Race, Class, Schooling and Segregation: Blacks, Coloured, Indians, and Whites in Pretoria, Witwatersrand and Vereeniging

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This paper accesses the mechanisms in which residential segregation impacts the lives of individuals living in the Pretoria, Witwatersrand, and Vereeniging (PWV) area of South Africa. Specifically, this paper will focus on the relationship between residential segregation and schooling and income inequality among all racial groups in South Africa. Recent analysis on post apartheid South Africa indicates that racial residential segregation at the magisterial district level remains very high among the Black/ African and Coloured populations and White and Coloured populations (McClinton and Zuberi, 2006) [i].[ii] This paper builds upon the previous research through indirect standardization methodology, which redistributes the population on the basis of household characteristics in the South African context.

Previous research which employs the indirect standardization method in based on the US context (Kain, 1986; Farley, 1995; Darden and Kamel, 2000; Charles 2001). The use of indirect standardization methodology yields consistent findings that racial factors account the residential segregation patterns in US metropolitan areas. Using four household characteristics, Kain (1986) employed indirect standardization to examine the relationship between socioeconomic status and residential segregation patterns in Cleveland and Chicago for 384 and 216 household types, respectively. Kain (1986) concludes that blacks in Cleveland live in ghettos regardless of their socioeconomic status and the predicted distribution of Chicago's black household differs greatly from the actual distribution. Farley (1995) utilizes 1990 St. Louis census data to examine the relationship between socioeconomic factors and residential segregation patterns between blacks and whites. Based on the analysis, Farley concludes that poor blacks were as segregated from poor whites as blacks were segregated from white overall and similar findings were true for middle class and wealthy individuals and race remain significant in where people reside, "even more than it did in the past" (1995, 252).

The current racial dynamics in South Africa are consequences of racism and are connected to the history of capitalism and imperialism (Magubane, 1979). Apartheid was an ideological system and maintained a politically conscious class division of White and Black/ African laborers (MacDonald, 2006). The purpose of apartheid laws was to keep the subverted Black/ African class in its place. The politically conscious class was limited to individuals with political power, in which membership was predominately afforded to only Whites. In addition to political disenfranchisement, Black/African laborers were denied certain jobs and the tenets of White supremacy were maintained as racial inequality became more pervasive (Magubane, 1979). Under the apartheid regime, individuals were not only segregated occupationally but residentially on the basis of race. A thorough analysis which redistributes the population on the basis of socioeconomic status provides a further understanding the harsh realties of the impact of a legacy of racial discrimination.[iii]

The remainder of the paper proceeds as follows. First, I describe the current racial residential patterns in the Gauteng province, with focus on Pretoria, Witwatersrand, and Vereeniging. I show the current pattern of racial residential patterns for all racial groups included in the 1996 and 2001 South African census. Secondly, I determine whether the levels of Coloured segregation from Africans/ Blacks, Indian/ Asian segregation from Africans/ Blacks and White segregation from Africans/Blacks remain high even when each racial group have comparable levels of occupation, income and schooling.

Apartheid in South Africa

Segregation began with the Dutch, who reigned from 1652 to 1806 and continued through the nineteenth century with the British colonizers (Beinart and Dubow, 1995). However, modern segregation is a result of industrialization in South Africa, which resulted from the exploitation of gold and diamonds during the late nineteenth century. During this period, the ideology of segregation was refined and fully extended to everyday life (Beinart and Dubow, 1995). Legislatively, after the Union of 1910, individuals of European descent used their political, economic and social power to impose one of "the most extreme forms of racial segregation in the twentieth century world" (Beinart and Dubow, 1995).

History reveals that legislatively, South Africa sought to sustain residential segregation. During the period of segregation in South Africa, several legislative acts were passed to insure the separation of the races, including the Mines and Works Act of 1911, the Native Land Act of 1913, the Urban Area Act of 1923, and the Native Trust and Land Act of 1936. The Native Land Act of 1913

