CHAPTER EIGHT: DISCUSSION OF FINDINGS

8.1 Introduction

Having looked at the results of the study, this chapter will discuss the findings of the study with reference to the existing related literature. The findings of the study will be interpreted and, an attempt will be made to evaluate the extent to which the conceptual model provides an understanding of the aspects impacting on household quality of life basing on the study's results. The research findings will be discussed in view of the following aspects.

- Age and sex distribution of household heads in the various QOL groups;
- Changes in the composition of QOL groups – cluster analysis;
- Indicators contributing to differences in QOL conditions between household groups – Discriminant analysis and;
- Perceived quality of life, objective QOL and the conceptual model.

The changes or improvement in household QOL will be discussed within the framework of the aspects listed above, in conjunction with the related literature.

8.2 Summary of findings

From the analysis of the demographic data, the following findings were obtained.

- Overall, males dominate household headship in all the data sets anlysed (i.e. OHS 1996 – OHS 1999)
- Females generally dominate household headship among households headed by young people (15 – 19) and the elderly (over 70 years)
- Males dominate household headship in groups with better QOL
- The majority of females heading households have a low level of education (lower than standard ten).
- More often than not, households for whites are in the majority, in groups with better QOL conditions

Results arising from cluster analysis indicate the following

- Clusters or household groups dominated by female headed households experience the poorest QOL conditions

- The majority of households rely on public health services except in groups with better QOL conditions.

- Generally there is substantial improvement in household access to piped water, particularly in respect of the public tap

- The level of unemployment is high particularly among households in QOL groups which rank low on the quality of index

Results obtained from discriminant analysis indicate the following indicators to be discriminating between household groups:

- Highest level of education completed by the household head;

- Household's main water source and distance from water source;

- Main transport used by households to get to work;

- Type of toilet used by the household;

- Refuse disposal services available to households and;

- Time taken by households to get to the nearest telephone.

8.3 Discussion of findings in respect of age and sex distribution of household heads

Findings emanating from the analysis of demographic data pertaining to household heads reveal household headship being dominated by males. For OHS 1999, a total of 21861 households were classified into eight QOL groups. Two out of the eight groups, (i.e. QOL2 and QOL3) have females heading the majority of households, 53.3% and 54.1% respectively. Household headship in the rest of the groups is dominated by males (see Table 4.8).

As far as results for OHS 1998 are concerned, a total of 18005 households were grouped into seven QOL groups. Female headed households constitute the majority in three groups; QOL 2, QOL 5, and QOL 6.

The three groups account for around 39% of the households involved in the study and, although female headed households are in the majority, the margin is not as big – varying between 54,7% in QOL 6 and 59% in QOL 2 (see Table 5.8). For the remaining QOL groups constituting 61% of the households, males dominate the household headship with percentages ranging from 71.3% in QOL 3 to 78.8% in QOL 7.

When it comes to OHS 1997, 28639 households were classified into seven QOL groups. Of these groups, parity in household headship exists in QOL 6 (with N = 2590) while females dominate headship in QOL 5 at 58%, a group with 2520 households, which accounts for 8.8% of the households studied. This finding indicates that males dominate in 91.2% of the households with dominance varying between 51% in QOL 2 and 72% in QOL 7 (refer to Table 6.8 in Chapter 6). A similar pattern is revealed in OHS 1996 in which 15328 households were classified into five QOL groups. Of the five groups, female headed households are in the majority at 53.9% in QOL 1 only (with N = 1877) which accounts for 12.2% of the households studied. The majority of households in the rest of the groups are headed by males with percentages varying between 54% in QOL 5 and 79.5% in QOL 4 (see Table 7.8).

Findings in respect of household headship also reveal a general pattern of relatively poor QOL conditions associated with female-headed households. Groups of households in which female headed households constitute the majority tend to exhibit high levels of unemployment and low levels of education. These households show a tendency of relying heavily on wood as fuel for cooking, poor sanitation with high proportions having no toilet, poor access to water and, poor access to modern decent housing. Details of these findings will be discussed in the forthcoming section dealing with cluster analysis.

Findings in respect of age distribution of household heads indicate a dominance of females in the young age group (15 – 19) and the old age category (over 70 years). For instance, findings from the analysis of OHS 99 close to 1% of the households are headed by a person aged between 15 and 19 years. Of these households, 43.7% are headed by females and this is the only case where males dominate the household headship in the 15-

19 age group. Results from OHS 98 indicate that 208 of the 18005 sampled households (i.e. 1.2%) are headed by a person aged 15-19 and, 53.9% are headed by a female. Results from OHS 97 show that 286 of the 28639 (i.e. 1%) households are headed by someone aged 15-19 and the majority (54.9%) are headed by females. A similar finding is revealed by results emanating from the analysis of OHS 96 in which 192 of 15328 sampled households (i.e. 1.3%) are headed by a person aged 15-19 and, 57.8% are headed by a female.

Households headed by people aged 30-49 constitute the majority in all the data involved in the study and, in all these cases, males overwhelmingly dominate the headship. For instance in OHS 99, close to half of the household heads (48.6%) in the sample are headed by people aged 30-49 and, two thirds of these households are headed by males. Results from the analysis of OHS 98 indicate that 48.1% of the sampled households are headed by people aged 30-49. The majority of these households, 67.5% are headed by males. When it comes to OHS 97, 47.3%) of the sampled households are headed by people aged 30-49 and, 65.5% of them are male headed. A similar finding emanates from the analysis of OHS 96 wherein half of the 15328 households involved in the study are headed by someone aged 30-49 and, 66.6% of them are headed by males.

When it comes to households headed by the elderly (i.e. over 70 years), women predominate the headship once again. Results emanating from the analysis of OHS 99 data indicate that 9% of the households involved in the study are headed by someone aged seventy years and older. Out of the households in this category, 53.4% are headed by females. Results emanating from the analysis of OHS 98 data reveal that 10.7% of the households studied are headed by elderly people and, 54.7% of them are headed by females. Analytical findings for OHS 97 indicate that 11.3% of the 28639 households involved in the study are headed by someone aged over seventy and, 54.8% of them are headed by females. A similar finding is revealed by the results from the analysis of OHS 96 data where 9.1% of the 15328 households studied are headed by elderly peoples and, the majority of them (51.3%) are headed b females. In general it suffices to say that the proportion of households headed by young people has fluctuated around 1% while the

proportion of households headed by people aged 30 – 49 has fluctuated around 50% for the period under review. The proportion of households headed by elderly people has fluctuated around 10%.

The changes in the age and sex distribution of the household heads revealed above highlight consistencies with national trends in some instances and, discrepancies in others. As far as age is concerned, the proportion of households headed by people aged 30-49 is consistent with the national age–sex distribution pattern. South Africa's population pyramid is broad based with a significant potential for population momentum. Results of 1996 census indicate that 23.5% of South Africa's population was aged between 30 and 49 years. During the census conducted in 2001 the population in the same age category was found to have risen to 24.8%. The results of these two censuses also indicate that the total number of households in South Africa increased by 23.7% from 9 059 571 in 1996 to 11 770 274 in 2001 (Statistics South Africa, 1998; Statistics South Africa, 2001). When one looks at this pattern, it's not entirely strange that the percentage of households headed by people aged between 30 and 49 years has risen to the level that this study has found it at. Of particular interest are the proportions and headship of households at both ends of the age continuum.

The existence of households headed by people in the teens is a point of concern particularly in the current era of HIV/AIDS. In a paper presented at a workshop in Cape Town, Rosa (2003) highlights the need to widen the reach of social assistance to cover street children and child headed households, given the growing number of orphans. According to Rosa (2003), roughly 900 000 children under the age of eighteen in South Africa were estimated to have lost a mother by December 2002. The loss in the majority of cases is attributed to HIV/AIDS, and the figure is expected to rise to roughly 3 million by the year 2015 in the absence of major health interventions. The majority of children whose biological parent(s) have died are cared for by relatives, primarily in informal care arrangements, though a small proportion have been placed in formal sector care through the courts (Rosa, 2003).

