70)	(-7.56)	(-9.01)
Education of household head squared	0.0231***	0.0301***	0.0315***	0.0341***
	(11.92)	(13.87)	(16.80)	(18.59)
White-Education interaction		0.36**		0.58*
		(2.26)		(1.79)
White-Education interaction Squared		-0.0220***		-0.0304**
		(-3.16)		(-2.14)

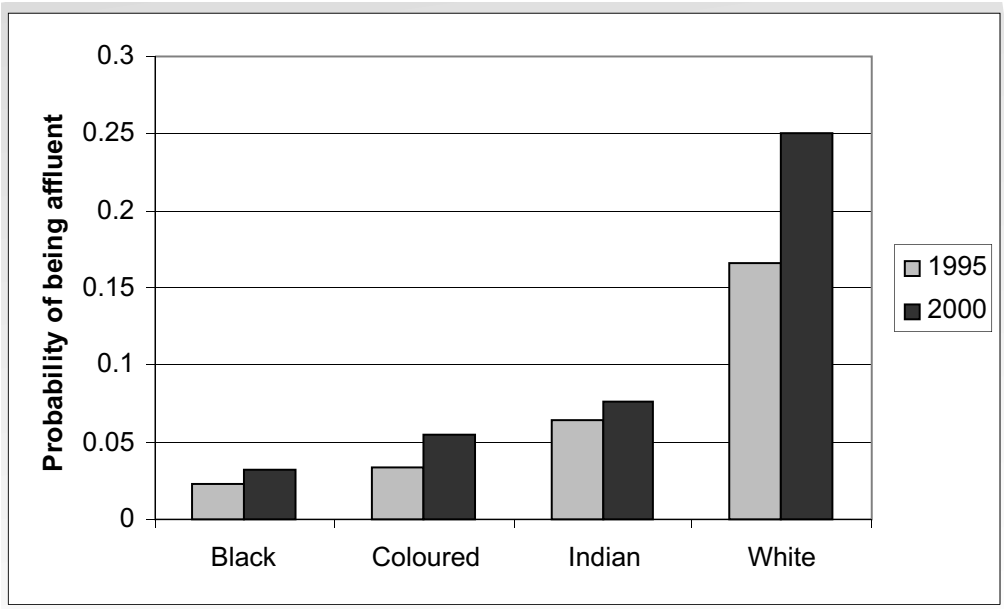
Note: The reference household is black, urban and living in the Eastern Cape with a male household head. Although not reported here, the regression controlled for province of residence

*Significant at 10 percent level, ** Significant at 5 percent level, *** Significant at 1 percent level

The dummy variables representing the different population groups are all significant (and particularly so for whites),[9] indicating that race is an important predictor of household affluence. Between 1995 and 2000 the magnitude of all the white dummies increased, while the significance value declined, which could be indicative of a less uniform impact of race on the probability of being affluent.

The change in the impact of race on affluence is illustrated in Figure 2.1, which varies the population group for the selected reference group.[10] As expected, *ceteris paribus,* coloured or Indian households have a substantially higher likelihood of being affluent than black households. The figure also shows that white households remain considerably more likely to be affluent than any of the other population groups.

Figure 2.1: Probability of being affluent by population group



Note: Here the reference group is a three-member, rural household living in KwaZulu-Natal with and one working household member and a 40-year old, male household head with a Grade 6 education.

The household head's years of education and years of education-squared are both also included as explanatory variables. For both surveys, the education-squared terms are

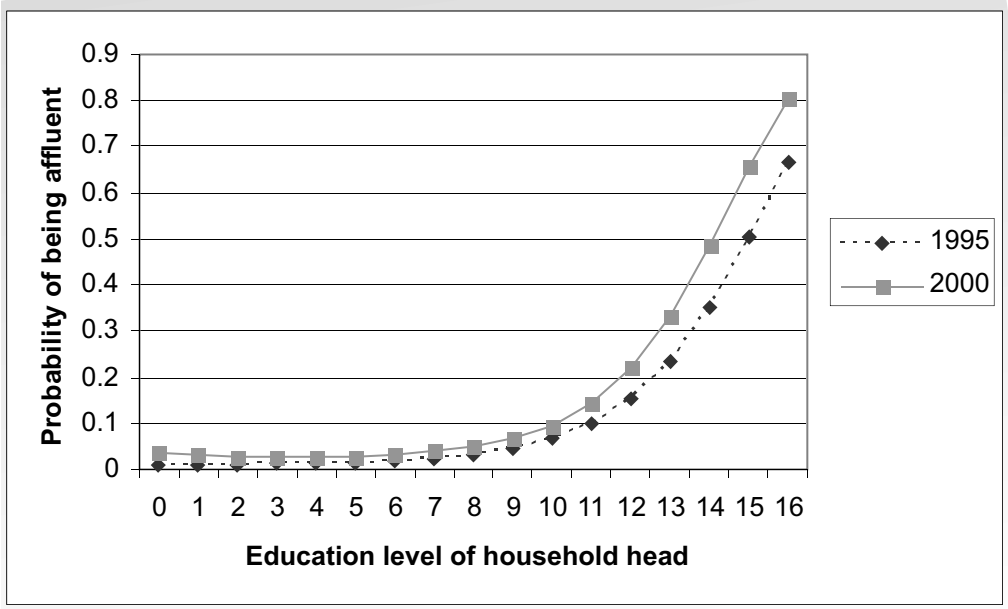
9 Unless specified otherwise, significance will refer to a 5 percent level of significance.

