Reliability and validity in migration studies: Khayelitsha/Mitchell's Plain survey; Provincial Government Survey and Census 2000

Susan Ziehl

Abstract

The reliability of Census data on demography and migration periodically comes under attack. This paper sheds light on the reliability of migration data with respect to the Western Cape. Census data and two independent studies are compared and the convergence or divergence of the findings assessed. Some of the findings at issue are that about 90% of Coloured, 20% of African and half of Whites living in the Western Cape in 2001, were born in this province (Census 2001 and PGWC). Another is that this applied to only 16% of African residents of Khayetisha (KMP) according to a survey of that area, compared with 30% according to Census 2001. The results of the comparisons are therefore mixed and qualified. There is higher consistency for more aggregate-level measures (provincial) than for disaggregated measures (magisterial district). For example, in the case of life-time migration, there were substantial differences in the results of the KMPS and Census 2001 for the Mitchell's Plain magisterial district. On the other hand, the differences between the census and a non-Stats SA produced survey of the Western Cape Province, were less than 5% and can therefore be regarded as reliable. Accurate data on migration is essential for planning purposes. More comparative analyses such as that contained in this paper, are therefore called for.

Reliability and validity in migration studies: Khayelitsha/Mitchell's Plain Survey; Provincial Government Survey and Census 2001

Susan C. Ziehl[1]

(Freelance researcher, Cape Town)

1. Introduction

Knowing the size of a population and probable future growth is essential for the planning of service delivery and almost all government activities. The more accurate our data, the more confident we can be in predicting future population growth and thereby the magnitude of the need for services. However, in South Africa, as elsewhere, the official body responsible for producing data on our society, Statistics South Africa or StatsSA, is often criticized for 'getting it wrong' (see Dorrington, 2001; Dorrington and Moultrie, 2002; Moultrie, quoted in de Wet, 2012; Posel *et al*, *Econ3x3*, 2013 and Charman & Petersen, *Econ3x3*, 2016). This critique, however, begs the question, 'as compared to what?' In other words, what *other* studies can be used to judge the accuracy of StatsSA-produced data?

Compared to the other two basic demographic variables (fertility and mortality), migration is more difficult to measure. For example, whereas births and deaths are one-off events, migration can occur frequently or not at all. There are also difficulties around the definition of a migrant, for example whether someone fleeing unfavourable political conditions is a migrant or a refugee. In South Africa there are additional problems around the keeping of records on migration, since people are not required to register a move in residence from one province (or municipality) to another.

This paper contributes to debates around the quality of migration data by comparing the results of Census 2001 for the Western Cape province and one magisterial district (Mitchell's Plain), to those of two sample surveys conducted on the same geographical area at more or less the same time. While all of these studies are now dated, the purpose of this paper is methodological rather than empirical. It is more concerned with the reliability of the data than its content.

2. Reliability and validity

Epistemology is concerned with the question of how we can be sure we have generated accurate data about our society (Bryman,2012:27). Babbie and Mouton indicate that 'epistemic' is another word for 'truthful knowledge' and add:

> "We use 'truthful' basically as a synonym of 'valid' or 'close approximation to the truth'. We accept knowledge to be truthful when we have sufficient reason to believe that it is an accurate representation . . . of some phenomenon in the world" (2001:8).

For knowledge to be valid it must also be reliable. These concepts are, however, not the same. Reliability does not guarantee validity. Rather, it is a necessary but not sufficient condition for validity. These concepts are usually discussed with reference to instruments or techniques of measuring aspects of the 'real' world. It follows, though, that if our techniques are reliable and valid then the data produced via them, if properly collected, would also be reliable and valid.

2.1 Reliability

Reliability is synonymous with consistency and refers to the question of whether the results of applying the same measuring technique to the same social object are the same (consistent) or different (divergent). Techniques for ensuring reliability include: (1) Test-retest method; (2) split-half method; (3) using established measures and (4) multiple observers (Babbie and Mouton, 2001:119). This paper draws on the fourth technique. It involves researchers from different organisations 'measuring' or observing the same phenomenon at more or less the same time.

2.2 Validity

Two studies of the same social object may produce consistent results but both may be 'off the mark' that is, not adequately reflect the 'real situation'. Babbie and Mouton use the dart-board analogy to illustrate this point (2001:124). Another analogy is students answering an exam question. They may all give the same answer (consistent) but the answer may be wrong (invalid). While truthful or valid knowledge is the goal of all science, most of us acknowledge that we will never be able to pin point it exactly. Hence the phrase above 'close approximation to the truth'. We also need to acknowledge that what is one person's 'truth' may be another's 'untruth'.

There is no simple solution to the clash between an objectivist and subjectivist view of ontology (what is real). Neuman (1994: 5-10) as well as Babbie and Mouton (2001:242) claim that, in the final analysis, what counts as truth or a valid representation of the real world is what scientists, considering the evidence and applying logic, decide is true or valid. This is implied in Babbie and Mouton's description of 'face validity' and 'construct validity'. Face validity exists when the measure corresponds to "common agreements", that is, a generally agreed upon definition of a concept (2001: 122). Construct validity is "based on the logical relationships among variables" , that is, the variable you are measuring and other variables you have constructed to test its validity (Babbie and Mouton, 2001:122).

Bryman (2012) refers to 'convergent validity' as another example of a test for the validity of research findings. He uses the example of the British Crime Survey (similar to the South African Victims of Crime Survey) which was "consciously devised to provide an alternative measure of levels of crime that would act as a check on the official statistics" (2012:171). A related concept is that of 'criterion validity' or 'predictive validity'. Here, the data produced is compared against an external criterion or a future event. This is sometimes used when evaluating migration data. For example, comparing the number emigrants indicated in government records with the number of individuals of that nationality who have obtained permanent residence in another country (see Dorrington, 2001). Similarly, one can compare statistics on the rate of increase in net migration (by age) for an area and the rate of increase in the demand for services in that area (e.g. school enrolment or refuse collection).

The concern of this paper is with the reliability of information on migration produced by three different sources. It aims at determining whether there is consistency or divergence in the results achieved. The latter has been operationalised in terms of a 5% cut-off point. While this corresponds to a generally accepted 'confidence level' and 'confidence interval', the analysis is not as precise or

rigorous as would be required for such tests. Rather, when the results of the studies being compared differs by less than 5%, they are regarded as reliable. It should be borne in mind, though, that only three studies are compared here and the more comparisons we have the more certain we will be of the reliability of the information produced.

3. Previous research

Statistics South Africa (SSA) has published data on net migration between provinces using Census 2001, the Community Survey of 2007 and Census 2011 (SSA, 2012b:20)[2]. This publication does not contain any data at the sub-provincial level. The provincial level data will be used to check the author's own calculations from Census 2001 data provided on SSA website.

The Human Sciences Research Council (HSRC) commissioned research on the causes of migration within and from South Africa. A survey took place between May 2001 and October 2002. Numerous problems were encountered with respect to the field work undertaken for the survey and the sample was not representative at the provincial level (Kok et al, 2003; van Zyl *et al* 2006). Because this study did not measure levels of migration and the methodological problems mentioned, the findings from the HSRC migration study will not be reported here.

The Khayelitsha/Mitchell's Plain Survey (KMPS) of 2000 will be discussed in detail below. At issue here are two studies which draw on that survey but for purposes other than those of this paper. In 2004, Ndegwa *et al* published a paper drawing on KMPS data in order to "describe the labour market, livelihood strategies, and health status of the migrants who have migrated to Khayelitsha/Mitchell's Plain since 1940" (2004:12). They show that migration into KMP was very low up until the 1970's, increased slowly until the 1980's and then very rapidly thereafter. They also show that from the 1980's to the late 90's the number of female migrants outstripped the number of male migrants into the area.

Figure 1: KMP Migration by Gender
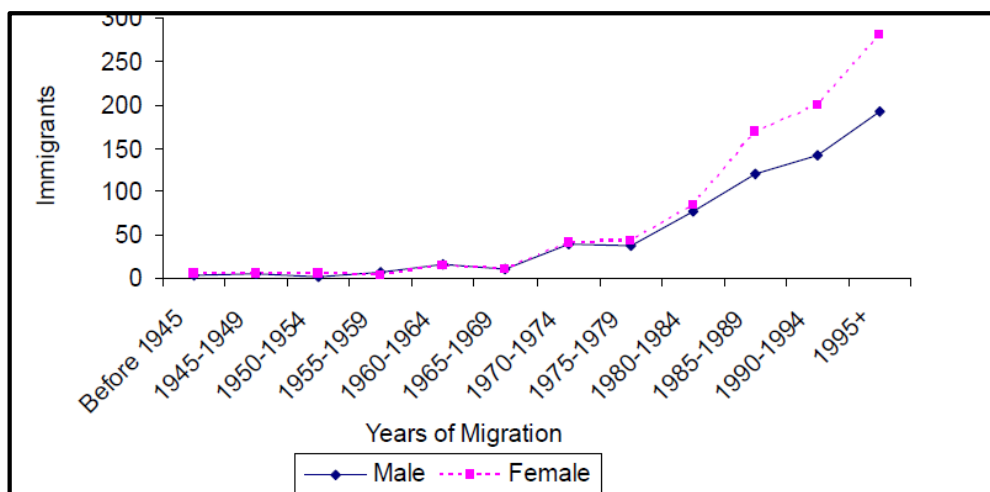
Source: Ndegwa *et al* (2004: 9).