As a matter of fact child headed households as a concept is relatively new, having been illuminated by HIV/AIDS. As a result, comprehensive literature and empirical evidence to substantiate the revelations in the current study with regard to child headed households are equally scanty. For instance, the Human Sciences Research Council (HSRC) conducted a national survey on HIV/AIDS among households in South Africa in 2002. The findings of HSRC (2002) indicate that 3% of the households involved in the study were reportedly being headed by a person between the ages of 12 and 18 years. This is against the backdrop of community–based programmes reporting an increase in households headed by children, or consisting only of children. This finding may not necessarily provide sufficient ground to speculate that households headed by young people are on the increase but it is a point of concern particularly given the period that the data corresponds with.

Results of the census conducted in 2001 indicate that South Africa had a total of 11 770 274 households, 18 708 (0.2%) of which were found to be headed by people under the age of fifteen. These households fit the description of child headed households since the de facto heads are people not belonging to the economically active category. The majority of these households (71.7%) are found in three provinces - Eastern Cape, KwaZulu Natal and Limpopo. Limpopo province has the highest percentage (28%) followed by KwaZulu Natal with 23% while Eastern Cape has 20.7%. The remaining 28% or so of the households are found in the rest of the provinces with Mpumalanga accounting for 7.8% and Gauteng 6.3%. North West province has some 5.9% of the households while Free State has 4.1%. The smallest percentages of child headed households are found in Western Cape and Northern Cape with percentages of 2.3% and 1.9% respectively (Stats SA, 2001). In view of these revelations, attention needs to be paid to the results of the current study regarding child headed households, given the collaborative evidence from other independent sources.

In looking at the sex distribution of household heads in the various QOL groups, it is important not to draw concrete conclusions on the association between poor QOL and female headed households.

Poor QOL conditions are not entirely associated with female headed households. Preliminary findings indicate that although female headed households are predominant in groups of households with poor QOL conditions, adjacent to those groups are groups of households with almost equally poor QOL conditions that are headed by males. Please note that a detailed discussion of findings relating to cluster analysis follows in Section 8.4. In OHS-1999 cluster analysis resulted into eight QOL groups of which the poorest QOL conditions are experienced in QOL 2 ranked number 8. This particular group accounts for 13.8% of the sampled households and, it consists of houses the majority of which are headed by females. The next group ranked number 7 is QOL 6 in which 59.1% of the households are headed by males. Adjacent to group six in rank terms (i.e. sixth on the QOL index) is QOL3 in which 54.1% are female headed households.

When it comes to results for OHS 98, seven groups of households were obtained from cluster analysis. Out of the seven groups, females dominate the headship in three (i.e. QOL 2, QOL 5 and QOL 6). In this case the poorest conditions are found in QOL 2 and, the other two groups - QOL 5 and QOL 6 - are ranked sixth and fifth respectively. In other words all three groups with the poorest QOL have the majority of households being headed by females. In OHS 97 seven QOL groups were obtained. In this case females dominate household headship in QOL 5. This group happens to be ranked number sixth yet the group with the poorest QOL is group three wherein 52.3% of the households are headed by males. In the case of OHS 96 five QOL groups emerged and the poorest conditions are found in group three. The majority of households (53.2%) are headed by females. These findings indicate that in the main, females still experience the worst conditions.

In a working paper prepared for DFID, Southern African regional poverty network (SARPN) (2004) highlights the following observations based on the 1999 October Household Survey.

- A household headed by a resident male has a 28% probability of being poor, whereas a household with a de jure female head has a 48% chance of being poor and a

household with a de facto female head (because the nominal male head is absent) has a 53% chance of being poor.

- SARPN identifies at least four factors at play namely female – headed households being more likely to be in rural areas where poverty is concentrated; a tendency for female – headed households to have fewer adults of working age; female unemployment rates being higher and; the persistence of the wage gap between male and female earnings.

While the paper's focus was on poverty and inequality in South Africa wherein "poor" meant a household with a monthly income of less than R800 (1999 Rands), it provides insights on the proposition that households headed by women are more likely to be poor. The paper also alludes to the fact that while poverty is not confined to any one racial group in South Africa, it is concentrated among blacks, particularly Africans 52% of whom were reportedly poor (SARPN, 2004).

8.4 Discussion of findings in respect of cluster analysis and the QOL index

Cluster analysis is a statistical procedure used to group cases or variables with similar characteristics together (Marija, 1994: 83). According to Marija (1994) one important step before embarking on cluster analysis is the determination of variables, which will serve as the basis for cluster formation. Van Ryzin (1977: 18) says that clustering can be derived systematically from the data which may be multivariate data, proximity data or clustering data. Selecting the variables for inclusion in an analysis is crucial, as exclusion of important variables will yield poor and misleading findings. Central to attempting to identify clusters of observations which may be present in the data, is knowledge of how "close" individual observations are to each other, or how far apart they are.

In the context of this study cluster analysis was applied to classify households into groups on the basis of the multiple response variables which served as the QOL indicators. From this point of view, interest was and still is in identifying and defining groups rather than individual households. As a result, the approach adopted was one where a group of households can be described by a representative observation through a

summary statistic for each QOL indicator; the inter-group proximity being defined as the proximity between the representative observations.

Findings of this study indicate that there has been a gradual increase in the number of household clusters or QOL groups as a result of the changes in household access to goods, services and facilities. The changes in household access to goods, services and facilities are reflected through household access to QOL indicators considered in the study. The changes in household access to selected QOL indicators reflect changes in the objective conditions which households experience. Results indicate that the number of household clusters or groups of households experiencing different QOL conditions, increased from five in 1996 to eight in 1999. While the increase in household clusters has been noticed, there is a need to try and establish the cause of such an increase. Given the number of indicators of quality of life involved in the study, the increase in the number of household clusters could be due to a number of factors. Firstly, classifying households using different QOL indicators–which could not be avoided in this case due to improvements in data collection in years subsequent to 1996–could affect the classification process, leading to a different number QOL groups. Secondly the number of household clusters could increase due to an increase in the number of households being classified provided the households differ in access to the considered QOL indicators. Thirdly the increase in the QOL clusters could be due to an increase in differential access to the selected QOL indicators.

Before getting into a scrutiny of which of the three possibilities could be responsible for the increase in the number of clusters, it is important to once again put across the thinking behind the study's expectation with regard to clustering households into QOL groups. In applying cluster analysis during the current study, the thinking was that the outcome of the clustering process (i.e. the number of clusters and characteristics thereof) would be the same for all four datasets (OHS1999-OHS1996) provided the contents of the data are similar. If all sampled households in a particular year access the same indicators equally (a very simplistic and naive view), the outcome would be one cluster of households because the characteristics of the households are the same, irrespective of how many

households are sampled. This would hold for all four datasets relating to the period under review. The reality however, is far from this because household characteristics differ even within one year. So there is no way cluster analysis would yield one group of households. If households are classified into QOL groups on the basis of the same indicators throughout the reference period (OHS1996-OHS1999), different clusters would emerge because of the differences inherent in the household characteristics. This is what the current study would have expected but the experience during data analysis is different. A few QOL indicators were common in all four datasets. As a result cluster analysis (and indeed discriminant function analysis) were applied to different indicators during this study although the common indicators (eight in number) were consistently incorporated. Sticking to the eight common indicators would have enhanced analysing the changes in QOL clusters throughout the reference period but the eight indicators are insufficient to operationalise quality of life. As a result, additional indicators present in the datasets were considered for incorporation even though this made comparison rather difficult. This borne in mind, one can look at what could be the plausible cause of the increase in the QOL groups.

The first possible cause mentioned above (i.e. classifying households using different QOL indicators) cannot be ruled out completely in this study but attempt was made to minimise its effects. For instance for OHS 1997, the indicator *Toilet facility used by household* was captured in such a way that it could not be used in conjunction with other variables in the analysis. This is because households using specific toilet types were captured separately. Households using a flush toilet for example were captured alone, the same applies to households using other types of toilets. As a result this indicator was left out in cluster and, discriminant analysis for this particular dataset. However, it was included in the description of QOL conditions experienced by the resultant household clusters.