limited land ownership for blacks to black areas. The Native Trust and Land Act of 1936 reinforced the Native Land Act of 1913; however it gave Blacks/ Africans exclusive rights to their “homelands" but ownership was unlikely for most blacks as a result of high rents and availability of land. Segregation transformed into apartheid in 1948 and continued until 1990. Apartheid was a continuation and extension of the segregationist policies of previous White colonial administrations. After the election of the Nationalist Party in 1948, laws were passed, in which individuals were characterized at birth as White, Asian, Coloured or Black/African. Apartheid forbade interracial sexual relationships and marriages and social institutions, such as schools, restaurants, and libraries were firmly divided by racial boundaries (Prohibition of Mixed Marriage Act of 1949, Immortality Act of 1950 and Bantu Authorities Act of 1951). Apartheid encompasses four ideas: the classification of four racial groups: Blacks/ Africans, Whites, Coloureds and Indians (defined in the Population Act of 1950), Whites maintain control over the state, Whites’ interests subsisted over Blacks’/ Africans' interests , and Whites belong to one single nation and Blacks/Africans belong to several nations (Thompson 2000). Apartheid was successful in impacting every aspect of individuals daily lives, residentially, economically, educationally, and politically.

Post Apartheid in South Africa

Christopher (2001) provides an analysis of the residential segregation using the 1996 census data to investigate whether segregation levels have decreased since the end of "legal "apartheid in 1991. The author concludes the following: 1. Africans have achieved some integrated but housing choices are restricted by poverty 2. Asians and Indians have achieved the greatest integration level as these groups migrated to back metropolitan areas which they were forced to move from according to the 1950 Population Act 3. Whites remain the most segregated and less receptive to integration than other racial groups. Although Christopher (2001) provides an essential piece of the puzzle of understanding urban areas in post apartheid context, there are several problems associated with the analysis. First, the author fails to detail which racial groups are being compared in order to understand the residential segregation patterns. Specifically, Christopher (2001) describes White indices or Coloured indices, etc.; the reader must decipher whether it is White segregation from Africans or Coloured segregation from whites. Additionally, Christopher (2001) relies on residential segregation measures at the provincial level; however Van Valey and Roof (1976) warns against using large geographical unit of analysis because that type of analysis yields lower residential segregation indices.

Christopher (2005) examines the pace of desegregation in South African from 1996 to 2001. The author concludes that the Coloured population is the only racial group to have encountered substantial desegregation in the post apartheid context. Christopher (2005) fails again to discuss what two groups are being compared. For example Coloured - White segregation looks very different from Coloured - African/Black segregation; however, the author labels it Coloured segregation.

Data and Methods

An updated analysis of racial residential segregation in South Africa requires data collected in the post-apartheid period (see Zuberi et al. 2004). The proposed research will employ 1996 and 2001 census data and data from the 2000 Income and Expenditure Survey (IES). These data are collected by Statistics South Africa and the 1996 census data set is the first set of data collected following apartheid.[iv] These data are archived at the African Census Analysis Project (ACAP) at the University of Pennsylvania. Khalfani et al. (2005) note the "1996 census may have been the most complete enumeration ever taken in South Africa" (Pg, 19). From these census data, I analyze the social and economic consequences of the apartheid era, particularly the differences in living standards, schooling attainment, and residential segregation in post apartheid period in South Africa among all racial groups. The Income and Expenditure Survey (2000) is important because it includes data on the various sources of income and total household income for approximately 24,000 households. The IES is vital to this study because it includes detailed information on individual's income which is excluded from census data.

This paper will combine data from three different sources (1996 and 2001 South African Census and 2001 Income and Expenditure Survey of 2000) to understand the relationship between racial residential segregation and school attainment on South Africa for two historic periods. The

independent and dependent variables are extracted from the 1996 and 2001 South African Census and the 2000 Income and Expenditure Survey. Following the work of Massey and Denton (1998), I compute the index of dissimilarity and a social isolation index to measure racial residential segregation using the census data. Several scholars note that a dependence on one measure of segregation has serious limitations for understanding the link between socioeconomic status and racial residential segregation and schooling attainment (Denton, 1994.). Therefore, I examine at least two dimensions of racial residential segregation in South Africa.

This study employs a 30 percent sample of the 1996 and 2001 South African Population Census. The 1996 and 2001 censuses provide information on age, sex, race, religious affiliation, fertility measures, and economic and school attainment on all individuals in a household. The 1996 census is especially useful because it also includes information on Blacks/ Africans, who were excluded from previous censuses (See figure 2).[v] There are approximately 10,516,225 and 11,187,928 cases included in this analysis for the 1996 and 2001 census, respectively. The 1996 and 2001 Censuses of South Africa includes the category "Black/ African" instead of just "Black".

