Service Delivery in Post Apartheid South Africa: What has Changed? Measuring on Relative Basis

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Introduction

The apartheid legacy left high level of poverty in both rural and urban areas, inequalities in access to resources, infrastructure and social services. Using 1994 October Household Survey data Hirschowitz and Okin (1997) measured relative access to basic services and living conditions amongst demographic segments of households in South African. The study found wide disparities in living conditions, Black African households were found to be much more likely of being at risk of multiple deprivation of access to basic services; housing, water, sanitation, electricity etcetera (Hirschowitz and Okin, 1997). The observed inequalities were further confirmed with the results of the 1996 national census as shown in Table 1. Black African households lagged behind as most of the indicators (education, unemployment, housing, access to water) show in Table 1 followed by Coloured and Indian households.

Table 1: Relative Baseline Statistics by Population Group

Indicator	African	White	Indian	Coloured	SA Total
% No education	24.3	1.2	10.2	2.6	19.3
Unemployment Rates	42.5	4.5	20.9	12.2	33.9
% Living in Shacks/Huts	46.0	0.8	9.6	1.3	34.0
% No Piped Water	72.3	3.6	2.4	27.6	55.3

Source: Computed from Stats SA 1996 Census

Consequently, various government regimes of the post-apartheid era have considered service delivery as one of the cornerstones of the envisaged socioeconomic transformation of the country. This evident with initiation of various government programs like the Reconstruction and Development Program (RDP) which are aimed at acceleration of service delivery and social reconstruction. Policies now seek to elevate the poor and formerly disadvantaged thereby narrowing the inequality gap. Bhorat *et al.,* (2008) observed that the government welfare services in post-apartheid era have been pro-poor; the study indicates that households at the bottom of the expenditure decile (poorest of the poor) have benefited more from government services.

On the side of the populace, there is a high expectation of a speedy delivery of services for a better life for those that have waited too long for equitable living conditions. This expectation may have led to the increasing outcries from communities either where the pace of delivery of services has not marched their expected outcome or communities where there is still a general feeling of relative and unacceptable inequity in access to basic services despite the claims of accelerated service delivery by the concerned authorities. Consequently, the rise of social movements and protest actions could be noted as one of the common phenomena of post-apartheid South Africa. According to the report by Jain (2010), the frequency of service delivery related protests in South Africa increased by over 100% between 2007 and 2009 from an average of about 9 protests per month in 2007 to 19 protests per month in 2009.

A recent study (Zama, 2010) that used geographic information systems for mapping and tracking service delivery and service delivery related protests in South Africa in the post-apartheid era indicates that whilst the greatest level of multiple service deprivation was seemingly in the deep rural areas, the highest frequency

of service delivery protests happen in communities in/near urban and peri-urban areas. This suggests that though most instances of service delivery protests in South Africa and the grievances of the protesting communities could be real on absolute scales of measurement, the relative measure of deprivation and comparison of conditions of living with other segments of the population could possibly be an igniting factor that escalates the intensity and frequency of the mass actions as the social theory of relative deprivation explains (Runciman, 1972).

Numerical reports from the statistical release of 2007 community survey reflects that there is continual significant progress in access to basic services based on absolute scales of measurement (Statistics South Africa, 2007). This paper presents the problem of measurement of service delivery outcomes from a slightly different perspective. Here changes in relative deprivation of basic services from the perspective of measuring relatively likelihood of access are measured. Using the 1996 and 2001 census data and 2007 community survey data, it investigated whether the statistical odds in favour or against access to basic services for different demographic segments of the South African society especially the previously 'disadvantaged' group are increasing or decreasing over time.

Methodology

The bulk of data used for this study are from the South African national census of 1996, 2001 and 2007 community survey conducted by Statistics South Africa. The particular variables of interest are access to piped water and access to formal housing. The choice of these variables amongst other basic services is informed by the fact that shelter is one of the three basic human needs. Also studies have shown that most of the service delivery protests are centred on the demand for proper housing (Hemson and Nnadozie, 2005). More so the obvious importance of water for human nutrition, prevention of diseases and sanitation cannot be over emphasized. These two variables could also be seen as a prelude to the provision of other basic services.

For the analysis of the advances in relative propensity towards access to these services we use the statistical multivariate method of logistic regression. The analysis for the relative odds of access to water and the relative odds of access to housing are done separately. For the water analysis the dependent variable is access to piped water recoded 0 for households with no access and 1 for households with access to piped water. The recode stems from the original water access question in the census questionnaires in which households are asked to select main source of water from a list including piped water to dwelling, piped water to yard, piped water to community stand, bore hole, spring, river, dam, stagnant water/pool, water tanker, and rain water. Households that responded to access to any of the categories of piped water are recoded as 1, while those accessing from rivers, rainwater, pool etc are recoded as 0. Similarly, for the housing analysis the dependent variable is access to formal housing recoded as 0 for households with no access and 1 for households with access to formal housing. The recode also stems from the type of dwelling question from the census questionnaires in which households are asked to select their type of dwelling from a list that includes brick structures, traditional mud structures, shacks, tents, hostels etc. The households that responded yes to mud houses and shacks are recoded as 0 while those with brick, hostels etc are recoded as 1.