Another crucial indicator that has been inconsistent in the analysis for the period referred to relates to medical aid cover; not all four data sets had this variable captured. This is likely to have a potential impact on household access to health care services and of

course to quality of life. Similar inconsistencies in the indicators used for different datasets relate to what comprises durable items. In some of the datasets, possession of items like a car, radio, television, etc. were not captured, a situation that forced recourse to the use of proxy indicators in the study. For instance, the mode of transport used by households to get to work was used as a way of establishing possession of a vehicle by households. This in itself has its own weaknesses because the requirement for transport when going to work could be influenced by several factors, distance being one, parking space and safety of the vehicle being another. Besides some of these cases, basically the same indicators were used for OHS 1996 through OHS 1999 which enhances comparability.

The second possible cause of the increase in clusters is not likely to come into the picture given the fact that these are samples of households. Even though the sample sizes fluctuated substantially, in terms of actual sampled households and due to some cases being eliminated because of missing data, the fluctuation should not adversely affect the number of household clusters particularly if samples are judiciously selected and hence representative. Representativity is taken as given because the samples are nationally representative (see description of samples in chapter three, section 3.4.3 and the metadata in Appendix J). All in all the number of sampled households increased in the final analysis, from 15, 328 in 1996 to 24, 583 with the largest sample size of around 28, 639 having been selected in 1997. So the increase in the number of clusters cannot be attributed to the changes in sample size.

With the first two possibilities ruled out, the most probable explanation of the observed increase in household clusters is due to an increase in differential access to the selected QOL indicators. This is backed by the way the number of QOL groups was determined (i.e. using Mahlanobis's distance). That being the case, what needs to be focused upon then are the changes in cluster composition.

Findings in respect of cluster composition reveal changes in socioeconomic and demographic composition of the household clusters.

With regard to socioeconomic composition, results indicate some inconsistencies with regard to households in clusters with the best and poorest QOL conditions (see Table 8.1). For instance in 1996 the cluster or group with the best access to the selected indicators (QOL2) has 1365 households out of the 15370 households studied. This constitutes 8.9% as compared with 1984 or 12.9% households in QOL3 with the poorest access to the said indicators. For OHS 1997, close to 38% of the 28639 households involved in the study are found in QOL7, the group with the best access to the selected QOL indicators as compared to 6.4% in QOL3 with the poorest access to the same indicators. As for 1998, 16.7% of the 18005 households are in QOL1, the best QOL group while 13.3% are in QOL2, the poorest QOL group. For OHS 1999, 8.3% of the households involved in the study belong to QOL4, experiencing the best QOL as compared with 13.8% in QOL5, a group with the poorest QOL. It is important to remember that data for 1996 were classified into five groups whereas the classification process yielded seven QOL groups in the case of data for 1997 and 1998. Cluster analysis yielded eight QOL groups in the case of OHS 1999.

Perhaps focusing on the extremes is rather too restrictive. Attention needs to be paid to the entire distribution of QOL groups (i.e. the four QOL indices) for the period under review. The summarised quality of life index is displayed in Table 8.1. Details of each QOL index have been documented as a separate chapter from chapter four to chapter seven. As a reminder the QOL index is an array of groups of households experiencing different QOL conditions. A typical household in a group with the best QOL indicators is one accessing most of the considered QOL indicators like using electricity for cooking and lighting, it has piped water in the dwelling, the household head is educated with tertiary qualifications an, employed on a full time basis, etc. On the poor side of the index, one finds a typical household having to fetch water from a stream, it uses wood as fuel, the head is uneducated or functionally literate and unemployed, relying on public health services due to having no medical aid, etc.

Table 8.1: **Summary distribution of QOL groups (1999-1996)**

Year	Number of QOL groups	Distribution of size QOL groups (percentage)							
Best		→ poorest							
1999	8	8.3 QOL4	3.6 QOL5	21.5 QOL1	18 QOL 7	10.4 QOL 8	13.7 QOL 3	10.8 QOL 6	13.8 QOL 2
1998	7		16.7 QOL1	9.1 QOL4	27 QOL 3	8.5 QOL 7	9.5 QOL 6	15.9 QOL5	13.3 QOL 2
1997	7		37.5 QOL 7	15.1 QOL2	15.5 QOL 1	7.6 QOL4	9.0 QOL6	8.8 QOL 5	6.4 QOL 3
1996	5				8.9 QOL2	34.5 QOL4	21.5 QOL 5	22.2 QOL1	12.9 QOL3

From Table 8.1 one should be in a better position to talk about not only the worst and best QOL conditions, but all the changes in the composition of the QOL groups constituting the QOL indices. Information in Table 8.1 shows an increase in the number of QOL groups from 1996 to 1999. The increase in the number of QOL groups or clusters is in itself indicative of an increase in differential access to the QOL indicators, having ruled out, to a fair extent, the other possible causes in the previous discussions. The increase in the number of QOL groups partly answers the main question of this study; has QOL in South Africa improved?

While the increase in the number of QOL groups could be described as gradual and in some instances contested, a peculiar finding pertains to the distribution of households in the QOL groups. Just like in the case where focus was on the extreme QOL groups, inconsistencies are observable when one looks at the entire array of QOL indices. One logical way of assessing the QOL indices on an annual basis would be to examine a composite of QOL groups in each index (i.e. to compare groups with better and poor QOL conditions). Information pertaining to the distribution of the top and bottom composite groups is shown in Table 8.2 below. The QOL index for OHS 1996 consists of five QOL groups. A comparison of the top two and bottom two QOL groups reveals that 43.4% of the households fall in QOL2 and QOL4 as compared to 35.1% in QOL1 and QOL3-the bottom two QOL groups. For OHS 1997 and OHS 1998 with seven groups, it suffices to compare the top three and bottom three QOL groups.

If this approach is taken, we find that 68.1% of the households are found in QOL7, QOL2, and QOL1 as compared to 24.2% found in QOL6, QOL5, and QOL3–the bottom three QOL groups. A similar result is obtained for OHS 1998 with 52.8% of the households falling in the top three QOL groups compared to 38.7% found in the bottom three QOL groups (i.e. QOL6, QOL5, and QOL2).

Table 8.2: Distribution of the top and bottom composite groups (1999-1996)

Year	Best groups	Percentage	Poorest groups	Percentage
1999	QOL4, QOL5, QOL1	33.4	QOL2, QOL46, QOL43	38.3
1998	QOL1, QOL4, QOL3	52.8	QOL2, QOL5, QOL6	38.7
1997	QOL7, QOL2, QOL1	68.1	QOL3, QOL5, QOL6	24.2
1996	QOL2, QOL4	43.4	QOL3, QOL1	35.1

In the case of OHS 1999 with eight QOL groups, the top and bottom three QOL groups could be considered in the comparison, leaving the two centrally located QOL groups out (i.e. QOL7 and QOL8). In this case, 33.4% of the households are found in the top three groups (i.e. QOL4, QOL5, and QOL1) as compared to 38.3% found in the bottom three groups (i.e. QOL3, QOL6, and QOL2).

A comparison of the poorer composite QOL groups shows the percentage of households to have varied between 38.7% (recorded in 1998) and 24.2% (recorded in 1997) as shown in Table 8.2. On the better side of the QOL index, one observes more fluctuations than on the poorer side of the index. The better composite QOL groups show the percentage of households to increase from 43.4% in 1996 to 68.1% in 1997 but dropping substantially to 33.4% in 1999.

These observations particularly on the better side of the QOL index are not only peculiar but also contrary (in certain instances) to the expected empirical trend of events as will be discussed later on. All in all one aspect this finding highlights is that there have been changes in measurable socio-economic conditions during the reference period in spite of the observed inconsistencies.

One other observation in the context of this study pertains to the racial and sex composition of households in the various QOL groups. For all the datasets reviewed, the groups with the poorest QOL conditions consist of Africans as the majority, with Coloureds in most cases, complementing the small remaining portions. Table 8.3 provides information in respect of the distribution of the African/Black population in the four extreme QOL groups for the period 1996-1999. A closer look at the distribution of the bottom two QOL groups shows African households dominating the groups. As for the poorest QOL groups at least 95% of the households are African throughout the reference period, with the highest figure (98.2%) being recorded in 1996. The proportion of African households differs somehow (with fluctuations in some cases) when it comes to the second poorest QOL groups. The concentration of African households in the second poorest groups shows substantial declines in 1999 and 1996 but not in the two years that lie in between.