Table 1 provides a breakdown of racial classification in 1996 and 2001 in South Africa. Blacks/Africans constitute the majority of the total population in South Africa in 1996 and in 2001, accounting for 77.2% and 79.0% of the total population, respectively. Whites only constitute 11.0% and 9.6% of the total population in 1996 and 2001, respectively. Coloureds account for 9.0% and 8.9% of the total population in 1996 and 2001, respectively.

Table 2 provides a breakdown of racial classification in Pretoria, Witwatersrand and Vereeniging in 1996. In Pretoria, Blacks/Africans only constitute 32.5% and Whites constitute 59.2% of the total population, while in Johannesburg Blacks/Africans constitute 36.7% and Whites constitute 34.0% of the total population. In contrast, in Vereeniging, Black/Africans constitute 73.4 % and Whites constitute 20.2% of the total population and in Soweto, Blacks/Africans constitute 99.8 % and Whites constitute only .013% of the total population. By investigating PWV, this paper seeks to address several racial scenarios to understand South Africa as a whole.

Figures 3-6 also show where each racial group predominately reside in South Africa and are based on Geographic Information Systems (GIS) analysis[vi]. Figure 3 indicates that the Black/ African population resides predominately in the eastern region of South Africa. In contrast, figure 4 indicates that the Coloured population resides in the western region of South Africa. While figures 5 and 6 indicate that the White population predominately resides in the northeastern region and the Indian /Asian population does not predominately reside in any magisterial district area in South Africa. I define predominately as any value over fifty percent.

Numerous studies have sought to investigate the use of measurement to understand patterns of urban racial segregation (Christopher 1992, Massey 1985, Page 1988, and Peach 1981). The most common measure of segregation—the index of dissimilarity, a measure of evenness—was introduced by Duncan and Duncan in 1955, and is calculated according to the formula:

$$ID_{xy} \equiv \sum \left(x_i - y_i \right) / 2 \qquad (1)$$

where ID_{xy} is the index of dissimilarity between the spatial distribution of the X and Y populations within the city. In addition, x_i represents the percentage of the X population with the ith tract and y_i represents the percentage of the Y population with the ith tract. Scores on this index, range from 0 (complete integration of the two populations) to 100 (complete segregation), and are interpreted as the percentage of each group that would have to move in order to create neighborhoods with racial compositions identical to that of the metropolitan area (Duncan and Duncan 1955). According to the criteria outlined in Massey and Denton (1993), in their study of racial residential segregation, values below 30 are low; values between 30 to 60 are moderate and anything above 60 denotes high levels of residential segregation. Additionally, Christopher (1992) concludes that the index of dissimilarity provides the best measurement of spatial inequality as a result of the "intense investigation."

I also estimate indices of residential exposure, in addition to the index of dissimilarity (ID). Two basic measures are computed to capture this aspect of residential patterns. The first measure is the interaction index which estimates the degree to which members of minority group X are exposed to members of the majority group Y. Thus, the interaction index is weighted by the minority group (X) of each residential unit's majority population (Y). The interaction index (Lieberson) as defined by

$$_xP^*_y \equiv \sum (x_i / X)(y_i / t_i) \qquad (2)$$

where x_i, y_i, and t_i are the numbers of X members, Y members and total population of unit i and X represents the number of X members city wide. The minority group is denoted by the group which has the smallest proportion of the total population, in comparison to the other group. Hence, the remaining group is denoted as the majority group. The second measure of exposure is the isolation index (Lieberson, 1969), which estimates the degree to which members of minority group X are exposed to one another rather than to members of the majority group Y. Thus, the isolation index is weighted by the minority group of each residential unit's minority population. The isolation index as defined by

$$_xP^*_x \equiv \sum (x_i / X)(x_i / t_i) \qquad (3)$$

Both of the exposure measures vary between 0 and 1.00 and are interpreted as the probability that a randomly drawn X - individual shares an area with a member of Y (the interaction index) or the probability that a X individual shares an area with a member of his or her own group (the isolation index).