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[2] This analysis shows that net migration for the Western Cape was higher in 2007 than 2001 (185,000 vs 108,000) and lower in 2011 than 2007 (185,000 vs 192,400) (SSA, 2012b:22).

As far as the origin of the migration streams are concerned, the researchers find a replication of the patterns established in the 1970's and 1980's in that the vast majority of Black migrants come from a small number of rural areas in the Eastern Cape (principally Ciskei and Transkei). "What is remarkable is that 78% of migrants to Khayelitsha originate in the rural areas under the jurisdiction of a traditional leader and this is even more noticeable among the Transkeians (94%) and Ciskeians (79%) . . . It is also clear . . . that the vast majority of migrants (78.5%) head straight for Cape Town from their rural origins without stopping at other destinations on the way. Only 7% try other urban areas in the Eastern Cape first while another 6% have tried Gauteng" (Ndegwa, 2004: 22).

Table 1: Khayelitsha Migrants by Place of Birth and Type of Area

Place	Urban Area		Commercial Farm		Rural Area Under Traditional Leader		Total	
	No	Row %	No	Row %	No	Row %	No	Row %
TRANSKEI	49	5,0	10	1,0	936	94,0	995	100,0
CISKEI	43	20,0	2	1,0	170	79,0	215	100,0
OTHER E.C	104	57,0	34	18,0	45	25,0	183	100,0
OTHER S.A	61	80,0	2	3,0	13	17,0	76	100,0
OTHER W.C	19	95,0	1	5,0	0	0,0	20	100,0
OTHER AFRICAN	2	67,0	1	33,0	0	0,0	3	100,0
TOTAL	278	18,6	50	3,4	1164	78,0	1492	100,0

Source: Ndegwa et al, 2004: 44.

Table 2: Khayelitsha Migrants by First Provincial Urban Destination

PROVINCE	No	%	No	%
Western Cape			1002	81,1
Cape Town	970	78,5		
Other	32	2,6		
Eastern Cape			86	7,0
Transkei	23	1,9		
Ciskei	12	1,0		
Other	51	4,1		
KwaZulu-Natal			15	1,2
Free State			14	1,1
Northern Cape			2	0,2
Gauteng			75	6,1
Other Provinces			42	3,3
Total			1236	100,0

Source: Ndegwa et al, 2004: 44.

The general conclusion drawn from this study is that apartheid legislation such as the Group Areas Act and the Coloured Labour Preference Policy inhibited migration in the past. The removal of influx control therefore freed migrants from the rural areas of the Eastern Cape to move to Cape Town in response to employment opportunities. This shows the impact of non-demographic factors on migration and therefore calls into question the applicability of "the theory of mobility transition, even in its various revisions" (2004:44). Influx control as well as the impact of rural-urban networks established in the 1970's "diminish the role of natural increase relative to migration in population

growth in localised urban areas such as Khayelitsha/Mitchell's Plain in the first post-apartheid decade" (2004:44). In addition, housing backlogs as well as squalid conditions in this area result in negative health effects and pose "serious political and social justice challenges" to policy makers (2004:44).

Yu and Nieftagodien (2008) also used the KMPS data to show the connection between migration patterns and poverty in South Africa. They claim that migration explains poverty in two ways. Since migration to Khayelitsha/Mitchell's Plain among Blacks occurs mainly from the poverty-stricken rural areas of the Eastern Cape it is "an attempt to escape poverty" by moving to an area where employment opportunities exist (2008:37). They further claim the data show "poverty is still found to be biased against blacks, females and those located in rural areas in South Africa" (2008:37). The second leg of their argument is that in KMP the structure of poverty is such that it is greatest among recently arrived young females. The latter fare worse than established females and new migrant males who, in turn, show similar levels of poverty. Those least likely to experience poverty are 'established male migrants' (Yu and Nieftagodien, 2008:26).

Naidoo, Leibbrandt and Dorrington (2008) have researched Black migrants from the Eastern Cape to the Western Cape based on the 1996 and 2001 censuses. Their aim was to test the hypothesis that "the factors affecting migration from the Transkei to the CMA have changed significantly" since 1991 (2008:29). They point out that since the 1980's there has been a decline in research on migration in the South African context – particularly internal migration. They further mention "the poor quality and inappropriateness of data available on the topic" as well as the problems inherent in measuring migration (2008:29). Some of the other difficulties they highlight are: (1) the number of questions relating to migration in the census questionnaire has decreased over time; (2) "circulatory and oscillatory migration are impossible to measure"; "migration within a main place could not be analysed"; children born during the five year period preceding the census are excluded from the data; under-enumeration; scanning errors and problems around the definition of urban and rural (Naidoo et al, 2008:32). Their general findings are (1) There are strong trends towards urbanisation for the population as whole with rural dwellers of the Eastern Cape urbanising at a faster rate than others; (2) 'Metropolization' is a more appropriate term than 'urbanisation' as the largest flows are towards the three metropolitan areas in Gauteng; (3) The general trend is towards a stabilization of movement to urban/metropolitan areas since the proportion of the population involved in moves between 1991 and 1996 is lower than that for the period 1996 to 2001; (4) This applies more to the Black population than the white population which "remains more mobile than any other population group but even this group has become less mobile in recent years" (2008:55). The volatility that followed the abolition of influx control in the 1980's has abated; (5) In the country as a whole, "the majority of non-African migrants settle in metropolitan areas (with this increasing over time), while the majority of African migrants settle in non-metropolitan areas (with this decreasing over time)" (2008:55); (6) The economic returns to migrants have reduced over time and may explain the stabilization of migration flows and (7) Migration continues (particularly from the Eastern Cape to the Western Cape) due to the persistence of poverty and the "very low capacity for self-initiated or sustainable livelihood generation" among the majority of the population in the Eastern Cape (2008:57).

In none of these studies is there a detailed comparison or evaluation of survey and census results.

The results of the 2011 Census (StatsSA 2012a) show that, for the period 2001 to 2011, net inter-provincial migration for the Western Cape was 192 000 – the greatest contributor being the Eastern Cape (133 000), followed by Gauteng (23 000) and KZN (13 000). This amounts to an addition of 19 200 individuals per year between 2001 and 2011. These numbers and those in the map below only pertain to *internal migration* between the Western Cape and other provinces. Movements of people into the country (immigration) and out of the country (emigration) are not reflected.

Figure 2: Net migration to the Western Cape from other provinces (Census 2011)
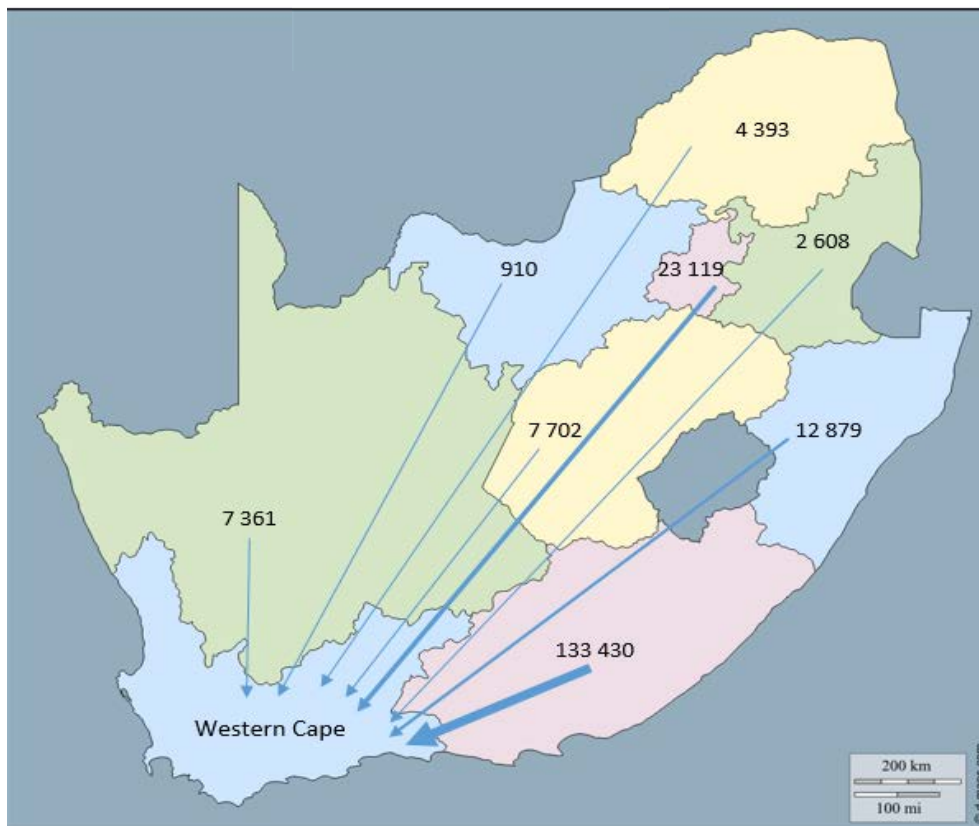

Source: Census 2011, StatsSA, 2012a

A second way to look at these flows is to consider a *broader 'net migration'* measure which includes immigrants (who are counted in the Census) but not emigrants (who are not counted in the Census, having left the country). While the broader 'net migration' figure is skewed due to the exclusion of emigrants,[3] it still makes for an interesting comparison with the standard net-migration figure that captures only inter-provincial movement.