10 Since the reference group only determines the initial value from which the population group of the household head is varied, and is independent of the magnitudes of the coefficients, the reference groups were chosen merely in order to obtain comparable initial values between survey years which is useful for graphical analysis of logit coefficients.

positive, indicating that the relationship between years of education and the likelihood of being affluent is convex. This is in line with Keswell's finding (2001:16) that "having more education does not seem to make much difference unless the education obtained is substantial (beyond 10 years)".

Surprisingly, the education terms are significantly negative for both surveys. The combined effect of these two variables is that the probability of being affluent declines with additional years of education at low levels of educational attainment. Figure 2.2 illustrates the expected probabilities of being affluent, where the level of educational attainment is varied for the specified reference group. Having a household head with a tertiary education rather than secondary or primary education can also be seen to radically improve the probability of being affluent. The turning points are at low levels of educational attainment: before Grade 2 in 1995 and just after Grade 3 in 2000.

Figure 2.2: Probability of being affluent by level of educational attainment



Note: The reference household is a black, four member household living in urban KwaZulu-Natal with one worker and a 35 year old, male household head.

There are at least two different explanations for the negative education coefficient at low education levels. Firstly, the negative coefficient for years of education could simply be due to misspecification of the functional form. If the true underlying effect of additional education on being affluent is negligible at low levels of educational attainment and thereafter it starts to increases at an exponential rate, the specification used in our model (i.e. including years of education and years of education squared) can yield a negative coefficient for years of education. This explanation would be consistent with the fitted shape of the education curves in Figure 2.2.

Another possible explanation is that no educational attainment might reflect the lack of access to education, whereas a low level of educational attainment shows an access to education, but also reflects a self-selection which is indicative of some personal characteristics (such as a lack of resolve). This might imply that those with low levels of educational attainment are indeed less likely to possess the qualities often required in order to become affluent than those with no education at all. Since there are no observations for which the household head only obtained either Grade 1 or Grade 2 in 1995 (those levels of education for which the regression predicts negative returns), it is impossible to distinguish between the two afore-mentioned explanations. Re-estimating the 2000 regression with a separate dummy variable for every different year of education shows that the probability of being affluent is not significantly different when the household head has a Grade 1 education but significantly lower when having a Grade 2 education rather than having no education. There is no significant difference between a household head with no education and a Grade 3 education. This result implies that the second explanation is more likely to be the reason for the negative coefficient for the years of education variable.

In an attempt to control for quality of education, the second model introduces an interaction effect between white and educational attainment – following Kingdon and Knight (2002) and Chamberlain and Van der Berg (2002) in assuming that it is plausible that quality of education is systematically related to the race of the household or at least perceived as such by employers. The coefficients of the white-education interaction and the square of this interaction effect are significant. In the presence of the two new variables the white population group dummies become insignificant.[11] This suggests that the superior quality of education that whites received under apartheid could be the most important remaining avenue whereby whites are advantaged relative to other race groups in the labour market.

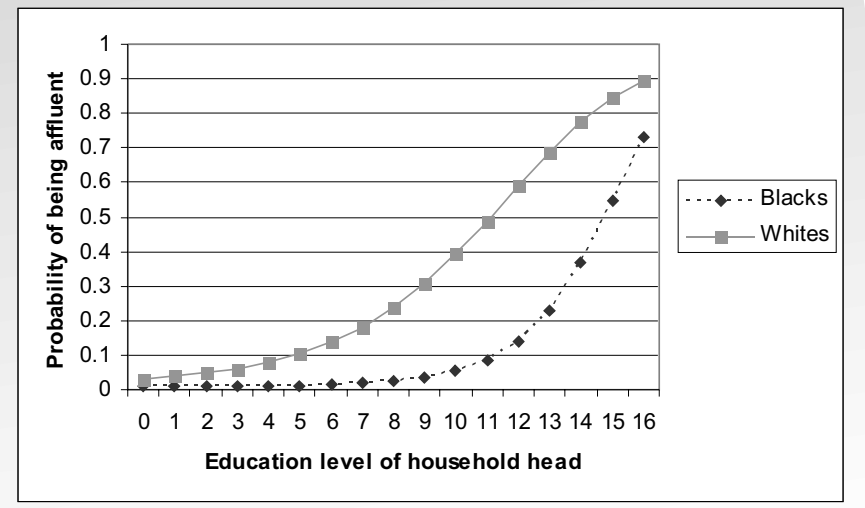
Accounting for variation in education quality results in a marginal increase in the explanatory power of the model, so for the rest of this section the discussion will focus on the second model in Table 2.2.[12]