Table 8.3: Percentage distribution of African/Black population in the top two and bottom two QOL groups (1999-1996)

Year	Best group	Percentage	Second best group	Percentage	Second poorest group	Percentage	Poorest group	Percentage
1999	QOL4	46.4	QOL5	59.9	QOL6	81.5	QOL2	95.8
1998	QOL1	76.2	QOL4	93.5	QOL5	97.6	QOL2	97.0
1997	QOL7	48.0	QOL2	93.7	QOL5	98.5	QOL3	96.3
1996	QOL2	36.4	QOL4	55.2	QOL1	90.0	QOL3	98.2

As for groups with the best measurable conditions, African households seem to be making inroads with percentages nearing 50% in 1997 and 1999 as in indicated in Table 8.3. While African households are dominant in groups with the poorest QOL, the situation is rather different when it comes to groups with the best QOL conditions. Households from all population groups do appear in these groups, of course in varying proportions. For instance results for OHS 1999 indicate that 41.7% of the households in group four – the group with the best measurable conditions - are white while African households constitute 46.4%. Coloured households account for 7.2% while 4.2% are Indian households. As for OHS 1998, 76.2% of the households in group one - with the best access to the selected indicators - are African while 14.7% are Coloured.

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White households make up 7.1% while 2% are Asian households. In OHS 1997 African households constitute the majority (48%) in QOL7, followed by white households (26.4%). One in five households in this group is coloured while 5.4% are Asian/Indian households. As for OHS 1996 White households dominate QOL2, the group with the best QOL conditions at 44.4% followed by African households at 36.4%. Coloured households make up 8.7% and Asian or Indian households constitute 7.4%.

The changes in the demographic composition of QOL groups are quite evident when groups with the second best QOL conditions are considered. All of these groups are dominated by African households with the lowest percentage (55.2%) observed in 1996.

For OHS 1999, six out of ten households in group five, the second best QOL group, are African while a quarter are belong to Whites. Coloured households constitute 12.1% and Asian or Indian households make up 2.5%.

In 1998 close to 94% of the households in QOL4 are African while 6.1% are coloured. White and Indian households are minute. The situation in 1997 is quite similar to that in1998 with 93.7% of the households in QOL2 being African or Black (see Table 8.3 above).

The finding in respect of the racial profile of the QOL index highlights changes that have occurred during the period 1996-1999. The results above indicate that while African or Black households still dominate the poor QOL groups and, by implication are still living in poverty, several Black households are gradually moving into better QOL groups hence living better than before.

When it comes to the sex composition of household heads, findings reveal women to be in the majority of household headship in all groups with the poorest quality of life except for OHS 1997 (see Table 8.4). In OHS 1999 for instance, 53.3% of the households in QOL2, the group with the poorest quality of life, are headed by females. In the case of OHS 1998, 59% of the households in QOL2 are headed by females, just as 53.2% of the

households in QOL3 in OHS 1996. The only exception to this pattern is in OHS 1997 where QOL3 is the poorest group in terms of access to the selected indicators and, male headship is in the majority (52.3%).

Table 8.4: Percentage distribution of female household headship in the extreme QOL groups (1999-1996)

Year	Best group	Percentage	Poorest group	Percentage
1999	QOL4	25.5	QOL2	53.3
1998	QOL1	25.1	QOL2	59.0
1997	QOL7	28.0	QOL3	47.7
1996	QOL2	22.2	QOL3	53.2

As for groups with the best QOL, male headship dominates throughout the period under review. As indicated in Table 8.4, males head at least 75% of the households in groups with the best measurable living conditions. In other words, a typical household belonging to the best QOL group on the QOL index is male headed. This finding highlights women to be carrying disproportionately high socio-economic burdens by heading households in environments where aspects pertaining to quality of life are poor.

The results in respect of cluster analysis and the QOL index highlight changes that have taken place in respect of household access to selected QOL indicators. Most of the indicators (as reflected upon in chapters four to seven) relate to basic human needs. While a substantial number of households still experience poor socio-economic conditions, results indicate substantial progress to have been made. As indicated earlier on when dealing with the results of the QOL index, findings of the current study have yielded mixed results. This is particularly the case when one looks at the QOL index where results (as shown in Tables 8.1 and 8.2) are in conflict with the expected empirical trend of events.

As indicated in Chapter two dealing with the literature review, assessing changes in households' living conditions is not new in South Africa. One institution that has worked considerably in measuring changes in household living conditions in South Africa is the South African advertising research foundation (SAARF).

SAARF (2002) developed a measure of living standards referred to as the SAARF AMPS^{TM} Living Measure. This is a measure that was initiated in 1988/89 and has evolved to become a universal measure of living standards. The SAARF Universal LSM^{TM} is a scale used to indicate the socio-economic status of an individual or group (SAARF, 2002:3). Households are grouped on the basis of access to specific household variables such that households accessing similar variables are grouped together forming one LSM group. Prior to the establishment of the SAARF Universal LSM, and its publication in 2002, households in South Africa used to be grouped into seven LSM groups. Due to socio-economic development and market – specific needs, the LSM scale was extended beyond the seven segments. Currently the SAARF Universal LSM^{TM} scale is divided into ten segments. Households of least status form the segment referred to as 'SAARF Universal LSM^{TM} 1', and households of highest status form 'SAARF Universal LSM^{TM} 10' (SAARF, 2002; SAARF 2004). SAARF indicates that as the South African society develops, the SAARF Universal LSM has the ability to be extended beyond group 10, and 11, 12, etc. will be added as time goes by but up to now, ten LSM groups prevail. The whole scale from LSM 1 to LSM 10 constitutes the SAARF Universal LSM^{TM}.

As far as the group with the least status is concerned, SAARF (2002: 16) indicates that virtually everyone in this group - SAARF Universal LSM^{TM} 1 - are rural dwellers (99%), with females being more numerous, as are people aged 50 and older. The level of education is low with hardly anyone with more than high school education, and 27% having had no formal schooling. Most likely as a result of the low education level, average income for this group is low (R 777), and unemployment is high (46%). Most of these households (74%) are concentrated in KwaZulu Natal (KZN hereafter) and Eastern Cape (EC hereafter). With Zulu and Xhosa being the main languages spoken, one is inclined to infer that the majority of these households are African or Black. Three quarters live in traditional huts with only 4% having piped water on their property. Eleven percent of the households have electricity from the mains but about 4% cook with electricity. Though toilets are frequent, 64% use long-drops or non-flushing designs. Virtually none owns a vehicle or cell phone.

On the best side of the scale - SAARF Universal LSM^{TM} 10, – 55% of the households are English speakers and 48% speak Afrikaans. The group is generally middle-aged with 35% of the people falling in the 35-49 age category and 18% falling in the 25 – 34 category. Forty percent have gone on to post-matric studies-15% at university. The group has many professional/technical people with household income averaging over R13788 a month. It should not be surprising then, that unemployment in this group is low at 4%. The majority of households in this group (96%) reside in conventional houses, with flats making up the difference. Cell phone ownership is 74%, while vehicle ownership is 82% (SAARF, 2002: 53).

SAARF cautions people not to confuse LSM's with income. The LSM is a wealth measure based on standard of living rather than income - in fact, income does not appear anywhere within the LSMs at all. An example is given of a student, who lives in his parents' up market home in Sandton. The student might live in an LSM 10 home, and yes, he will be different from a person living in, say, an LSM 4 home, but if his only income is derived from a part-time job while he is studying, his disposable income will be low. So one needs to think clearly when interpreting and applying the LSM index.

SAARF's findings emanate from data consisting of a wide array of household goods (including numerous household appliances), services and amenities. A number of variables used in their analysis differ from those used in the current study (SAARF, 2002: 62). The current study makes use of secondary data which was never collected for its own purpose. This could have contributed to some of the differences in the findings of the current study as compared to those of SAARF, like the number of groups experiencing different socio-economic conditions.

Secondly, the time at which data were collected also differs and definitely, socio-economic conditions are not static. This could also have contributed to the differences observed between the SAARF's findings and those of the current study. Thirdly, the SAARF Universal LSM as a measure of socio-economic status, was developed partly to address issues relating to marketing and market segmentation; the latter necessitated the

investigation into the possibility of splitting the top two LSM groups. Never the less, the findings of SAARF (2002) have a lot in agreement with the findings of the current study. This is particularly so when one looks at the characteristics of the poorest and the best QOL groups in the current study.