Figures 3 and 4 show the two measures for Census 2011 data. In terms of this broader net migration measure, 'net migration' of the Western Cape is 304 000 (as against 192 000 without immigrants), while Mpumalanga and Limpopo become net receivers rather than net losers of people when immigrants are included The ranking of provinces in terms of 'net migration' also changes significantly. When immigrants are included, Limpopo moves from being a net sender to a net

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[3] This imbalance can only be rectified with the use of non-census data.

receiver of people and being in third place – while Gauteng and the Western Cape keep their places at the top. The Eastern Cape is at the bottom of the broader of ranking for both measures.

Figure 3: Net inter-provincial migration (excluding immigrants) 2011
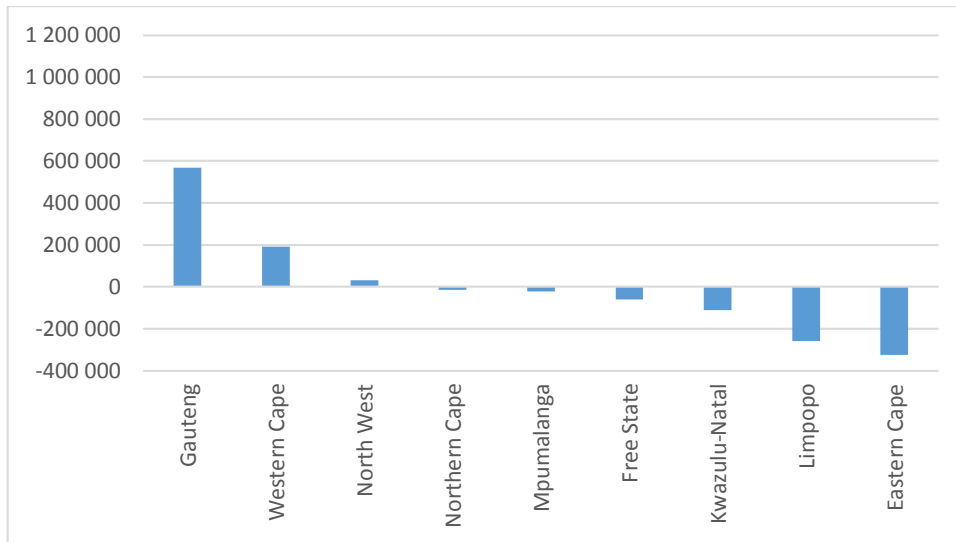
Figure 4: Net inter-provincial migration (including immigrants) 2011
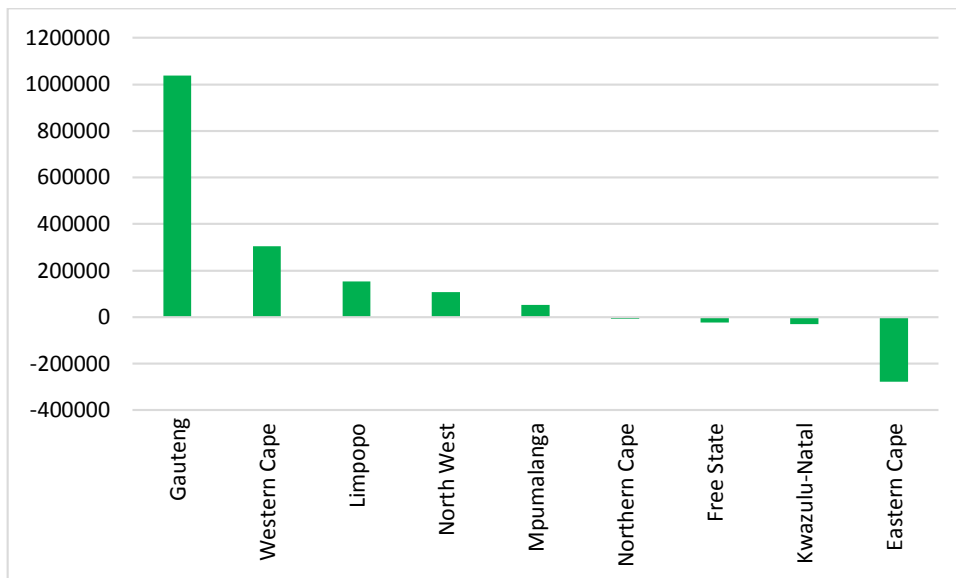
While Census 2011 is the most recent of censuses, I am not aware of any non-StatsSA studies with which its results could be compared. Consequently, the analysis that follows focuses on Census 2001 and two studies conducted at more or less the same time.

4. Khayelitsha/Mitchell's Plain survey 2000

4.1 Background

In 1998 and 2001 the University of Cape Town received funding from the Andrew W. Mellon Foundation for training and research in demography at the post-graduate level. As part of the research component, a survey of Mitchell's Plain similar to the Detroit Area Study by the University of Michigan in the United States, was undertaken. Mitchell's Plain was chosen because, at that time, it housed the vast majority (over 70%) of the African, a fifth of the Coloured and about a third of the total population of Cape Town (the Cape Metropolitan Council Area). It further incorporated four African townships: Langa, Gugulethu, Nyanga and Khayelitsha (See Figure 13 in Appendix). The study was designated the Khayelitsha/Mitchell's Plain Survey 2000 (KMPS) (SALDRU *et al*, 2003). Most of the data was collected between 20 November and 15 December 2000. Additional fieldwork occurred until March 2001 (SALDRU *et al*, 2003:13).

4.2 Methodology

4.2.1 Questionnaires

Three questionnaires were used in the survey: a household questionnaire; an adult questionnaire and an emergency questionnaire. The household questionnaire was brief and aimed primarily at establishing the number of people per household, their age and sex. There are no questions relating directly to migration on this questionnaire.[4]

     The Adult questionnaire was administered to those 18 years and older only. Since its main aim was to research labour market issues, 10 out of the 13 sections deal with such matters (e.g. employment history and unemployment status). The remaining three sections are entitled: 'Education and other Characteristics'; 'Migration' and 'Perceptions of Distributive Justice'. (SALDRU et al, 2000b). The questions falling under the 'migration' section are used for the purposes of this analysis. The emergency questionnaire was a substantially shorter version of the adult questionnaire. It was administered in order to improve the response rate.

4.2.2 Sampling

Cluster as well as systematic sampling were used to select individuals and households for inclusion in the sample. The researchers identified the following targets: 108 enumeration areas (EAs); 1,875 adult respondents and 1,081 households (based on average household size of 2.7). The cluster sampling occurred in two phases.

In the first stage the sampling unit was the EA. The sampling frame consisted of all the EAs used in the 1996 Census for Mitchell's Plain Magisterial District (MPMD). There were 1,486 such units. These were listed, numbered and the number of households in each EA calculated. A sampling interval of 1,573 was used for the systematic selection of EA's from the list. This figure was determined by

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[4] However, two questions could be used for the purposes of documenting the geographical mobility of individuals. They are: How many months did (this person) spend away from the household in the last 12 months? (Q12) and "What is the main reason for his/her absence from this household (use codes)? (Q13) (SALDRU 2000a).

dividing the number of households in all the EA's in Mitchell's Plain by the desired number of households (169,884/108 = 1,573). A number between 1 and 1,573 was randomly selected as a starting point. It was 723. This was applied to the cumulative number of households on the sampling frame of EA's. The first EA equal to or greater than 723 households was the first EA to be selected for the sample. This was Gugulethu-New Rest. The next selection was the EA which corresponded to 723 plus 1,573 households (Gugulethu-Kanana).

Portion of Sampling frame for first stage of cluster sampling

Figure 5: Portion of Sampling frame for first stage of cluster sampling

Area	Enumerator Area	Number of Households	Cumulate
Gugulethu-New Rest	1066535	95	95
Gugulethu-New Rest	1066534	105	200
Gugulethu-New Rest	1066538	82	282
Gugulethu-New Rest	1066536	101	383
Gugulethu-New Rest	1066539	76	459
Gugulethu-New Rest	1066547	56	515
Gugulethu-New Rest	1066544	103	618
Gugulethu-New Rest	1066546	141	759
Source: Saldru et al, 2003.			