11 It is interesting to note that the same effect is not present for other race groups. When including interaction variables for education and the Indian and Coloured population groups respectively, the interaction variables were not significant in any of the cases for either year.

12 There is a marginal increase in both the R^2 and the number of observations that are correctly classified as being affluent or non-affluent at a probability cut-off value of 50 percent (not shown in Table 2.1).

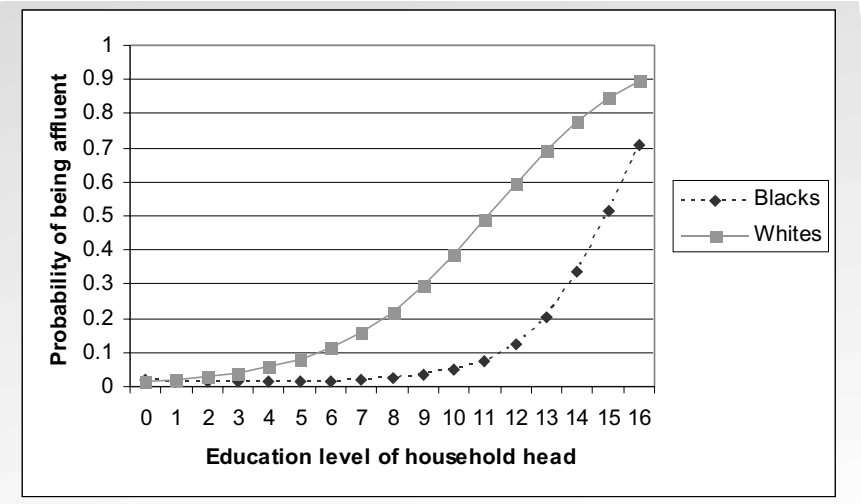
Figure 2.3 and 2.4 incorporate the impact of the educational attainment and white interaction coefficient, into the representation of the relationship between educational attainment and the likelihood of affluence. The black education curves look similar to those in Figure 2.2, but the returns to education for whites are now concave for both years and higher for all levels of education in 1995. An unusual shift took place in the education curve for whites in 2000. At educational attainment levels below four years the white tail now falls below that of the black population group. Since only two of the 1 584 white observations have less than four years of education in 2000, this part of the curve should be disregarded.

Figure 2.3: Probability of being affluent, by population group and educational attainment (1995)



Note: The reference household is a black, four member household living in urban Limpopo with one worker and a 45 year old, male household head.

Figure 2.4: Probability of being affluent, by population group and educational attainment (2000)

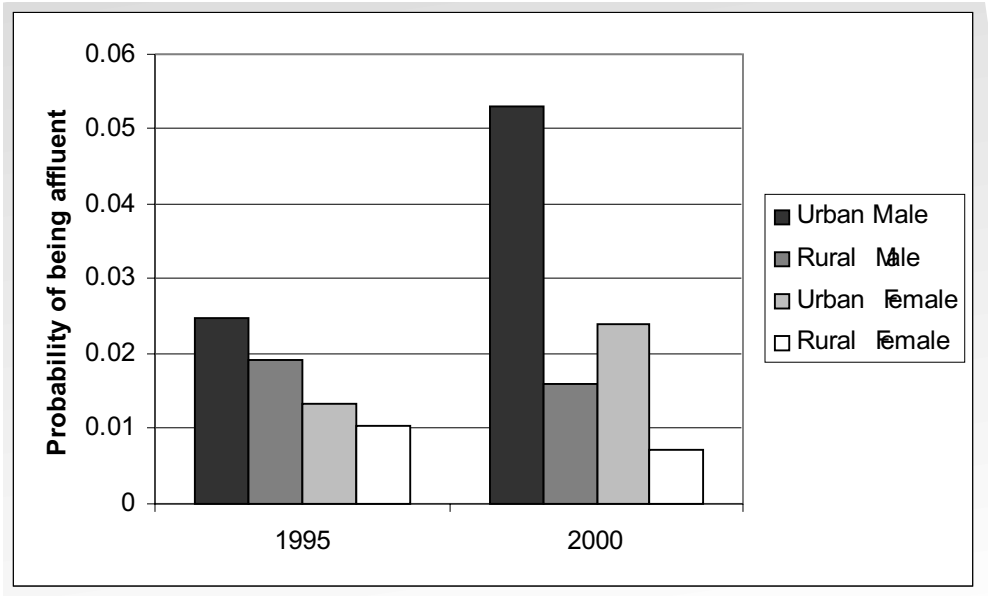


Note: The reference household is a black, four member household living in urban Limpopo with one worker and a 45 year old, male household head.