What is disturbing though, as far as the current QOL index is concerned, is the suggestion that QOL has deteriorated when one looks at the proportion of households in better QOL groups which on the contrary, have increased (see Table 8.1)! This looks contrary to other empirical findings, some of which arise from the use of the same data. For example, in reporting on the changes that took place in South Africa's households between 1995 and 1999, Stats SA (2001: 75) indicated that there had been a gradual increase in the proportion of households that had access to clean water (piped water in the dwelling or on site, communal tap or public tanker). While the proportion of households using water from boreholes is reported to have dropped during the reference period, the proportion of households obtaining water from rivers, streams and dams remained approximately constant, hovering around 12%, possibly indicating that improved access to clean water had not significantly affected previously disadvantaged households in deep rural areas (see also census results in Stats SA, 1996; Stats SA, 2001).

When one analyses the kind of situation highlighted by Stats SA (2001) above, one is inclined to say that the current QOL index may not be as flawed as one might have thought in that the benefits of socio-economic development may not have filtered through to all households as fast as expected. All in all more work may be required improve on the current QOL index if triangulation is to be achieved through its application.

8.5 Discussion of findings in respect of perceived quality of life

One of the issues this study set out to establish relates to the assertion that improved household material conditions influence perceived quality of life. Much as this was not put across as a hypothesis for this study to test, interest in examining the interrelationships between the two [objective and subjective] conditions exists, given the existing literature that relates to them (Moller *et al*., 1987; Moller, 1996; Diener *&*

Suh.,1997; Hagerty *et al*.,2001). Findings of this study reveal mixed responses as far as subjective assessment of QOL is concerned. It is important to note first of all that a consistent comparison of the findings is possible in the case of the results for OHS 1998 – OHS 1996. This is because households were consistently asked to indicate how satisfied they were, taking everything into account. The question addressing this particular issue was phrased differently for OHS 1999. For OHS 1999, households had to compare life in 1999 with life in 1998. In both cases, interesting findings emanate from the analysis as indicated below in a rather summarized manner; the details are provided in chapters four to seven.

In reference to the conceptual model, the assertion is, objective living conditions influence perceived household quality of life; households experiencing satisfactory living conditions are likely to report similarly when it comes to the subjective QOL assessment, the reverse expected to hold. In the case of OHS 1999, this pattern is evident with proportionately more households in QOL groups with better living conditions, reporting improvements in their subjective assessments. Findings in this respect have been summarised in Table 8.5 below. Proportionately more households in QOL groups with better access to the considered indicators reported their life to have improved than households belonging to groups with poor access to the selected indicators. For instance 35.6% of the households in QOL 4 (ranked number one) reported their life to have improved compared with 13.9% in QOL2 (with the poorest QOL). Looking at the three groups experiencing the best QOL, 19.3% of the households in QOL5 (ranked number two) reported an improvement in life while 26.4% of the households in QOL1 (ranked third) reported an improvement in life. The percentages of households who reported life to have worsened in the groups with better access to the selected indicators vary between 21.6% in QOL4 through 24.2% in QOL1 to 31.1% in QOL5. In poor QOL groups (groups ranked sixth to eight) one finds proportionately more households which feel that their life worsened than those which feel that life improved (see Table 8.5).

A point worthy noting is the consistency in the proportions of households which felt that things had not changed after all, irrespective of the grouping of households. There is minimum variation in this category which is substantial, fluctuating between 42.7% in QOL4 and 49.6% in QOL6.

Table 8.5: A comparison of subjective assessment of QOL groups for OHS 1999 (percentage)

	Best ➡						Poorest	
	QOL4	QOL5	QOL1	QOL7	QOL8	QOL3	QOL6	QOL2
Life has improved	35.6	19.3	26.4	15.6	18.3	15.8	16.5	13.9
Things are the same	42.7	49.6	49.3	46.3	49.9	45.1	49.6	47.0
Life is worse than 1998	21.6	31.1	24.2	38.1	31.7	39.1	33.9	39.1

In the case of OHS 1998 to OHS 1996, households indicated how satisfied they were at the time of the survey, taking everything into account. Table 8.6 provides a summary of the findings in this regard. The expected association between the objective QOL results and the subjective response is evident in the results for 1998 and 1997; it is not as clear in 1996. For 1998 and 1997, the percentages of households reporting to be satisfied with life are generally higher in QOL groups with the best access to the selected QOL indicators than in QOL groups with generally poor access to the same indicators. The inverse holds when it comes to the dissatisfied categories. Although there are fluctuations in the results for OHS 1996, a similar situation described for OHS 1998 and OHS 1997 is evident. When it comes to households which felt that things had not changed, there is almost same variation – around 6% difference- in the percentages for these groups than what is revealed in OHS 1999.

Table 8.6: **A comparison of subjective assessment of QOL groups for OHS 1998 to OHS 1996 (percentage)**

	Best ➝ Poorest						
1998	QOL1	QOL4	QOL3	QOL7	QOL6	QOL5	QOL2
Satisfied with life	69.9	49.8	73	58.1	61	51.5	50.4
Neither satisfied nor dissatisfied	15.5	22.3	14.1	21	20	20	22
Dissatisfied	14.6	27.8	13	20.4	18.9	28.4	26.8
1997	QOL7	QOL2	QOL1	QOL4	QOL6	QOL5	QOL3
Satisfied with life	73.7	64.9	68	57	52.1	52.1	55.2
Neither satisfied nor dissatisfied	16	20.2	19.2	21	24.8	27.6	23
Dissatisfied	9.8	14.9	12.9	21	22.7	20.3	21.8
1996			QOL2	QOL4	QOL5	QOL1	QOL3
Satisfied with life			67.4	61.8	47.5	50.4	40.5
Neither satisfied nor dissatisfied			20	20.2	26	26.7	32
Dissatisfied			12.5	18	26.3	22.5	27.3

The findings highlighted above have a lot in common with the findings from similar studies conducted before. Moller (1996) analysed secondary data on QOL, data that had been collected by South African Labour and Development Research Unit (SALDRU). Among the questions that Moller's analysis attempted to address was whether high levels of satisfaction are related to high levels of household income and expenditure. A related question was whether lower income levels are associated with basic needs to a greater degree than higher income levels. Yet another question that her analysis focused on dealt with *"the relationship between perceived financial achievement ("past satisfaction"), current satisfaction, and expectations of satisfaction in future ("future satisfaction").*

With regard to the relationship between income and satisfaction, Moller's findings revealed a consistent pattern emerging between the two: income and expenditure levels co-varied with levels of satisfaction with living standards. This finding suggested that income levels might influence expressions of present satisfaction with QOL. However, future satisfaction was not income-linked.

According to Moller (1996: 241), recent cross-cultural studies shed more light on the significance of income and fulfillment of basic needs in relation to happiness. Moller (1996) indicates that cross-national studies show that material wealth is a consistent and important predictor of QOL. Money has increasingly become a global value and universal goal. Income straddles the material and non-material divide in that it confers social standing and begets influence in most societies. It allows individuals to fulfill a wide range of personal goals including non-material ones.

As for the relation between "past satisfaction" and "future satisfaction", future satisfaction indicators highlighted the raised expectations for a future beyond apartheid which was most pronounced among black South Africans. When present and future satisfactions were combined, the future winners (current dissatisfaction and optimist for the future) and lower income earners expressed the need for basics such as food, shelter, infrastructure and income-providing jobs. Current satisfaction and higher income regardless of future outlook were linked to needs for stability, peace and income maintenance. Higher- and lower - income groups shared to a certain degree the need for peace, which may be viewed as a prerequisite for the provision of basic needs.

Moller indicates that these findings support the hypothesis that *satisfaction is not relative but linked to basic needs and income especially in the case of poorer populations*. The effect of income on satisfaction was stronger in lower - income families at the bottom of the racial hierarchy (Blacks) but still had an effect when basic needs were met. This in a way suggests that income continues to influence satisfaction beyond basic needs.