The ID is computed for magisterial districts included in the PWV by using data at the enumeration area level to achieve an index for each area. The dissimilarity index gives the percentage of a particular population that must move to represent an even residential population in comparison to another group. Based on Table 4 Black - White segregation remains high in all magisterial districts, ranging from 63.8 to 99.9 percent. Meaning on average, in Soweto, 99.2 percent of the White population would have to move in order to achieve an even or "integrated" magisterial district. To measure exposure, the interaction and isolation index are computed using data from the enumeration area level for the magisterial districts. Table 3 provides the isolation and interaction indices for the 30 most populous magisterial districts in South Africa. The interaction indices are not surprising and are congruent with the other measures of residential segregation. For example, an average interaction index based on magisterial level data between Whites and Blacks/ Africans is 4.56. Therefore, there is a 4.56 probability that a randomly drawn White individual will share an area with a member of the Black / African group. However, there is a .06 the probability that a randomly drawn Coloured will share an area with a member of the White racial group (not shown in the table). Therefore, on average in South Africa, Whites are more like to share a residential area than Coloureds with Africans/Blacks. The smallest geographic level of analysis available from the census is the enumeration area.

In addition, this paper employs indirect standardization. This is a technique used to redistribute the population of a metropolitan area based on the income or housing cost and then compute the expect segregation indexes based on the assumption that one of these factors is the only cause for residential segregation. The segregation indices measure the extent to which observed patterns of residence location by races differ from proportional representation. If low incomes explain the concentration of Blacks in rural areas, we would expect to find that most low incomes Coloured, Indian/ Asian and Whites also live in rural areas and that most high incomes Black/ African live in the city. Household income translated in monthly incomes for the entire household before taxes were collected in categories rather than single rand amounts.[vii] I determine whether the levels of Coloured segregation from Africans/ Blacks, Indian/ Asian segregation from Africans/ Blacks and White segregation from Africans/Blacks remain high even when each racial group have comparable levels of occupation, income and schooling.

References

Beinart, William and Saul Dubow Ed. (1995) S*egregation and Apartheid in the Twentieth – Century South Africa* NY: Routledge

Charles, Camille Zubrinsky. 2001"Socioeconomic Status and Segregation: African Americans, Hispanics and Asians in Los Angeles" in *Problem of the Century: Racial Stratification in the United States*, Eds.Elijah Anderson and Douglas Massey Ed. (2001) Russell *S*age Publications New York

Charles, Camille Zubrinsky. "The Dynamics of Racial Residential Segregation." *Annual Review of Sociology* Vol. 191 (2003) pp.167-207

Christopher, A.J**.** Offical Land Disposal Policies and European Settlement in Southern Africa 1860-1960. *Journal of Historical Geography,*Vol 9 ,No 4(1983), pp 369-383

Christopher, A.J**.** Roots of Urban Segregation at Union , 1910. *Journal of Historical Geography,*Vol 14, No 2(1988), pp 159-169

Chistopher, A.J. Apartheid within Apartheid: An Assessment of Official Intra-Black Segregation on the Witwatersrand, South Africa. *The Professional Geographer* Vol. 41, No3 (1989) pp 328-336.

Christopher, A.J. Apartheid and Urban Segregation Level in South Africa. *Urban Studies*, Vol. 27, No 3 (1990), pp421-440.

Christopher, A.J**.** Urban Segregation Levels in South Africa Under Apartheid. *SSR*, Vol 75 , No 2 (1991), pp 89-94.

Christopher, A.J **.** Segregation Levels in South African Cities, 1911-1985 . *The International Journal of African Historical Studies*, Vol. 25, No. 3. (1992), pp. 561-582.

Christopher, A.J. Urban Segregation in Post -*apartheid* South Africa .*Urban Studies*, Vol. 38, No 3 (2001), pp 449-466.

Christopher, A.J. The Slow Pace of Desegregation in South African Cities, 1996-2001. *Urban Studies*, Vol. 42, No 12 (2005), pp2305-2320.

Duncan, O. and B. Duncan. A Methodological Analysis of Segregation Indices. *American Sociological Review* Vol. 20 (1955) pp 210-217.