Considering the impact of geography, the model shows that the rural indicator is significant and reduces the likelihood of affluence in both 1995 and 2000. The effect of the province of residence is weaker. Only the dummies for Free State and Northwest Province are significant in both years and the coefficient of the Free State dummy switches its sign.

The gender of the household head was also highly significant in both years. Figure 2.5 illustrates the effect of having a female, rather than a male household head and living in a rural rather than in an urban area for both surveys. The figure demonstrates that gender was a more powerful predictor of affluence than living in an urban area in 1995, but that the area of residence was more important in 2000.

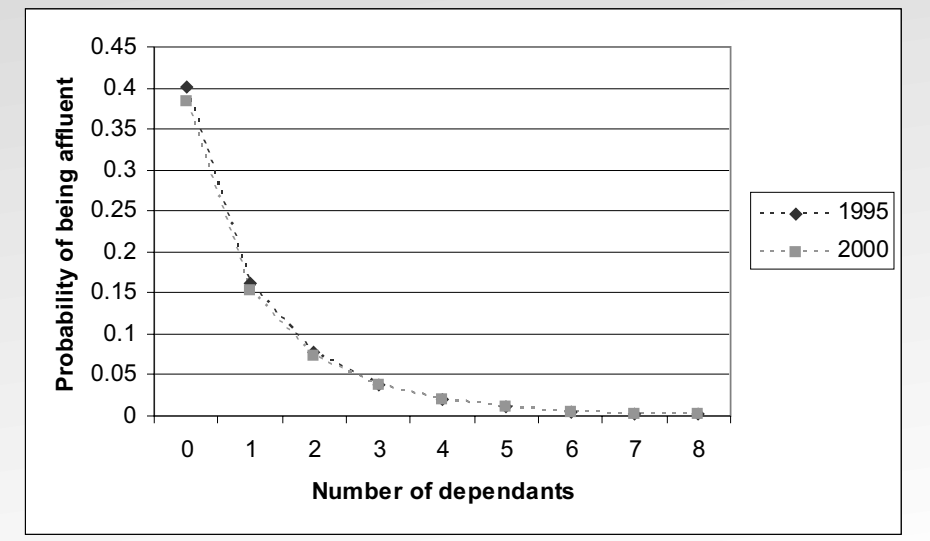
Figure 2.5: Probability of being affluent by gender of household head and area of residence



Note: The reference household is a black, five member household living in rural Limpopo with one worker and a 35 year old household head with Grade 8 education.

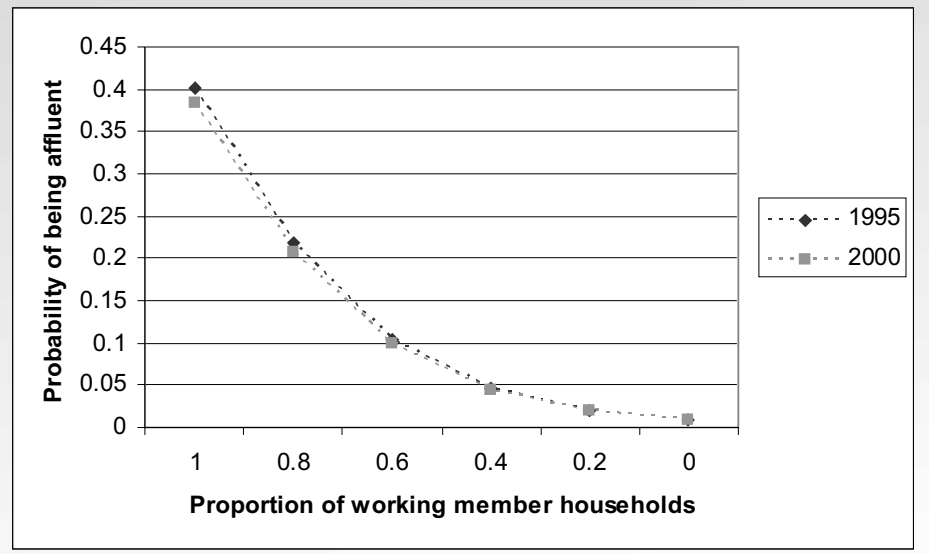
The number of non-working household members and the proportion of employed household members are both strongly significant in 1995 and 2000. The magnitudes of the coefficients are also very similar as is illustrated by Figures 2.6 and 2.7. It can be observed that the probability of being affluent decreases dramatically as the number of non-working household members in the reference group increases. The probability of being affluent can also be seen to decrease steadily as the proportion of household members who work decreases.