Diener and Suh (1997) indicate the importance of combining objective and subjective indicators if QOL is to be comprehended. Objective or social indicators are societal measures that reflect people's objective circumstances in a given culture or geographic unit. According to Diener and Suh (1997:192), the hallmark of social indicators is that they are based on objective, quantitative statistics rather than on individuals' subjective perceptions of their social environment.

Under the conceptual umbrella of social indicators, variables representing a wide range of societal domains have been identified, and measured. In the health domain for example, these include indices like infant mortality and life expectancy, doctors per capita, and bed occupancy ratio. Indicators related to crime, like police per capita, incidence of rape, suicide and homicide rates, have been established to assess crime–related quality of life. Other commonly used social indicators include literacy rates, unemployment rates and income per capita. Income and wealth in general, are found to significantly influence quality of life but it is not an accurate predictor of good or satisfactory quality of life (Diener & Suh, 1997:193). If wealth was the sole determinant of satisfactory quality of life, nationals of the oil rich countries will be reporting satisfactory quality of life. Along that thinking, one would expect the wealthy people in developed nations like the US, Europe, and Japan to be reporting good and satisfactory quality of life but this is not the case. Despite some deviations from the norm, material welfare plays a great deal in influencing people's perception of their quality of life.

On the qualitative side of QOL are the subjective indicators of wellbeing. According to Diener and Suh (1997) subjective well-being is concerned with the respondents' own internal judgment of well-being. It is a concept that reflects on how people internally react to and experience the events and situations in their lives. Subjective well-being is a reflection of people's reactions to the conditions and experiences in life; how pleasant or unpleasant a job is, how satisfied or unsatisfied with the salary, working conditions, etc. If this is to go by, one would expect a strong relationship between social indicators-reflecting objective conditions – and subjective well-being measures, but it is not always the case. Diener and Suh (1997: 201) found small correlations between subjective well-being and objective resources. In the World Value Survey II of nationally representative samples of 43 nations and regions, Diener and Suh (1997) found subjective well-being correlating 0.13 with physical attractiveness, 0,10 with physician–related health, 0.12 with income, and 0.17 with intelligence. Several factors could arguably be responsible for such low correlations. One could be adaptability. People tend to rapidly adapt to their levels of resources and experiences.

As a result people who had reported to be unhappy at a certain level of material conditions could later report to be happy. Another reason for the low correlations could be the fact that well-being is influenced not only by external life conditions but also by stable dispositional characteristics. Different people may perceive the same life circumstances differently.

According to Diener and Suh (1997) people's psychological adjustment strategies to objective conditions appear to be remarkably flexible but the degree of flexibility seems to be limited by resource availability. People tend to aspire for, or set goals of achievements basing on the material resources at their disposal. People choose personal goals for which they have relevant resources, and the degree of congruence of individuals' goals with their resources predicts their subjective well-being (Diener & Suh, 1997: 202).

The issue of combining objective and subjective indicators as a way of comprehending QOL holistically has been advanced greatly in social indicator development. Hagerty *et al.* (2001) reviewed twenty two QOL indexes on the basis of fourteen criteria. The criteria were developed by a nine-man committee. A review of the twenty two QOL indexes showed that the current QOL indexes are playing a useful role in measuring quality of life. This said however, the committee found that different indexes conceptualise QOL differently, and in most cases, use different domains in the process. One of the criteria used in the review stated categorically that "Each domain must have the potential to be measured in both objective and subjective dimensions" (Hagerty *et al.*, 2001:7). This was after realising that very often, objective indicators of QOL do not correlate highly with their subjective counterparts. Hagerty *et al.* (2001:8) go ahead to argue that subjective well-being is a necessary, but not sufficient, condition to capture the totality of life experience. A person may report a high level of subjective well-being, despite environmental conditions bad enough to significantly shorten life expectancy, hence affecting immediate future QOL. Similarly, objective conditions (like health and material possessions) of a person may have very little to do with subjective well-being.

According to this argument both subjective and objective indicators are necessary conditions, but neither is sufficient to encompass the totality of life experiences. Quality of life is perceived to be an end state of being, but knowledge and evaluations of that state have a lot to do with the objective conditions (i.e. level of living) one experiences. Quality of life should be assessed through subjective indicators, but the level of living has to be assessed using objective indicators. Thus, both subjective and objective indicators are needed to capture the totality of the means and ends of QOL (Hagerty *et al*., 2001:8).

Given the above revelations by Diener and Suh (1997), Hagerty *et al*. (2001), and Moller's findings, it suffices to say that objective conditions greatly shape people's expression of what they report with regard to well-being and satisfaction, bearing in mind that people adapt psychologically to any level of material circumstances at a given time. Looking at the findings of the current study, the reviewed literature in conjunction with the way QOL has been conceptualised in the model (see chapter three), the assertion put across still holds, at least in the main; objective living conditions influence perceived household quality of life. In other words a household's ability to satisfy its needs (i.e. access to QOL indicators) influences the material living conditions and, the living conditions shape its response to reported (i.e. subjective) QOL; this is the contention of the conceptual model.

8.6 **Discussion of findings in respect of the indicators differentiating between quality of life groups – discriminant analysis**

Chapters four to seven provided the study's results. One of the aspects the findings focused upon pertains to the indicator(s) differentiating between the quality of life conditions experienced by the groups of households. The discriminating indicators for the entire study (OHS 1999 – OHS 1996) are summarised as follows:

- Time taken by households to get to the nearest telephone;
- Distance from water source;
- Refuse disposal services available to households;
- Type of toilet used by the household;
- Household's main water source

- Main transport used by household heads to get to work;

- Type of dwelling occupied by a household;

- Highest level of education completed by the household head and;

- Employment status of household head.

The first four indicators emanate from discriminant function analysis for OHS-1999. The four indicators reflect the differences in ability to communicate by telephone, access to sanitation and water among the eight groups of households involved in the study. The point is, the eight QOL groups experience different QOL conditions mainly because of the difference in access to telephone, water, toilet, and refuse disposal. The differences in living conditions among these groups could be reduced or eliminated if household access to these indicators is improved. With regard to access to water and by implication, distance traveled to get water, it was revealed in chapter four that this particular indicator "distance from water source" differentiates groups two and three from the rest of the OQL groups. Groups two and three constitute 27.5% of the sampled households in OHS 1999. Results in chapter four (section 4.4.5) show that at least 7% of the households in each of these groups, travel over a kilometer to fetch water.

Reporting on the changes that took place in South Africa's households between 1995 and 1999, Stats SA (2001: 75) indicated that there had been a gradual increase in the proportion of households that had access to clean water (piped water in the dwelling or on site, communal tap or public tanker). While the proportion of households using water from boreholes is reported to have dropped during the reference period, the proportion of households obtaining water from rivers, streams and dams remained approximately constant, hovering around 12%, possibly indicating that improved access to clean water had not significantly affected previously disadvantaged households in deep rural areas. This finding is in line with the findings of the current study. This should not come as a surprise since the data used is the same. What needs to be highlighted is the locality of the households wherein access to safe water is still a problem so that the issue is addressed. Results of this study indicate that the majority of households in groups two and three belong to QOL groups (in OHS 1999) ranked

eighth and sixth respectively. The majority of these households are found in the rural areas of KwaZulu Natal, Eastern Cape, Mpumalanga and Limpopo province (See section 4.4.5).

One other factor highlighted in differentiating household QOL is access to telephone, with the resultant distance that households have to travel in order to make a telephone call. In the context of this study, access to a telephone is a problem to households belonging to groups with generally poor QOL. This is applicable to the entire reference period (i.e. 1996 – 1999). In the case of OHS 1999 where distance to a telephone emerges as one of the discriminating factors, this indicator differentiates three groups from the rest, namely group two, three and eight (see section 4.4.6, Table 4.13). These three groups are ranked eighth, sixth and fifth on the QOL index respectively (See Table 8.1 above). The three groups account for 37.9% of the households studied.

Stats SA (2001:84) reports that household surveys of 1995 to 1999 show the proportion of households with a telephone in the dwelling or a mobile telephone to have increased from 29.1% to 34.9% over the reference period. It is further revealed that the proportion of households which had to seek telephone services outside the home environment had consequently decreased. For OHS 1999, it is reported that 36.2% of the households were 15 minutes or less away from the nearest telephone and, 29% were 16 minutes or more away from the nearest telephone. Stats SA's results report an improvement in respect of this particular indicator for the period 1995 – 1999.