Farley, John. Race Still Matters: The Minimal Role of Income and Housing Cost as Causes of Housing Segregation in St. Louis, 1990. *Urban Affairs Review* Vol 31 No.2 (1995):244-54

Kain, John F. 1986."The Influence of Race and Income on Racial Segregation and Housing Policy." In *Housing Desegregation and Federal Policy*, ed. Gary A Tobin Sage Press: Newbury Park ,California:

Khalfani, A. and T. Zuberi and S. Bah, and P.J. Lehohla (2005) "Population Statistics" *in The Demography of South Africa* ed. T. Zuberi, A. Sibanda and E. Udjo M.E. Sharpe: Armonk, New York

Lieberson, Stanley. Measuring Population Diversity. *American Sociological Review*, vol. 34 (1969) pp 850-862.

Magubane, Bernard Makhosezwe (2000) *African Sociology-towards A Critical Perspective* :Trenton: Africa World Press, Inc.

Massey, D. S., & Denton, N. A. (1993). *American Apartheid: Segregation and the Making of the Underclass.* Cambridge: Harvard University Press.

McClinton, Fareeda and Tukufu Zuberi. Jim Crow vs. Apartheid: Racial Residential Segregation in Two Nations; Paper presented at the Population Association of America (March 2006) Los Angeles, Ca.

Sibanda, Amson and Gwedoline Lehloeyna (2005) "Race and Gender Gap in Education" *in The Demography of South Africa* ed. T. Zuberi, A. Sibanda and E. Udjo M.E. Sharpe:Armonk, New York

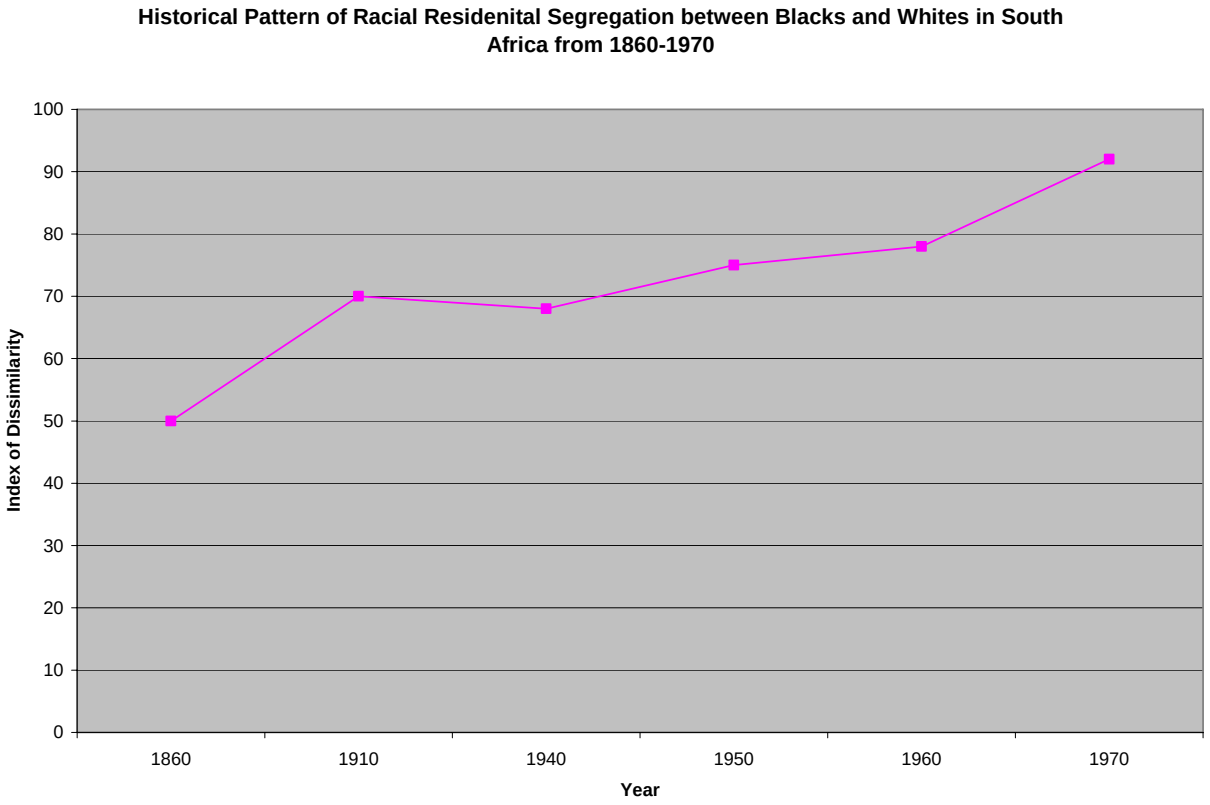
Simpson, E.H. Measurement of Diversity. *Nature*, Vol. 163 (1949) pp.688.