Figure 2.6: Probability of being affluent by number of non-working household members



Note: The reference household is a black household living in rural Limpopo with one worker and a 50 year old, male household head with Grade 7 education.

Figure 2.7: Probability of being affluent by proportion of household members who work



Note: The reference household is a five member black household living in rural Limpopo with a 50 year old, male household head with Grade 7 education.

In both years the age and age-squared variables (allowing for a non-linear effect for age) had a significant impact on the probability of being affluent. Age can here be interpreted as a proxy for years of experience. As both theory (e.g. Mincerian earnings functions) and empirical studies (e.g Bhorat and Leibbrandt (2001: 125)) would suggest, the coefficient of the age variable is positive and the coefficient for the age squared variable is negative.

Having an older household head increases the probability of being affluent at a decreasing rate until it reaches its turning point in the mid-fifties (54 in 1995, 57 in 2000). After this point, an older household head is related to a decreasing probability of being affluent.

To focus more narrowly on the income dynamics within the black population, we estimate a logistic regression for the black households. Based on the earlier observation that single-member households were seemingly an increasingly important phenomenon among blacks, a single household dummy variable is added to the regressors we used in the original full sample logit model (Table 2.1). The results of this logistic regression are presented in Table 2.2.

Table 2.2: Logistic regression of affluence for black sample

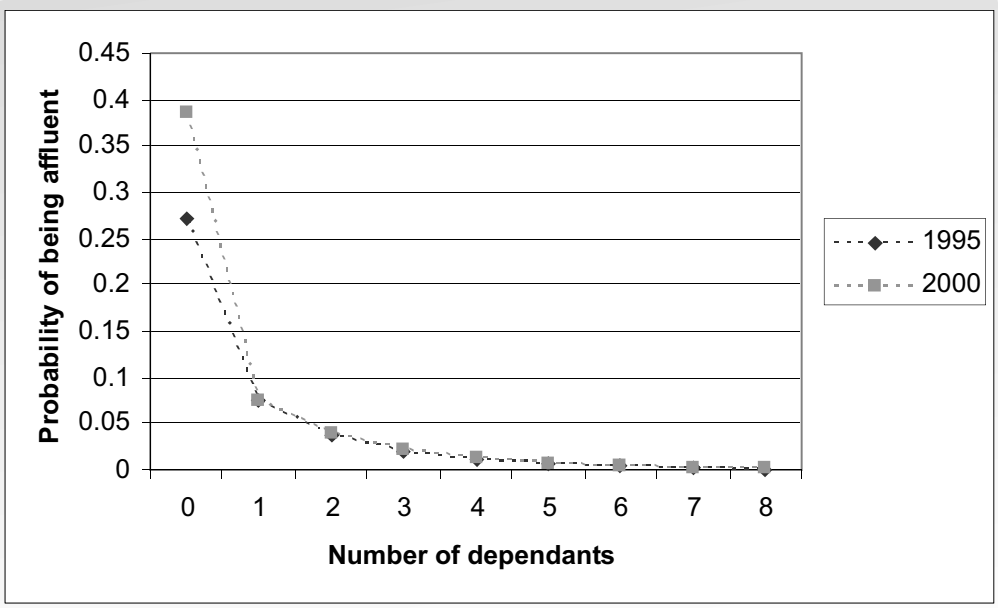
	1995	2000
Observations	18 522	20 499
Pseudo R^2	0.4053	0.4078
Constant	-0.02 (-3.16)	-8.06*** (-14.40)
Rural	-0.26*** (-3.53)	-1.27*** (-12.74)
Workers as proportion	1.26*** (7.73)	1.13*** (6.62)
Number of dependants	-0.62*** (-15.68)	-0.51*** (-9.78)
Single member households	0.36** (2.26)	0.96*** (9.50)
Female household head	-0.63*** (-8.56)	-1.04*** (-11.36)
Age of household head	0.14*** (11.35)	0.24*** (9.58)
Age of household head squared	-0.0013*** (-10.07)	-0.0021*** (-7.60)
Education of household head	-0.14*** (-3.70)	-0.27*** (-8.95)
Education of household head squared	0.0301*** (13.87)	0.0379*** (18.09)

Note: The reference household is urban, living in the Eastern Cape with a male household head. Although not reported here, the regression controlled for province of residence.