On further scrutinizing the data for OHS 1999, cluster analysis results show that much as 34.9% of the households reportedly have a telephone or a mobile telephone in the dwelling, only 2.2% of these households are found in the group with the poorest QOL (i.e. QOL2). So access to a telephone remains a critical factor in the context of this study.

A third factor highlighted in differentiating household QOL for OHS 1999 relates to refuse disposal services available to households.

Results in respect of access to sanitation show groups two, three and eight to be distinctively different in this respect from the rest of the QOL groups (see section 4.4.4, Table 4.11). In each of these groups, less than 15% of the households have their refuse removed by local authorities on a regular basis. This is in contrast with households in better QOL groups which rely mostly on local authorities to remove their refuse.

The difference in the method of refuse disposal generally relates to the rural - urban situation of households. The majority of households relying on rubbish pits are clustered in groups in which households are mostly rural based. Most of such areas have poor access to basic services which in turn, impacts negatively on the QOL conditions for households in the groups concerned. On the other side households with access to refuse disposal belong to QOL groups with better living conditions. Most of these households belong to QOL groups with a strong urban bias. Such areas often have refuse removal services organised by urban local communities. This pattern is consistent throughout the study's findings for the period under review.

At the aggregated level Stats SA (2001: 83) indicates that throughout the five years from 1995 to 1999, no marked change was evident in terms of the proportions of households which have access to formal refuse removal services. It is reported that on average, more than half of the households in South Africa live in areas where refuse is removed at least once a week by local authorities. The report further indicates that in areas where no coordinated system for refuse removal is in place, some households make use of a rubbish dumps to dispose of household refuse. Between 1995 and 1999, the trend depicted is that of a steadily increasing proportion of households using rubbish dumps to dispose of household refuse (rising from 31% in 1995 to 37.7% in 1999). Finally, it is reported that the proportion of households with no systematic method of refuse removal consequently decreased from 13.3% in 1995 to 6.9% in 1999. These findings are in the main, in agreement with the findings of the current study.

The fourth and last indicator highlighted in differentiating household QOL for OHS 1999 is *type of toilet used by the household*.

Results in chapter four (see Table 4.11) reinforce this indicator as differentiating between groups with better off living conditions (QOL4, QOL5, QOL6, QOL1, and QOL7), and the groups with rather poor living conditions (QOL2, QOL3, and QOL8). The former category consists of groups with urban households mainly relying on the flush toilet (over 50%), and less reliance on the pit latrine. The latter category consists of groups with mostly rural households relying on pit latrines (50% and above) and, several households relying on bucket toilets.

This finding reveals that sanitation is still a problem to quite a number of households in South Africa. Stats SA (2001: 88) indicates that between 1995 and 1999, there is a possibility that the proportion of households with access to flush or chemical toilets decreased. This source indicates the percentage of households with a flush or chemical toilet to have stood at 56.9% in 1995. This percentage is reported to have risen to 62.1%, only to decline to 55.8% in 1999. As for households relying on pit latrines, 29.7% of the households sampled in OHS 1995 were found to be relying on pit latrines, a figure that rose with some fluctuations in between, to 30.3% in 1999. When it comes to households using other toilet types or having no access to toilet, the percentage rose from 8.3% in 1995 – fluctuating between 11% and 13.1% - to 10.6% in 1999. As one would expect, the poor toilet types (i.e. other or no toilet at all) are associated generally with poor dwellings. For instance, 46.2% of the households living in traditional dwellings in 1999 reportedly made use of "other" toilet facility or, they had no access to a toilet. As for households living in informal dwellings, one in ten households made use of "other" toilet facility or, it had no access to a toilet. For households living in formal dwellings, close to six out of ten households (59.7%) had access to a flush or chemical toilet. All in all, 48.5% of the sampled households in OHS 1999 in South Africa made use of a flush or chemical toilet while 35.8% used a pit latrine and 12.4% used "other" toilet or no toilet at all (Stats SA, 2001: 89). These findings share several commonalities with the findings of the current study.

The remaining discriminant indicators emanate from the analysis of data for OHS 1998 – OHS 1996. Indicators which featured in more than one year will be discussed once to avoid tautology. These are *Highest level of education completed by a household head* and, *Employment status of household head.* Before discussing the former, attention needs to be given to the discussion of the latter – Employment status – because of its relatedness to another indicator (*Main transport used by household heads to get to work*) which was also highlighted in chapter five as one of the discriminating factors in discriminant function analysis.

Results emanating from discriminant function analysis (OHS 1998) revealed *Main transport used by household heads to get to work* as an indicator having a strong linkage with *Employment status of household head,* in differentiating between QOL groups. Groups with working household heads include QOL1, QOL4, and QOL7 while the rest (QOL 2, QOL3, QOL5, and QOL6) have large proportions of unemployed household heads, with unemployment levels ranging between 89% and 95.6%.

In OHS1998, for households in groups where household heads are working (QOL1, QOL4, and QOL7) the head of household either walks to work or uses public transport. For instance 33% of the households in QOL1 – ranked number one on the index – walk to the work place while half of the household heads in QOL 4 walk to the work place. Some 65% of the household heads in QOL7 walk to the work place. For household heads that use public transport to get to work, the majority rely on minibus taxis and buses, with relatively small proportions relying on trains. For example 31.2% of the household heads in QOL1 use mini bus taxis while 20% use a bus to get to work. Trains are used by 8.7% of the household heads as transport to get to the work place. For households in group four, 23% of the household heads use minibus taxis while 13% use a bus and 5.5% rely on trains to get to work. In QOL7, 11% of the household heads use minibus taxis while 12% use buses and 6.4% use lorries to get to work.(See section 5.4.6).

The information above was derived from a variable addressing the issue of transport used by households when getting to work. The variable was used as a proxy indicator for possession of a vehicle by households. A further scrutiny of the results showed an interrelatedness between transport used by households and employment status of household heads. Groups of households where unemployment is high showed less need for transport as well as possession of a vehicle. In contrast, groups of households where most household heads are working showed a higher need for transport whether by own car or not. In the final analysis it was found that the discriminating effect of this particular indicator (*Main transport used by household heads to get to work)* in a way underpins the influence of unemployment on household QOL. Thus the real issue that needs to be addressed is unemployment if the inherent group differences are to be minimised.

The findings of this study highlight unemployment in a rather subtle way, given the fact that analysis was based on head of household. Even then, the disaggregated findings highlight the seriousness of unemployment as a problem. Statistics South Africa (Stats SA) conducts labour force surveys on a regular basis. In its findings for 2004, Stats SA reports that South Africa's unemployment rate stood at 26,2% in September 2004 as compared to 27,9% in March 2004. The decrease is reportedly statistically significant. In September 2004, 11 643 000 persons were employed as compared to 11 392 000 persons in March 2004. However, this change was not statistically significant. The increase in employment has largely been in construction at 25% and in trade at 8%. The number of unemployed people (estimated at 4,1 million in September 2004, based on the official definition) slightly declined compared with 4.4 million in March 2004. Black women continue to be the most affected by unemployment, more than seven times than white males (Stats SA, 2004)

Results of OHS 1999 indicate that unemployment in South Africa stood at 23.3%. This figure however, obscures crucial information regarding for instance, the sex and racial distribution of unemployment. For instance, while unemployment is generally higher among African people, African females are more exposed to unemployment than their male counterparts.

Stats SA (2001: 45) reveals that 24.5% of the economically active African males were unemployed in 1999 as compared with 35% of the their female counterparts. In fact unemployment was highest among African females at 35% and lowest among white males (4.4%). For white females unemployment stood at 5.1%. Looking at the labour absorption rate (i.e. the proportion of the working age population that is employed), 41.2% of the African males sampled in 1999 were employed as compared with 73% of the white males. In the case of females, 26.3% of the African females were employed as compared with 56.3% of the white females. For South Africa as a whole, the absorption rate stood at 39.7%.