Thompson, Leonard (2000) *A History of South Africa*, New Haven: Yale University Press Urban Foundation. (1990) Population Trends. P*olicies for a New Urban Future*, Urban Debate 2010, 1, Urban Foundation, Johannesburg.

Zuberi, Tukufu and Amson Sibanda and Eric Udjo and Martin Bangha (2005) "Introduction in" *in The Demography of South Africa* ed. T. Zuberi, A. Sibanda and E. Udjo M.E. Sharpe:Armonk, New York

Figures and Tables

Figure 1



Source: **South African Data**: Christopher, A. J . Segregation Levels in South African Cities, 1911-1985 . *The International Journal of African Historical Studies*, Vol. 25, No. 3. (1992), pp. 561-582.

Table 1

Percent of the Population by Racial Classification by Year in South Africa		
Racial Group	**1996**	**2001**
Black/ African	77.2%	79.0%
Coloured	9.0%	8.9%
Indian / Asian	2.8%	2.5%
White	11.0%	9.6%

Table 2

Percent of the Population by Racial Classification by Magisterial District in PWV, 1996				
	Black/African	**White**	**Coloured**	**Asian/Indian**
Pretoria	32.520	59.628	4.079	3.772
Soshanguve	99.832	0.030	0.121	0.016
Wonderboom	70.966	28.442	0.471	0.122
Johannesburg	36.736	34.017	18.717	10.530
Randburg	56.817	40.056	1.663	1.463
Alberton	81.786	14.026	3.372	0.816
Benoni	79.430	15.941	0.534	4.096
Boksburg	62.713	27.368	9.139	0.779
Germiston	26.949	70.088	1.539	1.425
Kempton Park	82.528	16.942	0.383	0.147
Brakpan	74.558	20.895	3.736	0.811
Heidelberg	83.329	15.402	0.453	0.817
Nigel	74.608	18.124	6.017	1.251
Springs	67.681	29.404	0.378	2.538
Krugersdorp	66.853	29.898	0.591	2.659
Oberholzer	75.212	24.134	0.454	0.199
Randfontein	69.707	20.363	9.857	0.073
Roodepoort	54.649	40.761	3.864	0.726
Westonaria	67.390	10.490	7.734	14.387
Bronkhorstspruit	77.725	21.285	0.495	0.495
Cullinan	87.823	11.252	0.886	0.039
Vereeniging	73.445	20.243	4.904	1.408
Vanderbijlpark	86.456	13.116	0.387	0.041
Soweto	99.816	0.013	0.164	0.007

Table 3

Index of Dissimilarity By Provincial Region in 1936 and 1985 (before and during apartheid)		
Province	**ID $_{B\text{-}W\ (1936)}$**	**ID $_{B\text{-}W\ (1985)}$**
Western Cape	**65.2%**	**89.3%**
Eastern Cape	**86.7%**	**95.6%**
Northern Cape	**na**	**Na**
Free State	**83.4%**	**95.6%**
KwaZulu Natal	**47.7%**	**70.3%**
North West	**na**	**Na**

Note: na refers data in which the author did not compute units of analysis: cities
Source: Christopher, A. J. Segregation Levels in South African Cities, 1911-1985 . *The International Journal of African Historical Studies*, Vol. 25, No. 3. (1992), pp. 561-582

Table 4

Enumeration Area Level of Black - White Measures of segregation for the 30 most populous magisterial districts in the Republic of South Africa