*Significant at 10 percent level **Significant at 5 percent level *** Significant at 1 percent level

In most respects the results resemble that of the logistic regression for the survey's full sample of affluent. The rural dummy is significant and with the expected sign. As in the full sample logistic regression, the Northwest dummy is positive and significant.

Figure 2.8: Probability of being affluent, by household size



Note: The reference household is a black household living in rural Limpopo with a one worker and a 50 year old, male household head with Grade 5 education.

The single member household dummy variable is negative and significant. This indicates that even after correcting for the cost of an additional household member, being a single-member household significantly increases the probability of being affluent. Figure 2.8 plots the expected probability of being affluent for different household sizes, showing that for the black population group the overall relationship between household size and affluence is roughly similar between the two years, with a steep rise in a single member household's likelihood to be affluent.

This observation is in line with the research of McElroy (1985), Ermisch & DiSalvo (1997), Card & Lemieux (1997) and locally also Klasen & Woolard (2000: 11-14) and Keller (2002:22) that find that vulnerable individuals (e.g. the unemployed) are less likely to leave their current household to set up their own households. Accordingly, single member households are expected to be a self-selected group with higher than average levels of employment and affluence.

The regression shows that the age of the household head raises the probability of being affluent at a decreasing rate. Returns to education are convex beyond Grade 3 in 1995 and Grade 4 in 2000.

The next section uses cluster analysis to identify natural groupings among affluent households in 1995 and 2000. Due to problems with the surveys, the paper has chosen to steer clear of comparisons between the two survey periods in the regression analysis. The cluster analysis was based on dissimilarities in eight household characteristics, most of which were demographic variables. Surveying of demographic variables is more straightforward than querying households regarding their income and expenditure; hence demographic variables are generally more reliably reported, thus providing grounds for a comparison between the two years in the section below.

3. Typology of the affluent

Cluster analysis is utilised to find groupings with shared traits and characteristics among the sample of affluent in the 1995 and 2000 survey.[13] The observations are partitioned into four non-overlapping groups or types according to dissimilarities in per capita income and predictors of affluence using the Minkowski distance metric as the measure of dissimilarity.[14]

According to Table 3.1, race is a prominent identifying characteristic for all four types that emerge from the analysis for 1995. The first two groupings are comparable in terms of the average age of the household head (37 and 38 years respectively), but the first group is predominantly white (94 percent) and has a substantially higher average per capita household income and years of educational attainment than the second group that is predominantly black (87 percent). Both groups are fairly reliant on wages as source of income: it comprises more than 70 percent of household income for both groups.

The third and fourth groups are both largely white, with per capita income, age and educational attainment being the main differentiating features. The third group's average household income of R51 637 is less than a fifth of the fourth group's average household income of R293 328. More than half of the fourth group's income is derived from net profit while it represents only 12 percent of income for the third group. Part of the income gap could be due to differences in educational attainment. The difference in the average age of the household head points to an additional explanation for the income gap. According to the model in section 2 the likelihood of affluence is the highest at the age of 46 and declines after this point. Given that the fourth group has an average household head age of 60 years compared to the 47 years average of the fourth grouping, it is thus not entirely surprising that the household income of the third group is substantially higher than that of the fourth group. 23 percent of the third group's income is from pensions.

13 In both years the number of types was specified as five, but in both 1995 and 2000, one identified type has been omitted because it consisted of fewer than 10 observations. Consequently, the columns do not add up to the totals provided.

14 Variables were standardised to have a zero mean and standard deviation of one.

Table 3.1: Race, per capita income, household size, age and education per type for 1995

Types	Type as share of total	Black	Coloured share	Indian share	White share	Per capita income	Age	Education	Household size
1	0.44	0.00	0.02	0.03	0.94	R46 577	36.6	12.9	3.21
2	0.23	0.87	0.08	0.05	0.00	R35 228	37.7	11.0	2.56
3	0.30	0.06	0.02	0.03	0.89	R51 637	60.4	11.8	2.17
4	0.02	0.14	0.00	0.04	0.82	R293 328	47.2	12.9	2.50
All affluent		**0.22**	**0.04**	**0.04**	**0.71**	**R51 886**	**44.2**	**12.1**	**2.74**

Gauteng is strongly represented among all four types of affluent, and particularly prevalent among the first grouping of young whites. The shares of Eastern Cape, North West and Limpopo are noticeably higher for the group of young blacks than for the other three types. The share of Western Cape residents appear to vary with the proportion of whites.