In both cases of analysis of relative odds of access to piped water and housing the independent variables are Population Group of households and Income Level of households. These independent variables are treated as categorical variables for the logistic regression model. The population groups comprise Black, Coloured, Indian and White, the White population is the reference category for the analysis of relative odds of access to water and housing. The income variable is a recoded variable from the census household annual income question. The original income categories comprise the range of households that reported R0 annual income to the highest R2.5 million or more. The recode reduced the income groups from 12 income groups in the census questionnaires to 5 income Levels (1 to 5) in order of magnitude. The lowest income group (Level 1) comprised of households that reported R0 to R5000 per annum while the highest group (Level 5) comprised of households that earned R600, 000 or more. The income Level 5 is used as the reference

category for the analysis of relative odds of access to water and housing.

Results and Discussion

In Tables 2a and 2b we present the relative odd ratios for the analysis of the relative odds of access to basic piped water and formal housing in South Africa for 1996, 2001 and 2007. The relative odd ratios are based on population group (Black, Coloured, Indian and White) and income level (Level 1 to Level 5) of the household with the White population as the reference group for population group and Income Level 5 as the reference group for income level. In Table 2a the dependent variable is access to piped water coded 1 for households with access and 0 for households without access to piped water. In Table 2b the dependent variable is access to formal housing where household with access are coded with value 1 and households without access are coded with value 0. The coding scheme has been discussed in the methodology section.

In a nutshell, direct logistic regression was performed to assess the impact of population group and income level on the odds of households having access to piped water and formal housing in time. The model for each of the cases that is, water access and housing access are presented in Tables 2a and 2b respectively. The Tables show that all the predictors are statistically significant, $p \leq 0.05$ for all categories of the independent variables. The models in both cases for all the years involved explained 21.7% to 30.4% (*Nagelkerke R Squared*) of variance with respect to access to piped water and formal housing. In Tables 2a and 2b, in order to keep the interpretation of the output consistent, the inverse of the original odd ratios that are less than 1 have been taken and the description reversed (Osborne, 2006). The odd ratios with the negative sign indicate the sign or direction of their respective B coefficients. This also helps to fit in the direction of the relative comparison with respect to the reference group.

Table 2a: The Odds of Accessing Piped Water Based on Race and Income

Year	1996	2001	2007
	EXP(B)	*EXP(B)*	*EXP(B)*
Population Group (Ref, White):			
Indian	3.343***	1.011***	6.220***
Coloured	-1.127***	-2.544***	1.472***
Black	-5.847***	-19.607***	-3.831***
Income Level (Ref, Level 5):			
Level 4	1.460***	2.816***	1.000*
Level 3	1.421***	2.760***	-1.937***
Level 2	-1.422***	1.045***	-2.762***
Level 1	-3.003***	-1.239***	-2.369***

$*** \rightarrow p = 0.00, \quad ** \rightarrow p < 0.01, \quad * \rightarrow p < 0.05$

Table 2a shows that on the basis of population group with the White population as the reference group and all other factors being equal, in 1996 the Indian households were about 3.3 times as likely as the White households to have access to piped water, the Coloured households were almost as (1.1 times less likely) likely as White households to have access to piped water while the Black households were about 6 times less likely as the White households to have access to piped water for the same year 1996. The year 2001 follows a similar pattern except for the Black households with a dramatic change in the relative odds where they become almost 20 times less likely as White households having access to piped water. Perhaps, this could be attributed to sudden increase in households numbers after 1994 (end of apartheid) as household members from rural areas surged into informal settlements without basic services in Urban and Peri-urban areas in search of job and better conditions of living (Kok *et al.*, 2003). The results for 2007 indicate that Indian households were about 6 times as likely as the White households to have access to piped water. The

Coloured households were almost as (1.4 times) likely as White households to have access to piped water while the Black households were about 4 times less likely as the White households to have access to piped water, a remarkable improvement from 2001.

Analyzing Table 2a on the basis of income, where the highest income level (Level 5) serves as the reference group and assuming that all other factors are constant, a striking general impression is that household population group is seemingly a stronger factor than household income for the variance in access to piped water. Generally, the odds against access to piped water for the various income levels in time with respect to the reference group increase with decrease in income. The lowest income group (Level 1) for instance was about 4 times less likely to have access to piped water in 1996 as the top income group and the odds against this lowest income group increased to 6 times with respect to the top income group in 2007.