Figure 6: Geographic Distribution of Sampled Enumeration Areas
(Sample EAs in blue)
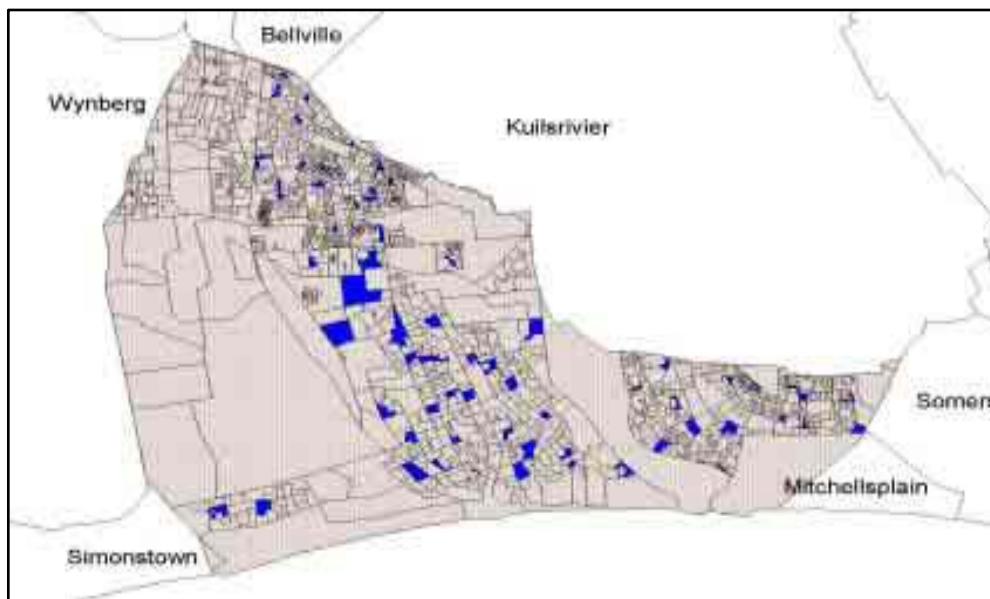
Source: SALDRU *et al*, 2003: 9.

For the second stage of cluster sampling, the household was the sampling unit. Working with a target of 10 households per EA, the researchers selected 13 households per EA in 'Sample One' (the Primary Sample). A sampling interval was calculated for each selected EA by dividing the total number of households by 13. In the case of Gugulethu-New Rest this was 11 and for Gugulethu-Kanana this was 6. With the assistance of aerial photography and starting at the South-West corner of each EA, dwellings were identified for inclusion in 'Sample Two' (the Secondary Sample). For each EA a starting point was identified by randomly selecting a number between 1 and the sampling interval for that EA. Fieldworkers were instructed to obtain information from every household and every adult in the Sample Two. The size of the (theoretical) sample of households was therefore 108 X 13 = 1,404.

4.2.3 Response rates

Using the household questionnaire which established a household roster (number of people, age, sex etc.) data were obtained from 1,176 households. This gives a response rate for households of 84% (1,176/1404 = 84%). Having distinguished between household members younger and older than 18 years, information for 1,874 children and 3,110 adults was recorded. The total number of individuals included in the survey data was therefore 4,984. Of the adults recorded on the household register, 2,644 adult questionnaires were returned. This gives a response rate of 85% (2644/3110 = 85%).

The following weights can be applied to the data:
Person Weight 1 (pweight1): The reciprocal of the probability that a household was included in Samples One and Two. The probability of inclusion was determined by multiplying the number of households targeted in each EA (13) by the sampling interval (1/1573). This gave a figure of 0.00826 and a person weight of 121 (1/0.00826). This means that each individual in the final sample represented 120 individuals in the population (about 800,000).
Person Weight 2 (pweight2): pweight1, adjusted for household non-response.
Adult Weight: (Adultrakingweightd): post stratified weights to adjust for adult non-response.

Except for one example (Table 21 in Appendix), unweighted data is used in this paper.

5. Provincial government survey (2001)

In 2001 the Department of Planning, Local Government and Housing of the Provincial Government of the Western Cape (PGWC) commissioned research aimed at establishing "a reliable profile of migration into and within the Western Cape" (PGWC, 2002:iii). Inter alia, the study involved a survey of individuals and households using enumeration areas (EAs) as the primary sampling unit. These were stratified according to race, district and whether it was in an urban or rural area.

The survey aimed at selecting about two thousand residents of the Western Cape. To that end a multi-stage stratification sampling method was employed. First, a list of enumeration areas (EAs) in the WC was obtained from StatsSA (N=7,203). These were stratified in terms of six geographic districts: Unicity/Cape Town; West Coast; Boland; Central Karoo; Garden Route/KK and Overberg. Within each of these strata, a further division was created on the basis of the previous racial classification of the urban places in each stratum. This resulted in a matrix of 18 categories. Except

for the Unicity, two urban areas and one non-urban area were chosen for inclusion in the primary sample of EAs (n=63).

Table 3: Representation of stratified sample of enumerator areas (EAs). Geographic Districts

	Unicity	West Coast	Boland	Central Karoo	Garden Route/KK	Overberg
Former Coloured Residential EAs	6 (one in each MLC)	3 (two urban and one nonurban)	3 (two urban and one nonurban)	3 (two urban and one nonurban)	3 (two urban and one nonurban)	3 (two urban and one nonurban)
Former African Residential EAs	6 ()one in each MLC)	3 (two urban and one nonurban)	3 (two urban and one nonurban)	3 (two urban and one nonurban)	3 (two urban and one nonurban)	3 (two urban and one nonurban)
Former White Residential EAs	6 (one in each MLC)	3 (two urban and one nonurban)	3 (two urban and one nonurban)	3 (two urban and one nonurban)	3 (two urban and one nonurban)	3 (two urban and one nonurban)
Total EAs	18	9	9	9	9	9
Source: PGWC, 2002:Appendix 3: v.						

Within each of the 63 EAs, maps were used to identify and randomly select 32 dwellings (n=63X32 = 2,016). Interviews were planned with the heads of the households located in these dwellings. Between July and October 2001 the survey team visited each of the selected EAs and conducted interviews with 1,621 household heads. This amounts to a response rate of 80%. The number of individuals covered by the survey is 5,778.

In this study migration was defined as "a change of residence between (not within) settlement areas". In turn, the latter was defined as "a named localised area (or farm)" (2002:iv). Migration to the Western Cape from other provinces is also included in the study and is of concern here.

When presenting the results, the researchers use the migration history of the household head as a proxy for the migration history of all adult members of the household (2002:vi). A special section of the questionnaire dealing with migration history of children showed a 21% level of divergence from the household head in former Black areas, 7% in Coloured areas and 2% in White areas (2002:vii). The researchers indicate that the "main weakness in the sample relates to an under-representation of rural households, African and White rural households in particular" (2002:vii).

The data was weighted at two levels: (1) the ratio of the Unicity (Cape Town) to the rest of the Western Cape and (2) the relative proportions of Africans, Coloureds and Whites in the province (2002: viii).

6. Census 2001

Census 2001 was the second to be conducted in a democratic South Africa. Like other censuses, it was a *de facto* count of the population. The following appears on the cover of the main census questionnaire (Questionnaire A): "Who should be counted in Census 2001?

Every person young or old in South Africa on census night, 9-10 October, should be counted in the household where s/he spent the night. Include non-citizens and visitors if they spend census night in the household" (SSA,2001:A1).

The questionnaire further asks for the names of all individuals present in the household in question:

Figure 7: Census Questionnaire 2001

NAME

(P-00)
Please write the name and surname of the household head and first names of every person who was present in this household on the night between 9 - 10 October.
One name on each row.
Start with head or acting head of household.

The head or acting head is the person who is the main decision-maker in the household. If people are equally decision-makers, take the oldest person.
For babies with no name, write BABY.

Source: SSSA, 2001: A2. Household Questionnaire (A) Census 2001.

In order to enable the counting process, the country was divided into 80,788 enumeration areas (EAs) and an enumerator assigned to each area to collect the data (Margeot and Ramjith, 2001:4). An EA typically covers between 100 and 250 households (Stats SA, 2003b: vi). In November 2001 a post-enumeration survey (PES) was done and the data adjusted accordingly. Despite this, Stats SA concedes that the final (adjusted) figures "probably reflect" an underestimation of children under the age of five; men relative to women and the white population. The adjusted census figures also probably overestimate the number of children between the ages of 10 and 19 (Stats SA, 2003a:iv).

7. Geographical areas compared

Since the PGW survey and the Census produced data at the provincial level and the boundaries of the Western Cape in 2001 are not controversial, the discussion below is about the geographical areas covered in the KMP survey and the census as regards Mitchell's Plain. The survey was conducted in 2000 drawing its primary sample from the list of EAs in MPMD used in the 1996 census. By contrast, the census used the EAs drawn up for the 2001 census. These differ in number and the geographic area covered. In 2001 only 990 EAs were used compared to the 1,486 used in the 1996 census (Small, 2015; Saldru et al, 2003). This difference is not necessarily of significance as the number of households per EA varied between the two censuses. What is more important from the point of view of comparing the two data sets is the geographical area covered in each case.

Finding a map of 1996 EAs that fell within the Mitchell's Plain magisterial district (MPMD) and can be compared with the EAs used in 2001 census, has proved to be very difficult. With the help of staff[5] from the Geographical Information System (GIS) unit at UCT the following maps have been produced.