Table 3.2: Provincial residence per type in 1995

Types	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpumalanga	Limpopo
1	0.17	0.05	0.02	0.05	0.13	0.04	0.48	0.04	0.03
2	0.07	0.11	0.01	0.06	0.15	0.11	0.34	0.02	0.14
3	0.19	0.07	0.02	0.06	0.14	0.05	0.40	0.04	0.04
4	0.17	0.10	0.01	0.05	0.12	0.09	0.39	0.02	0.06
All affluent	**0.15**	**0.07**	**0.02**	**0.05**	**0.14**	**0.06**	**0.42**	**0.03**	**0.06**

Table 3.3 shows the strong urban presence of type 1 and 3, which combined includes almost all of the white affluent and 74 percent of all the affluent. Type 2 and 4 have better rural representation.

Table 3.3: Rural residency and gender of household head per type in 1995

Types	Proportion Urban	Proportion Rural	Proportion Male	Proportion Female
1	0.92	0.08	0.90	0.10
2	0.77	0.23	0.84	0.16
3	0.91	0.09	0.78	0.22
4	0.67	0.33	0.87	0.13
All affluent	**0.88**	**0.12**	**0.85**	**0.15**

Table 3.4 details the results of the cluster analysis for the 2000 survey. There are sharper differences between group averages for years of education while the race effect is somewhat less pronounced than in 1995, pointing towards a growing role for productivity related characteristics rather than race in determining the groupings among the affluent.

A non-racial group of affluent emerges with almost half of the group consisting of blacks and 36 percent whites. This type captures 45 percent of the affluent and is young with an average household head age of 34. The group has an average household income per capita of R 32 666, which is below the average for the affluent, but household heads belonging to this group have educational attainment levels exceeding the average for the affluent, suggesting that income might rise to match or exceed average levels for the affluent as the group matures.

Apart from the non-racial group, there are two predominantly white groups and one mainly black group. The predominantly white groups have the highest and second highest average household income per capita. The non-racial group has an average educational attainment of 12.7 years and the black group's average is 5.7 years. Of the two predominantly white groups of affluent, the more affluent group has a 14 year education average and the less affluent group's average is 12.3.

Table 3.4: Race, per capita income, household size, age and education per type for 2000

Types	Type as share of total	Black share	Coloured share	Indian share	White share	Per capita income (1995-prices)	Age	Education	Household size
1	0.17	0.96	0.03	0.01	0.00	23 221	44.6	5.7	1.4
2	0.30	0.05	0.06	0.05	0.83	38 411	57.4	12.3	2.9
3	0.07	0.12	0.06	0.03	0.79	136 402	42.5	14.0	1.9
4	0.45	0.48	0.11	0.05	0.36	32 666	34.2	12.7	2.6
All affluent		**0.41**	**0.08**	**0.04**	**0.47**	**40 264**	**43.6**	**11.5**	**2.4**

According to Table 3.5, 41 percent of the predominantly black group lives in Gauteng with the bulk of the remaining members spread between the Free State, KwaZulu-Natal, the NorthWest and Mpumalanga. 55 percent of the highly affluent white group lives in Gauteng.

Table 3.5: Provincial residence per type in 2000

Types	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpumalanga	Northern Province
1	0.04	0.03	0.01	0.14	0.10	0.13	0.41	0.10	0.03
2	0.23	0.09	0.02	0.06	0.16	0.03	0.35	0.04	0.02
3	0.18	0.04	0.02	0.05	0.09	0.03	0.55	0.01	0.02
4	0.17	0.08	0.02	0.05	0.14	0.07	0.39	0.05	0.04
All affluent	**0.16**	**0.07**	**0.02**	**0.07**	**0.14**	**0.06**	**0.39**	**0.05**	**0.03**

The mainly black group's low average income (R23 221), low level of average educational attainment (5.7 years), small average household size (1.4) and the dominance of males (92 percent) suggests that many of this group's members may be unskilled migrant labourers. Remittances represent an average of 17 percent of this group's expenditure while remittances' share of expenditure is negligible for all other affluent groups. If the average household income per capita was redefined to exclude support provided to other households or to include the additional individuals who are dependent on this household's income, most of this group would fall below the R22 500 per capita per year line of affluence.

Table 3.6: Rural residency and gender of household head per type in 2000

Types	Proportion Urban	Proportion Rural	Proportion Male
1	0.92	0.08	0.92
2	0.95	0.05	0.79
3	0.94	0.06	0.80
4	0.92	0.08	0.79

Conclusion

The paper shows that the prevalence of Black affluence is low, but has grown considerably. Blacks' share of the affluent rose from 22 percent in 1995 to 41 percent by 2000. The proportion of blacks among the very affluent increased from 15 percent to 28 percent over the same period. However, it should be noted that the survey may overestimate shifts in the racial composition of affluence during this period due to underenumeration of whites in the 2000 IES/LFS. Adjusting for the survey's overstatement of growth in black affluence is unlikely to affect the conclusion that there has been a strong increase in the social mobility of blacks since the political transition in 1994. It is clear that there has been substantial progress in eradicating labour market discrimination.