Magisterial District	ID_{wb}	$_bP^*_b$	$_wP^*_b$
Goodwood	96.8	92.3	2.5
Wynberg	66.2	36.4	27.1
Mitchellsplain	99.3	98.4	.013
Western Cape Province	93.9	88.0	3.0
Port Elizabeth	96.3	95.7	2.35
Eastern Cape Province	96.4	98.0	15.0
Northern Cape Province	86.9	80.0	11.0
Bloemfontein	89.5	90.8	6.14
Witsieshoek	99.5	99.8	.015
Free State Province	88.3	96.0	21.0
Umlazi	99.8	99.9	.004
Pinetown	93.6	92.8	4.49
Durban	77.3	73.1	15.4
Inanda	98.0	96.1	0.51
KwaZulu Natal Province	94.9	97.0	19.0
Ga-Rankuwa	98.3	99.7	.024
Rustenburg	88.2	95.3	4.01
Temba	99.3	99.9	.017
Klerksdorp	91.7	94.6	4.67
North West Province	91.5	97.0	26.0
Vereeniging	88.4	92.1	5.91
Benoni	95.8	96.3	2.82
Randburg	74.9	81.4	16.9
Alberton	96.5	97.5	1.89
Kempton Park	95.5	96.6	3.09
Vanderbijlpark	95.7	97.5	2.19
Johannesburg	64.7	66.2	22.5
Soweto	99.2	99.8	.012
Pretoria	68.6	71	25.8
Gauteng Province	90.8	92.0	17.0
Nsikazi	99.2	99.8	.005
Mpumalanga Province	90.3	97.0	24.0
Seshego	99.9	99.9	.002
Thohoyandou	97.9	99.6	.082
Thabamoopo	99.5	99.9	.005
Mokerong	99.5	99.9	.007
Sekhukhuneland	98.9	99.9	.052
Pietermaritzburg	95.1	95.3	2.31
Limpopo Province	97.3	99.0	29.0

based on data from the 1996 South African census

Table 5

Overall School Attainment in South Africa		
Schooling Levels	**1996**	**2001**
No Schooling	19.4%	24.2%
Grade 0	0.1%	N/A
Grade 1	1.4%	4.8%
Grade 2	1.9%	3.3%
Grade 3	4.2%	4.3%
Grade 4	4.9%	4.8%
Grade 5	4.8%	4.7%
Grade 6	5.3%	5.1%
Grade 7	6.4%	6.3%
Grade 8	7.4%	7.0%
Grade 9	5.3%	5.6%
Grade 10	7.3%	7.1%
Grade 11	4.5%	5.1%
Matric / Grade 12	13.3%	12.5%

Based on 1996 and 2001 South African Census Data. Based on the question "What is the highest level of education that (the person) has completed?" The categories changed from 1996 to 2001 to include higher levels of schooling. However, the overall meaning of the question, which is to measure the highest level of schooling did not change.

Notes

[i] The classification of people into the Coloured category has changed over time. The idea of the Coloured population developed to keep Coloureds from passing for White and/ or being enumerated as White in the Census. At the time of the 1960 census, Coloureds were defined as all persons not included in the Bantu (Black/ African), Asiatics (Indian/ Asian) and White categories (Khalfani et al, 2005). The Coloured category included the following subclassifications: Afghan, American coloured, Arabian, Bushman, Chinese, Creole, Egyptian, Griqua, Hottentot, Indian, Koranna- " Hottentot Races", Krooman, Malagasy, Malay (Cape), Mauritian, Mixed, Mozambique, Namaqa' " Hottentot Races", Other, St. Helena, Syrian, West Indian, and Zanzibari.(Khalfani et. al, 2005)

[ii] A magisterial district is similar to a metropolitan area in the United States. There are approximately 345 magisterial districts in the 1996 South African census.

[iii] In this paper, I measure socioeconomic factors by household income, schooling attainment, family size, age of the head of the household, occupational status and family type.

[iv] Statistics South Africa is the National statistics board of South Africa. The board was established in 1999 after the Statistics Act, no. 6, by the Parliament of South Africa. The goals of Statistics South Africa are to produce timely, accurate and accessible official statistics in order to advance economic growth, development, and democracy. To this end, Statistics South Africa produces official demographic, economic, and social censuses and surveys. To date, Statistics South Africa has produced two censuses, in 1996 and 2001 and the 2000 and 2005 Income and Expenditure Surveys.

[v] Christopher (1992) uses several censuses from 1911 to 1985 to understand residential segregation in South Africa, which enumerated all racial classifications. The author notes several problems associated with using South African Censuses, such as the under enumeration of the black population and classification of racial categories. Christopher (1992) posits that the black population was exposed to the most extended, intricate and extensive set of segregation measures as opposed to asian / indian, Coloured and White, in the context of black -White segregation.

[vi] Not included due to space limitiation.

[vii] Currently, one American dollar converts to 6.91 South African rands.