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[5] I am extremely grateful to Thomas Slingsby for this work on these maps. I have also been assisted by Karen Small of GIS of the City of Cape Town as well as Helene Verhoef of GIS SSA.

Figure 8: Mitchell's Plain Magisterial District, Census 1996

- ■ 1996 Census EAs sampled for KPMS 2000 (SALDRU et al)
- □ 1996 Census Magisterial District of Mitchell's Plain
- ▫ 1996 Census Enumerator Areas

Figure 9: Mitchell's Plain Magisterial District, Census 2001

- ■ 1996 Census EAs sampled for KPMS 2000 (SALDRU et al)
- □ 2001 Census Magisterial District of Mitchell's Plain
- ▫ 2001 Census Enumerator Areas
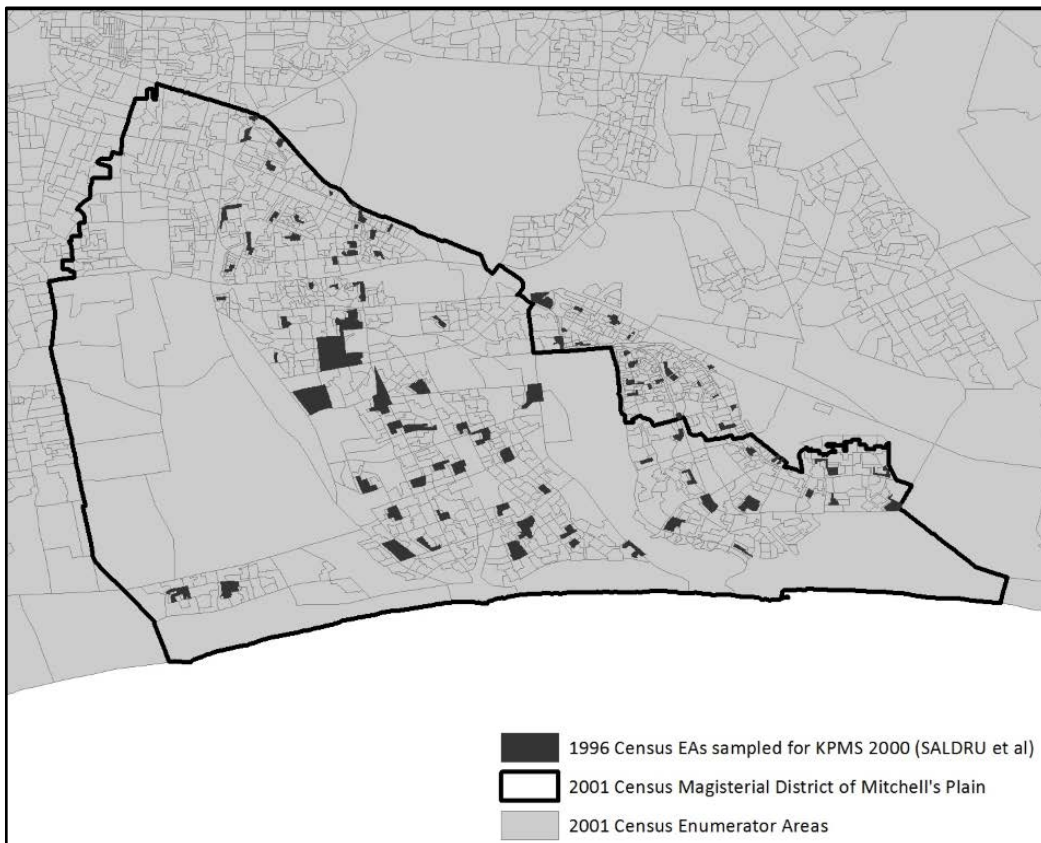
They show some substantial differences in the geographical location of 1996 and 2001 EAs for MPMD. They also show that some of the EAs sampled for the KMPS fell outside the 2001 MPMD boundaries. An example here is Ikwezi Park (which borders the N2) which was included in KMPS but excluded from Census 2001 boundaries (See Figure 14 in Appendix).These differences must be borne in mind when the results of the survey and the census are compared.

Figure 10: Differences between 1996 and 2001 Censuses for MPMD
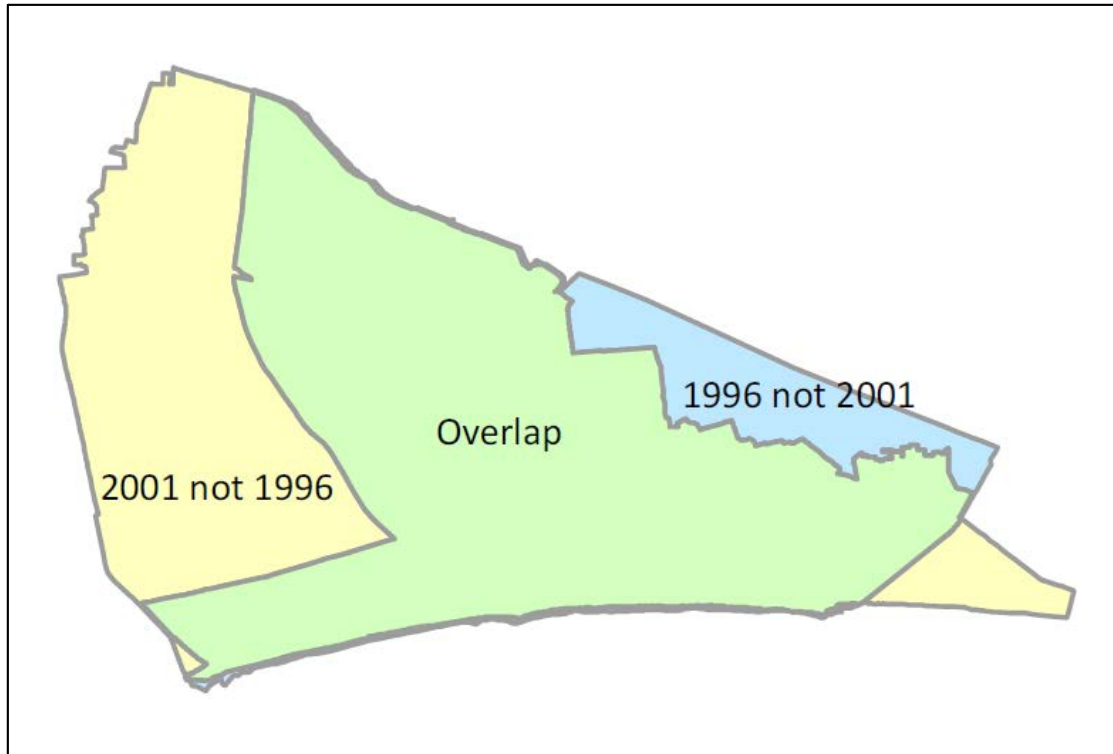
8. Findings

8.1 KMPS and Census 2001

8.1.1 Demographic variables

Since the KMPS only produced migration data for individuals 18 years and older, it was important to present the census for that age category as well. However, the age categories in the full census data presented on the Superweb Programme of SSA website do not allow for 18 and over as a cut-off point. Five-year categories are used and those closest to 18 years are: 15 to 19 and 20 to 24. I have therefore had to use data from the 10% sample presented in the Nesstar programme. There were problems here, too, as age is given in individual years and when that is cross-tabulated with place of enumeration the following message appears: "Analysis failed: Exceeds table limit". Using the compute button and re-coding the age data, I was able to isolate Census 2001 data for individuals enumerated in the Mitchell's Plain magisterial district who were 18 years and over. It is used in the comparisons made below between the KMPS (referred to as the survey) and Census 2001 (the census).

Table 4: Gender, Mitchell's Plain Magisterial District

	KMPS		Census		Difference
	N	%	N	%	
Male	1 126	43%	243 078	47%	-4%
Female	1 518	57%	271 842	53%	4%
Total	2 644	100%	514 920	100%	
Sources: SALDRU *et al*, 2003. And Nesstar 10% Sample of Census 2001. Population Weights applied.					

There is a slight over-representation of females in the survey as compared to the census (4%). On the other hand, there is a significant over-representation of Africans in the survey as compared to the census (14%). This is possibly due to changes in the proportions of Africans and Coloureds in 2001 as compared to 1996.

Table 5: Race, Mitchell's Plain Magisterial District

	KMPS		Census Sample		Difference
	N	%	N	%	%
African	1 835	69%	286 636	56%	13,70
Coloured	790	30%	224 625	44%	-13,72
Indian	4	0%	2 309	0.4%	-0,25
Other	15	1%	1 350	0.3%	0,27
Total	2 644	100%	514 921	100%	
Sources: SALDRU et al, 2003. And Nesstar 10% Sample of Census 2001. Population Weights applied.					

In terms of age the differences are insignificant.

Table 6: Age, Mitchell's Plain Magisterial District

	KMPS		Census Sample		Dif
Age	N	%	N	%	
18-29	1044	40	210 097	41%	-1
30-39	695	26	131 033	25%	1
40-49	477	18	89 312	17%	1
50-64	341	13	63 815	12%	1
65+	87	3	20 663	4%	-1
Total	2 644	100	514 920	100%	

On the whole, the survey reports lower levels of education than the census: 10% more having primary school as the highest level of education and 10% less having post-matric qualifications.