The analysis of the upper part of the income distribution confirms many of the traditional views of social mobility in South Africa which have mostly been acquired through analysing the lower part of the income distribution. The paper finds a robust association between affluence and the gender and age of the household head as well as rural residence. These relationships appear to be robust across population groups.

The paper's results are also consistent with convex returns to education and a substantial role for the quality of education. The persistent significance of the white education interaction effect shows that racial differences in the returns to education have endured. Analysis of South African education data demonstrates that blacks are still receiving an education that is inferior in quality, which strengthens the plausibility of education quality as an explanation for the continued significance of the interaction effect. Thus, it appears that race continues to be an important determinant of the allocation of characteristics that earn a return in the labour market, thus constraining social mobility.

The typology of the affluent indicates the race effect is somewhat less pronounced in 2000 and while there are sharper distinctions between group averages for years of education, suggesting an increase in the importance of productive characteristics in determining the delineation of groupings among the affluent. The analysis for 2000 shows the emergence of a large, young, racially integrated generation of affluent, which can be optimistically interpreted as evidence of a move towards a dynamic non-racial society.

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Addendum A: 1995 OHS/IES and the 2000 LFS/IES[15]

Concerns relating to field work, data entry and coding

There are several problems in the Income and Expenditure survey (IES) 2000 relating to the individual observations. There are 308 cases where the survey either gives a missing value for the household's food expenditure or reports zero expenditure. The survey also shows a strong increase in the proportion of households that paid no income tax (from 49 percent in 1995 to 77 percent in 2000) which does not seem plausible. On the income side there are also problems with some categories: the sharp decline in occupational perquisites, share of income attributable to the household as a whole and other specified and unspecified income may point towards a deterioration in the quality of field work in 2000. The definitions and categories in the survey were designed so that income and expenditure should add up to the same total, but there are worrying discrepancies between income and expenditure totals in the 2000 survey. Only 3.6 percent of the observations in the 1995 survey had a difference between total income and total expenditure that exceeded 30 percent, compared to 13.7 percent of the observations for the IES 2000 survey.

There are also some simple addition mistakes in the 2000 survey: some of the recreation/entertainment and housing subtotals were miscalculated and grain was double counted in total expenditure. For several observations the components of income do not add up to total income.

There is evidence that suggests that the data quality might be particularly poor for Gauteng. This problem might have an impact on the reliability of the conclusions of this paper because a substantial share of the emergent black affluent lives in Gauteng.

In both 2000 and 1995 there are problems with the matching of individuals and households between the IES and the related LFS, which could be attributed to field work, coding or data entry mistakes. When trying to merge the 2000 IES and LFS, 103 732 cases match successfully, but there are 1 639 cases unique to the LFS dataset and 421 cases unique to the IES. Of the matched cases, there are 268 cases for which the race variable from the two datasets does not match, 839 for which gender does not match, and 1 263 cases for which age does not match (only 178 of these cases had an age difference of one year, which one can probably safely ignore). There are 2087 cases where one or more of these variables (race, gender, age) do not match between the two datasets. Altogether 8984 individuals are members of households for which one or more of these variables do not match across the two datasets, leaving only 96 808 individuals in households where there are no matching problems of some sort (91.5 percent of 105 792 cases in the two datasets, or 92.9 percent of the 104 153 cases in the IES person dataset).

15 This summary of the problems in the IES 2000 draws on comments from Laura Poswell, Charles Simkins and Ingrid Woolard.

Concerns relating to sampling

There is also evidence of overnumeration of the white population in 1995 and underenumeration of the white population in 2000. The 1995 sampling frame also undercounted single black households in 1995 and this was corrected in 2000.

The sampling and weighting problems in the surveys result in discrepancies between the demographic and income data given by external data sources and the weighted totals of the IES. The national accounts say that real household income per capita rose 7 percent from 1995 to 2000, while comparisons between the IES 1995 and 2000 indicate that income per capita had fallen. Also, the 1995 IES overestimates the population size and the 2000 IES underestimates the population size.

The problems with the survey's field work and sampling frame result in substantial discrepancies between National Accounts and the 2000 IES' estimation of total income. In an attempt to correct for this discrepancy, income was adjusted upwards by 38 percent. Because the measure of affluence used in 2000 was defined relative to affluence in 1995, the adjustment to IES only aimed to match income changes in the two IES surveys to changes in National Accounts totals over the period.