Table 2b: The Odds of Accessing Housing Based on Race and Income

Year	1996	2001	2007
	EXP(B)	*EXP(B)*	*EXP(B)*
Population Group (Ref, White):			
Indian	-1.353***	-1.386***	-1.526***
Coloured	-7.936***	-5.154***	-6.756***
Black	-47.617***	-21.739***	-28.571***
Income Level (Ref, Level 5):			
Level 4	1.747***	2.506***	1.000*
Level 3	1.246***	1.594***	-3.690***
Level 2	-2.267***	-1.594***	-5.291***
Level 1	-3.623***	-2.123***	-5.988***

$*** \rightarrow p = 0.00, \quad ** \rightarrow p < 0.01, \quad * \rightarrow p < 0.05$

In the housing sector it could be deduced from Table 2b that population group could be a stronger factor to explain variance in odds towards access to formal housing than it is for access to piped water. The Indian households were almost at the same level of likelihood of access to housing as the White households through the years. In 1996 the Coloured households were about 8 times less likely to have access to formal housing as the White households, the odds against this population group decreased marginally to 7 times in 2007. The Black households were about 48 times less likely as the White households to have access to formal housing in 1996, this reduced to 22 times in 2001 and in 2007 this population group were 28 times less likely to have access to formal housing. This shows a remarkable decrease in odds against the Black households for accessing formal housing over the period as service delivery is being accelerated. However, a striking difference in the magnitude of odds against the Black households could be noted between access to piped water and access to formal housing. Black households seemingly have greater odd against access to formal housing in comparison to piped water. This could be partly due to the fact that a substantial proportion (26% in 1996) of Black households (classified as having access to piped water) living in informal/mud dwellings get their main supply of water from community stand pipes and this has internal effects in the computation of the odd ratios. In view of this the housing odd ratios could be a better reflection of the magnitude of relative inequality in access to basic services in South Africa on the basis of population group.

Again as in the case of access to piped water, household population group is ostensibly a stronger factor than household income in explaining the variance in relative odds of access to formal housing in South Africa. A remarkable increase in the odds against access to formal housing for the low income levels (Income Levels 1 & 2) could be noted for 2007. For instance the lowest income group was about 4 times less likely as the top income group to have access to formal housing in 1996 and the odds against this lowest

income group increase to about 6 in 2007. This may not be surprising as it gibes with the increasing trend of housing related service delivery protests in the recent past.

Conclusion

This paper attempted to evaluate shifts in the relative likelihood of access to piped water and formal housing on the basis of population group and household income. An outstanding remark in the evaluation process is the very diverse initial conditions of these services at the dawn of new South Africa as observable in Table 1 from onset of the 1996 census. Analyzing the relative odds, we find that household population group is a stronger factor than household income level for explaining the variance in level of access of both water and formal housing over the period. Generally the odds against the previously disadvantage segments of the society i.e. the Black African at the lowest level of income seem to have reduced over time especially in the case of access to piped water, even though this may be due to the substantial proportion of this segment of the population accessing water from community stand pipes. Households access to housing in the later period show wide gap in the odds of access between different segments of the society despite claims of accelerated delivery in the provinces.

Even though the findings of this study suggests a rejection of initial hypothetical postulation that the odds in favour or against different segments of the South Africa society with regards to access to basic services has remained the same in the post-apartheid era, there is still unacceptable inequality with access to basic services especially for the Black and low income households in South Africa. Also, even though there has been advancement in the delivery of services, the agitations of some communities with regards to lack of, and inequitable access to, basic services could be real both in absolute and relative terms. There is the urgent need for continued and intensified involvement of communities through all the processes of delivery of basic services by employing platforms like imbizo, ward committees, youth meetings and women congregations amongst others. Such platforms should not only focus on the politics of allocation of service units, but should also provide the basis for information sharing on the logistics and limitations of local governments towards the delivery of expected services. The intensified participatory involvement of communities would promote effective and civilized mechanism for citizen voice as much as enhance communal resources in social capital.

This paper recommends a service delivery model that would adequately factor in the reported substantial unevenness in access and delivery of basic service according to the demographic segmentations (population group and income level). This could to be achieved by drawing up robust instruments that could most concretely measure all dimensions of progress. Indicator tools should be worked into the relevant policy frameworks, not just for effective measure of progress, but most significantly for evaluating whether in real terms, there is a narrowing of any identifiable divides in service delivery between the segments in favour of the poorest. In view of the overall challenges therefore, considerable policy push to meeting the expectation of delivery to all those segments of the society identified as having the largest backlogs will evince rapid advance in delivery equity and ensure services that can see the disparity levels between the segments narrowed consistently and steadily in time to match and harmonize with developmental timelines both nationally and in view of the MDGs.

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