Table 7: Highest Educational Level, Mitchell's Plain Magisterial District

Education 1	Education 2	KMPS		Census Sample		Difference
Below Grade 3	Below Standard 1	54	2,3%	6 537	1,3%	1,0
Grade 3-7	Standard 1- 5	741	31,5%	111 794	21,7%	9,8
Grade 8- 12	Standard 6 – Matric	1 555	66,0%	342 099	66,4%	-0,4
Other	Other	6	0,3%	54 491	10,6%	-10,3
Total		2 356	100,0%	514 921	100,0%	0,0
1: New system of grading; 2: Old system of grading.						

Below is a summary of the differences in the two data sets:

Table 8: Comparison Summary

		KMPS 2000	CENSUS 2001	Difference
Data collection		Nov – Dec 2000	October 2001	10 to 11 months
Geographic Area				Some
Gender		Lower % male		4%
Race		Higher % African		+14%
Age				None
Education		Lower % above Matric		-10%

8.1.2 Ever migrated

One of the most common calculations used in migration studies is designated 'ever-migrated'. It is determined by ascertaining whether the person was born in the place where they currently reside. The place can be a country, province, town/village or municipal area. In the analysis below, the geographic area in question is the province although in some instances the person would have been born outside of South Africa. The following questions were posed in the adult questionnaire of the survey relating to place of birth:

Figure 11: Survey Question Place of Birth

The responses to B1 have been re-categorised in terms of province of birth in the analysis presented below.

Table 9: KMPS Place of Birth

Province of Birth	N	%	%
Western Cape	964	38%	38%
Eastern Cape	1 443	57%	
Other Province	114	5%	62%
Outside SA	6	0,2%	
Total	2 527	100%	100%
Sources: SALDRU *et al*, 2003: 28. Ndegwa et al 2007; Yu & Nieftagodien, 2008.			

It will be noted from the above that 62% of respondents were born in a province other than the Western Cape, the majority of these coming from the Eastern Cape (92% of those not born in Western Cape and 57% of all respondents).

Questions relating to place of birth in the census were phrased as follows:

Figure 12: Question Census Place of Birth

Responses have also been recoded in terms of province of birth and an area outside of South Africa.

Table 10: Census 2001, Place of Birth Adults

Province	Frequency	% of all
Western Cape	306 468	60
Eastern Cape	194 369	38
Other Province	11 591	2
Not in South Africa	2 489	0,5
Total	514 917	100
Source: Nesstar, 10% Sample, Raw numbers; Variables in layers; Magisterial District code, Mitchell's Plain; RecodeAgeB, ElderlyA (18 yrs and over)		

Here, there are major differences with the results of the KMPS survey. According to the census, 60% of adults in MPMD were born in the Western Cape compared with only 38% in the case of the survey.

Table 11: Place of Birth, Survey and Census (18yrs+)

Table 10:			
Province	Survey	Census	Difference
Western Cape	38 %	60 %	22%
Eastern Cape	57 %	38 %	19%
Other Province	5 %	2 %	3%
Not in South Africa	0,2 %	0,5 %	0.3%
Total	100 %	100 %	
Sources: Nesstar, 10% Sample, Raw numbers; Variables in layers; Magisterial District code, Mitchell's Plain; RecodeAgeB, ElderlyA (18 yrs and over). SALDRU *et al*, 2003: 28. Ndegwa et al 2007; Yu & Nieftagodien, 2008.			

This discrepancy may be due to the 14% over-representation of African respondents in the survey when compared to the census. This hypothesis is tested below. Tables A and B appended show the breakdown by population group for the two studies. The table below isolates the results for Coloureds and Africans.

Table 12: Place of Birth by Race (household head), KMPS and Census

KMPS Survey 2000 and Census 2001 (%)						
	African			Coloured		
Province of Birth	Census	Survey	Difference	Census	Survey	Difference
Western Cape	30 %	16 %	**14 %**	98 %	91 %	**7%**
Other Province	70 %	84 %	**14 %**	2 %	9 %	**7%**
Outside SA	0,7 %	0,2 %	**0.5 %**	0,1 %	0,3 %	**0.2%**
	100 %	100 %		100	100 %	
n=2512						
Source: Own calculations from KMPS 2000 survey data. Data First: www.uct.ac.za/dept/saldru.html. Census 2001 (10% Sample). Nesstar. Weight: Population weight(s). Place of enumeration and birth place. Variables in layers; Magisterial District code, Mitchell's Plain; Recode AgeB, ElderlyA						

In both studies there is the general pattern of the vast majority of Coloureds having been born in the Western Cape and the majority of Africans having been born in another province. However, there are also substantial differences in the findings. This is particularly true with respect to Africans where there is a 14% discrepancy despite race being controlled for. An alternative explanation may be that the areas covered in the survey but not the census may contain a higher proportion of new arrivals (and therefore a higher proportion of adults born outside the Western Cape) than the areas covered by the census. See below.

8.1.3 Year moved to Cape Town

A second variable that can assist in understanding the extent of migration up to 2000/1 is the timing of an individual's move to Cape Town. In the case of the KMPS, respondents were asked: "In which year did you move to Cape Town?" In the case of the census, individuals were asked: "Was . . . (this person) living in this place five years ago (at the time of the 1996 census)". By grouping the responses in the survey into two categories: moved before 1996 and moved after 1996, we can compare the two sets of data.

Table 13: KMPS: When did you first move to Cape Town?

Period	Freq.	Percent
1996 -	1298	78,52%
1997 +	355	21,48%
	1653	100,00%
Source: SALDRU *et al* 2003. Own calculations from Data First.		

Table 14: Census 2001, Lived in same place five years ago.

	Code	Frequency	% of valid
Five years ago			
Yes	1	421449	81,8
No	2	93471	18,2
Not applicable (born after October 1996)	3	0	0
Total		514921	100
Source: Nesstar, Census 2001 (10% Sample). Eighteen years and over only. Raw numbers; Variables in layers; Magisterial District code, Mitchell's Plain; RecodeAgeB, ElderlyA.			

Table 15: Comparison of KMPS and Census 2001 on timing of move to Cape Town

KMPS 2001 When did you first move to CT?			Census 2001: Mitchell's Plain Living in same place 5 yrs ago?			Difference
	N	Percent	18+ Yrs	N	%	
1996 -	1 298	79%	Yes	421 449	81,8%	-2.8%
1997 +	355	21%	No	93 471	18,2%	+2.8%
	1 653	100%		514 921	100%	
Sources: KMPS 2000 and Census 2001 (10% Sample). Nesstar. Eighteen Years and over only.						

As can be noted from the above, the difference between the two data sets with respect to the timing of arrival in Cape Town when 1996 is taken as a cut-off point, is minimal (less than 3%). This does not necessarily contradict the suggestion made earlier regarding the 14% difference in Black adults born in Western Cape and elsewhere. It is possible that the areas covered in the survey contained a higher proportion of individuals who moved into the area between the 1980's and 1996 than the areas covered by the census. In other words, areas covered by the survey could have contained more recent arrivals (post 1996) than the areas covered by the census.

Indeed, when the timing of the move to Cape Town is broken down by race, the difference remains above 5% for the Black population. This gives credence to the explanation that the discrepancy in the geographic areas covered by the KMPS and the census account for some of the differences in the migration data.

Table 16: Year of Arrival in Mitchell's Plain, Black Adults. Census and KMPS

Census 2001 and KMPS 2000			
	Census 2001	KMPS 2000	Difference
Born in or moved to area before 1995/6	78%	71%	7%
Moved into area after 1995/6	22%	29%	7%
Total	100%	100%	
Sources: Census 2001. 10% Sample. Migration - South Africa by Magisterial District Counting: Person weighted; Layer:; Living in the same place five years ago by Population group Filters: Geography.(Mitchell's Plain), Age group.(Over 19). KMP Survey Report and Baseline Information. SALDRU, 2003: 26.			

8.2 PGWC and Census 2001

Since both of these studies focus on the provincial level, the comparison will be on that level only.

8.2.1 Demographic variables

I was not able to find a description of the demographic features of the sampled population covered by the PGWC survey. Information on the population group of respondents has been obtained from a table on place of birth (PGWC, 2002:11) (Table C appended). Below that data is compared to the population group of household heads in the Western Cape as recorded during Census 2001.

Table 17: Population Group, PGWC and Census 2001 Household Head Only

	PGWC		Census 2001		Difference
	N	%	N	%	%
African	476	30%	333 966	28%	2%
Coloured	647	41%	545 306	45%	4%
White	447	28%	318 810	26%	2%
Asian			10 900	1%	1%
	1 570	100%	1 208 983	100%	
Sources: PGWC, 2002:11. SSSA: Superweb. Full Census. 2001. http://interactive.statssa.gov.za/superweb/loadDatabase.do;jsessionid=CDD4571D44AA44A80F5A6AB2F03F9FB6?db=HeadofHousehold_p_md Accessed 19 April 2016					

Here we note no significant differences in the population groups covered by the survey as compared to the census.

8.2.2 Life-time migration

The table below compares the results of the PGWC on place of birth with two sets of data from Census 2001. The first provides information on place of birth of those aged 18 years and older. Here we note a 12% difference between the PGWC and the Census results with respect to birth in the Western Cape. The second makes the two data sets more comparable by only focussing on the household heads. This reduces the differences by half and cautions us against seeing the migration history of household heads as the same as those of all adults in a household. The results of the more appropriate comparison, nevertheless contravenes our 5% cut-off point for consistency in the case of birth in the Western Cape.

Table 18: Place of Birth. PGWC 2001 and Census 2001

Birth Place	PGWC 2001 (Household Head)		Census 2001 (18 Yrs+)		Difference	Census 2001 (Household Head)		Difference
	N	%	N	%		N	%	
Western Cape	901	57%	2 064 325	69%	12%	755 290	63%	6%
Eastern Cape	390	25%	594 309	20%	5%	272 229	23%	2%
Northern Cape	53	3%	60 926	2%	1%	28 129	2%	1%
Gauteng	83	5%	96 983	3%	2%	44 584	4%	1%
Other SA	52	3%	97 189	3%	0%	45 893	4%	1%
Foreign	85	5%	99 293	3%	2%	50 990	4%	1%
Total	1 570	100%	3 013 024	100%		1 197 114	100%	

Source: Census 2001, 10% Nesstar: http://interactive.statssa.gov.za:8282/webview/ Accessed 12 April 2016
Weighted data (population).

When we break the data down by race, however, the differences reduce further and our 5% cut-off point for birth in the Western Cape is satisfied (4% or less).

Table 19: Place of Birth by Race, PGWC 2001 and Census 2001

	Household Head Only								
	Black			Coloured			White		
	PGWC	Census	Dif	PGWC	Census	Dif	PGWC	Census	Dif
WC	20%	21%	1%	90%	94%	4%	50%	54%	4%
EC	74%	72%	2%	3%	2%	1%	4%	6%	2%
NC	2%	1%	1%	4%	2%	1%	4%	3%	1%
GT	1%	1%	0%	1%	0%	1%	16%	12%	4%
Other SA	2%	3%	1%	1%	1%	1%	8%	10%	2%
Foreign	1%	1%	0%	-	0%	0%	18%	14%	4%
	100	100%		100	100%		100	100%	

8.2.3 Timing of move to Western Cape

In the PGWC survey, the categories used on the timing of a respondent's move to Western Cape allow us to distinguish between those who moved before and after 1995 (PGWC, Main Report June 2002:21). In the Census, the relevant question allows for a distinction to be drawn between those who moved to Cape Town before and after 1996. Although these categorizations are out of sync by one year, the analysis below (Table 20) shows very few differences between the results of the two studies.

Table 20: Timing of move of those not born in Western Cape, PGWC and Census 2001

	Coloured			Black			White			Total		
Arrival	Census	PGWC	Dif	Census	PGWC	Dif	Census	PGWC	Dif	Census	PGWC	Dif
- 1995/6	69 %	73 %	**4 %**	74 %	64 %	**10 %**	54 %	69 %	**15 %**	68 %	67 %	**1 %**
1995/6 +	31 %	27 %	**4 %**	26 %	36 %	**10 %**	46 %	31 %	**15 %**	32 %	33 %	**1 %**
Total	100 %	100 %		100 %	100 %		100 %	100 %		100 %	100 %	
Sources: Census 2001, Nesstar, 10% Sample. Population Weights applied. (accessed 2 May 2016); PGWC Survey, 2001.												

When the population of the Western Cape as a whole is considered, more than two thirds of respondents in both studies indicated they moved to Cape Town before 1995/6; the difference in the results is only 1%. However, there are significant discrepancies for Blacks and whites – the 5% margin-of-error criterion is violated, as the difference between the two studies is 10% in the case of Blacks and 15% in the case of whites.

9. Conclusion

The purpose of this paper has been to make a contribution towards methodological debates by considering the reliability of our knowledge of migration in the South African context. To that end the results of two sample surveys not produced by Stats SA are compared to the results of Census data collected at more or less the same time for Mitchell's Plain magisterial district and the Western Cape as a whole. The convergence or divergence of findings from the various studies is established through the use of 5% difference as a cut off point for reliability. Where differences are below this point we can be reasonably confident that the findings are reliable enough to serve as the basis for the planning service delivery and other government activities. It should be borne in mind, though, that only two studies have been compared at a time and that more comparisons with more studies would increase our confidence in the reliability of the data produced.

The paper compared Census 2001 results for the Western Cape with those of a survey of the same province at more or less the same time. It also compared the Census 2001 results for Khayelitsha Mitchells Plain with a survey of that area at more or less the same time. The comparison at the magisterial district level of the KMP survey and Census 2001 on life-time migration showed substantial differences (14%) even when race is controlled for. The explanation offered for this discrepancy is the differences in the geographic areas covered in the survey and the census. However, when the two studies are compared on the timing of individuals' move to Cape Town, the differences are minimal (less than 3%). A comparison at the provincial level of the PGW survey and Census 2001 on life-time migration show low levels of difference when race is controlled for (less than 4%). When the timing of the move is considered, the differences are low for the population as a whole but above 10% for Blacks and Whites. The results of the comparison of the two surveys and census 2001 are therefore mixed and qualified.

Using the 5% mark as the cut-off point we find that place of birth data at the provincial level is reliable if race is controlled for. Similarly, data on the timing of the move to the Western Cape at the provincial level is reliable if we consider migration before and after 1996. On the other hand, place of birth data is not reliable at the magisterial level even when race is controlled for. When considering the timing of the move to Cape Town, the data for the district/population as whole is reliable but not when it is broken down by race.

Projections of the quantum and direction of future migration are essential for planning purposes. This is because we need to know in advance how many children to cater for in schools, how much water a city or province will need and how many new houses to build, for example. Future projections rely on historical data and the more reliable the historical data, the more robust our projections will be. Reliability is only one of the criteria of accuracy or 'the truth' about a phenomenon. It is nevertheless an important one and is established when two or more studies of the same area at more or less the same time produce similar results. Where this is not the case, the data is deemed unreliable and should not be used for planning purposes.

These findings could be taken to mean that consistency in results is more attainable the higher the level of measurement – more aggregate level measures producing higher levels of consistency than low aggregate levels such as a magisterial district. This is a basic principle of statistics: the larger the group studied, the more confident we can be of general features as encapsulated in calculations such at the mean, median and mode. On the other hand, the smaller the scale of a study, the more accurate one can be in one's observations as the problems of data collection and errors in the transfer of information are fewer than they are in large-scale studies. Independent research at the local level which can be compared to StatsSA produced data should, therefore, not be abandoned. But what is crucial is that the boundaries of the areas covered should coincide with those used during censuses and sample surveys of the official body. Indeed, the sample used in Community Survey 2016 is larger than previous ones, precisely in order to generate accurate data at the local level. To effect this researchers need to carefully plan their activities and liaise closely with Stats SA with a view to obtaining accurate and up-to-date information about the enumeration areas used in censuses and sample surveys.

It is unusual for studies to be conducted purely or mainly to test the results of other studies and, when they are contemplated, all kinds of practical problems arise. For example, should the 'control study' be conducted at the same time, before or after the study whose results are being verified? Should it be carried out on exactly the same population and, if so, what are the implications of the same people being researched twice? When two sample surveys are being compared, an alternative could be the use of a different sample to the one being used in the study whose results are being tested.

Community Survey 2016 was an opportunity for such a verification study. To the extent that no independent surveys on migration were conducted in this year, this is likely to be our best source of up-to-date information on migration into and within the Western Cape for the next few years.

References

Babbie, Earl & Mouton, Johann. 2001. The Practice of Social Research. Cape Town. Oxford University Press.

Bryman, Allyn. 2012. Social Research Methods. 4th Ed. Oxford: Oxford University Press.

Data First: www.uct.ac.za/dept/saldru.html. Accessed 7 December 2015.

De Wet P (2012) Is Census 2011 accurate? Still depends on who you ask. 01 Nov 2012. *Mail and Guardian*. www.mg.co.za

Dorrington, R. (2001). Did they jump or were they pushed? An investigation into the apparent undercount of whites in the 1996 South African census. Southern African Journal of Demography, 8(1), 37–46. Retrieved from http://www.jstor.org/stable/20853255

Dorrington, R. and Moultrie, T. Estimation of the extent of out-migration from the Western Cape 1999-2001. In Provincial Government of the Western Cape Migration Study in the Western Cape 2001. Sub-report. May 2002.

Kok, P., O'Donovan, M., Bouare, O., Van Zyl, J., 2003. *Post Apartheid Patterns of Internal Migration in South Africa*, HSRC Publishers, Cape Town.

Moses, E., D. Yu, 2009. Migration from the Northern Cape. A Southern Africa Labour and Development Research*, Unit Working Paper Number 32*. Cape Town: SALDRU, University of Cape Town. (not cited).

Naidoo, N.; Leibbrant,M and Dorrington,R. 2008. Magnitudes, Personal Characteristics and Activities of Eastern Cape migrants: A comparison with other migrants and with non-migrants using data from 1996 and 2001 censuses. Southern African Journal of Demography. 11 (1) 29-66 (2008).

Ndegwa, D. ; Horner, D. and Esau,F. "The Links between migration, poverty and health: Evidence from Khayelitsha and Mitchelll's Plain". CSSR. 2004 (paper 73).

Ndegwa, David, Dudley Horner, and Faldie Esau. "The links between migration, poverty and health: Evidence from Khayelitsha and Mitchell's Plain." Social Indicators Research 81, no. 2 (2007): 223-234.

Neuman, W.L. Social Research Methods. (3rd Ed). Boston. Allyn Bacon.

Provincial Government Western Cape (PGWC). June 2002. *Migration Study in the Western Cape 2001. Main Report*. Cape Town.

Provincial Government Western Cape (PGWC). 2002. *Migration Study in the Western Cape 2001. Final Report.* Cape Town.

SALDRU, et al, 200a. South African Labour and Development Research Unit, Centre for Social Science Research, University of Cape Town, Population Studies Center, University of Michigan. Household Questionnaire.

SALDRU et al , 2000b. South African Labour and Development Research Unit, Centre for Social Science Research, University of Cape Town, Population Studies Center, University of Michigan. "Adult Questionnaire"

SALDRU et al, 2000c South African Labour and Development Research Unit, Centre for Social Science Research, University of Cape Town, Population Studies Center, University of Michigan. "Household Questionnaire"

SALDRU et al, 2003. South African Labour and Development Research Unit, Centre for Social Science Research, University of Cape Town, Population Studies Center, University of Michigan. "Khayelitsha/Mitchell's Plain Survey 2000. Survey report and baseline information". Cape Town: UCT.

Small, Karen. Head: Development Information Analysis and Research, Development Information and GIS Department. City of Cape Town. Personal Communication. 18 December 2015.

Statistics South Africa (SSA). 2001. Census Questionnaire. Pretoria: Statistics South Africa.

Statistics South Africa (SSA) 2003a Census 2001. Census in Brief. Report Number 03-02-03 (2001). Pretoria: Statistics South Africa.

Statistics South Africa (SSA). 2003b How the Count was done 2003. Pretoria.

Statistics South Africa (SSA). 2012a. Statistical Release P0301.4 Census 2011. Pretoria: Statistics South Africa.

Statistics South Africa (SSA). 2012b. Report No.03-01-43. Census 2011 Provinces at a Glance. Pretoria: Statistics South Africa.

Van Zyl, J., 2006. Evaluating the 2001-02 HSRC migration survey. In Kok P., Gelderblom D., Oucho, J.O. & Van Zyl J. (Eds.) Migration in South Africa and Southern Africa: Dynamics and determinants (pp. 147-169). Cape Town. HSRC Press.

Verhoef, Helene. StatsSA. Personal Communication. 26 May 2015.

Yu, D and Nieftagodien S. Poverty and Migration: Evidence from the Khayelitsha/Mitchells' Plain Area. 2008. Working Paper Series. Number 11. SALDRU. UCT.

Yu, D. 2009. *The Comparability of Census 1996, Census 2001 and Community Survey 2007.* Stellenbosch Economic Working Papers: 21/09. Stellenbosch University and Bureau for Economic Research. Stellenbosch. (Not cited).
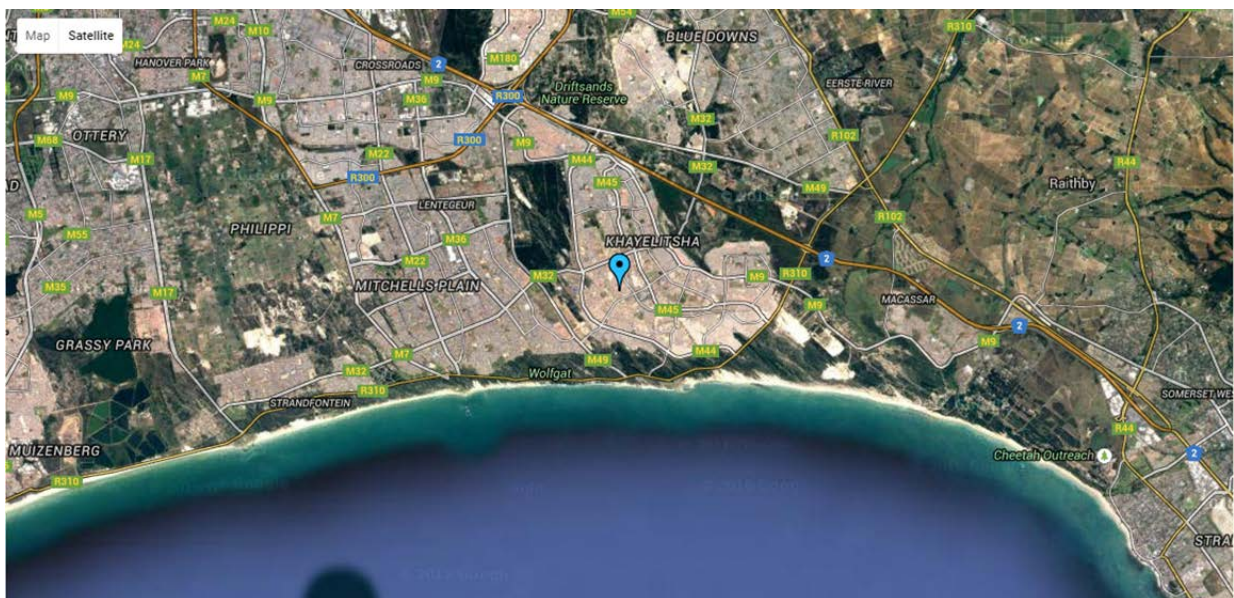
11. Appendices

11.1 Tables

Table 21: Weighted data – adults by gender KMPS

Gender all		Freq.	Percent	Cum.
Male		136,246	42.59	42.59
Female		183,678	57.41	100.00
Total		319,924	100.00	
Source: Own calculations. KMPS Adult File. STATA. tabulate gender [fweight = pweight1_adult]				

11.2 Figures
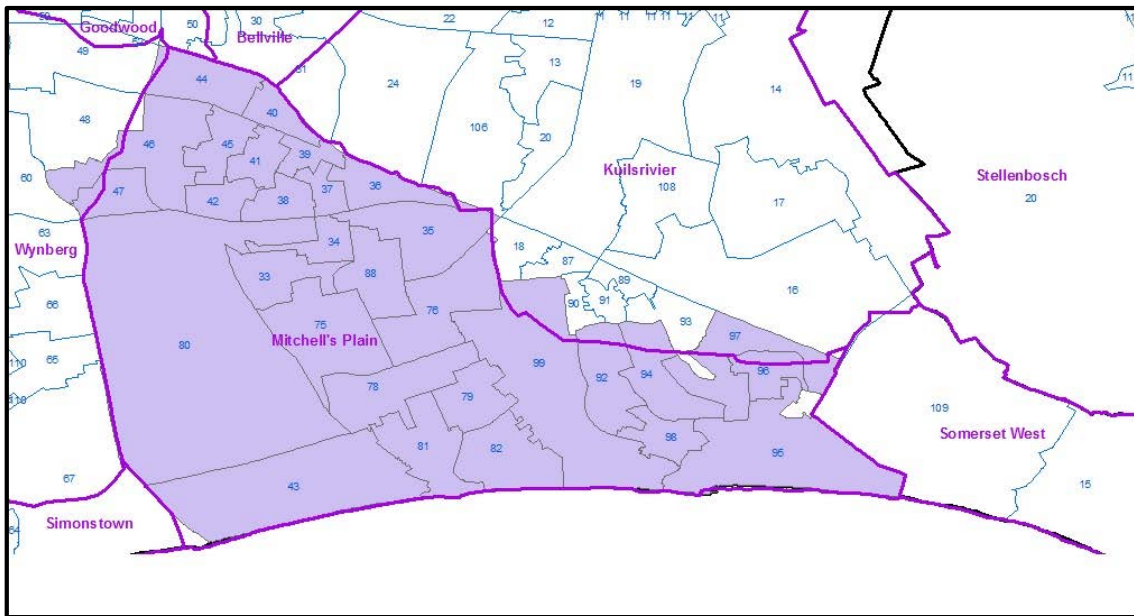
Figure 13: Aerial view KMP 2016

Source: Google Maps. www.google.com/maps/place/ Maps.google.co.za. Accessed 21 July 2016.

Figure 14: Close-up of KMP 2016.

Source: Google Maps. www.google.com/maps/place/ Maps.google.co.za. Accessed 21 July 2016.

Figure 15: Map of EAs in 2011 Census for Mitchell's Plain magisterial district

Source: Helene Verhoef. SSA. Personal Communication.

The **Research Project on Employment, Income Distribution and Inclusive Growth (REDI3x3)** is a multi-year collaborative national research initiative. The project seeks to address South Africa's unemployment, inequality and poverty challenges.

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Collaboration with researchers at universities and research entities and fostering engagement between researchers and policymakers are key objectives of the initiative.

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