A comparison of labour market statistics for the period 1995 to 1999 reveals that the number of economically active people – employed and unemployed – increased steeply from 11.4 million in 1995 to 12.8 million in 1999. This is indicative of an increase in the number of labour market entrants. The findings of this survey also reveal that the number of employed people (both in formal and informal sectors) increased gradually over the reference period from 9.6 million to 10.4 million. Furthermore, the number of unemployed people increased over time, from 1.8 million in 1995 to 3.2 million in 1999. This reportedly implies that new job creation in both the formal and the informal sectors was unable to keep pace with the demand for work (Stats SA, 2001: 48).

Stats SA (2003: 54) provides a rather more current situation regarding unemployment in South Africa. A comparison of the findings from the 2001 census and the Labour Force Survey (LFS) 2001 is shown. The census results indicate the unemployment level to be 41.6%, a figure that differs substantially from 29.5% emanating from LF September 2001. Incidentally, both surveys (i.e. census 2001 and the Labour force survey) use the official definition of unemployment (see definition of terms). It should be noted that there is a slight difference in the definition of unemployment, in part (b) for both surveys. In census 2001, part (b) reads as "*want to work and are available to start work within a week of census night*". In the Labour force survey, part (b) reads as "*want to work and are available to start work within two weeks of the interview*". In other words, there is a week's difference in the reference period.

As to whether this could explain the difference in the recorded unemployment levels emanating from the two surveys could not be established beyond the identified difference in the definition. In spite of the differences in definition and recorded unemployment figures, both datasets indicate that unemployment levels differ at provincial level, with Eastern Cape experiencing the highest unemployment (54.6%) and Western Cape recording the lowest (26.1%) as per Census 2001. Disaggregated statistics by race indicate that unemployment is highest among Africans (50.2%), followed by unemployment among coloureds (27%). The lowest unemployment is recorded among whites at 6.3% according to census figures. Introducing a sex dimension shows that unemployment is highest among African females (57.8%) followed by unemployment among coloured females (28.6%). Unemployment is lowest among white females at 6.6%. As for males, unemployment is highest among African males (43.3%) followed by that of coloureds (25,7%). The lowest unemployment level is among white males, recorded at 6.1%.

The problem of unemployment and job creation is not entirely new in South Africa. Loots (1996) looks at the relationship between these two issues and her findings indicate that although economic growth had taken place in the 1990's, unemployment remains significant and in fact increasing due to a number of factors. Firstly Loots (1996: 321 – 322) indicates that unemployment in South Africa is higher among women than among men on average. Loots' findings indicate that 37.3% of all economically active women are unemployed compared to 24.6% for economically active men. For African women, unemployment is as high as 46.9%. With regard to unemployment and race, the highest unemployment occurs among Africans, where approximately 40% on average are without any formal or informal employment; while those for coloreds, Asians and whites are 23.4%, 16% and 7.2% respectively.

The findings of this study do agree with the reviewed literature as far as unemployment in South Africa is concerned. Even though there is a difference in terms of time regarding the reference period and where we are today, unemployment remains a crucial factor in differentiating between households' living conditions in the country.

The indicator *Highest level of education completed by a household head* featured as a discriminating factor for the years 1996 to 1998. This in itself needs to be paid attention to given the multidimensional effect education has on QOL, but above all its effect on employment prospects. Loots (1996) says that education plays a crucial role in improving employment prospects especially through skills development. Much as this has been empirically outstanding for long, Loots (1996: 323) indicates that most unemployment in South Africa occurs mainly among the young and unskilled workers. Close to seventy percent (i.e. 68% to be precise) of the unemployed are younger than 34 years. Of the total, 51% are functionally illiterate; i.e. they have a qualification below grade nine. Further more, Loots (1996) indicates that 87% are not trained or skilled for a specific job, and 69% have no previous experience. Because these people cannot enjoy the benefits of rapid acquisition of skills, experience and the habits of work which young people normally learn before the age of thirty, they will be virtually unemployed in future. Most have abandoned all hope of finding jobs, becoming the so-called "discouraged workers". UNFPA (1994:7) indicates that when it comes to the economic emancipation of women, education is viewed globally as the key to access to economic resources; education undoes the most of the socio-economic and socio-political injustice against women.

8.7 Summary

Chapter eight has provided a discussion of the findings which were presented in chapters four to seven seven. Discussions in respect of changes in the age composition of household heads indicate that the changes are in line with the national pattern reflected by the census figures for 1996 and 2001. The sex distribution of household heads has been discussed, reflecting a dominance of females among households headed by people in the 15 – 19 age group as well as households headed by people over seventy years. The revealed situation in the two age groups has a negative impact on QOL given the fact that the household head is either too young to be well equipped with the skills required for gainful employment or she is retired. Changes in cluster composition have been discussed, reflecting not only an increase in the number of QOL

groups but also changes in respect of socio-economic status as well as race and sex composition of the households. The QOL index has been discussed and, an increase in the number of QOL groups is deemed to reflect an improvement in QOL due to a diversification of households accessing the selected QOL indicators. However, the shortcomings of the QOL index have also been noted particularly where the index is in contrast with existing literature.

Findings regarding changes in subjective perception of QOL have been discussed. These findings have been found to be in line with existing literature regarding the association between material living conditions and perceived quality of life.

Results emanating from discriminant function analysis highlight the key indicators that differentiate between the QOL groups. These results have been discussed with reference to the existing literature. The discriminating indicators provide a basis for addressing the differences in QOL between existing groups of households. Chapter 9 will provide the conclusion and, recommendations based on the study's findings.

CHAPTER NINE: OVERVIEW, CONCLUSION, RECOMMENDATIONS AND LIMITAIONS

9.1 **Introduction**

Having discussed the research findings and their interpretations with reference to the related literature in chapter eight, this chapter will provide an overview of the study as well as the conclusion and recommendations arising from the analysis and interpretation of the research findings. Attempt will be made to identify and recommend areas for further study in order to improve the living conditions of households in South Africa. Below is a brief overview of the study.

This study set out to measure quality of life and, to analyse the changes in household quality of life between 1996 and 1999. The analysis focused on changes in household access to selected indicators of quality of life, QOL having been conceptualised in terms of households' ability to satisfy basic needs. The most pertinent question this study sought to answer was; has quality of life in South Africa improved? Answers to this question were sought in reference to the period 1996-1999. Results from the analysis of the data pertaining to the reference period indicate an improvement in household QOL in certain respects. For instance an increase in the number of groups of households (i.e. QOL groups) accessing the selected QOL indicators has been noted. The increase in the number of QOL groups is indicative of an increase in differential access to the selected quality of life indicators. On the other hand however, proportions of households belonging to QOL groups with relatively better access to the selected QOL indicators have been found to fluctuate. In fact the proportions have substantially gone down in some instances particularly in 1999. This has left the study's response to the pertinent question, inconclusive and certainly not definite. The study has also found that despite the improvement in QOL, a number of factors (indicators) differentiate between the living conditions experienced by households in the various QOL groups. These include amongst others, unemployment, level of education completed by household heads, access to toilet and piped water, type of dwelling and, access to transport and telephone services.

These indicators interact in various ways and, at different levels to impact on household QOL as indicated in the study's findings and discussions.

9.2 Conclusions arising from the analysis and interpretation of the research findings

The following conclusions arise from the findings of the study. They throw light on critical areas, which if paid attention to, could further improve QOL in South Africa.

- The age distribution of household heads reveals a dominance of females in the young age group (15-19) and the old age category (over 70 years). A household headed by someone aged 15-19 arguably qualifies to be classified as a child headed household given the fact such a person is not yet adequately skilled to meet the needs of the household in question. That substantial proportions of households headed by people aged 15-19 have been identified in this study, needs to be taken seriously particularly in the current era of the HIV/AIDS pandemic (see HSRC, 2002; Rosa, 2003). Such substantial proportions of "child headed" households might be symptoms of the equally substantial proportions of female headed households in the old age categories (70 years and older).

The prevalence of female headed households among the elderly is not entirely strange given the fact females generally have a higher life expectancy than males. Stats SA (2006:2) estimates male and female life expectances at 49 and 52.5 years respectively in 2006. Life expectancy for both sexes is estimated at 50.7 years. What needs to be treated with caution though, is the emerging pattern of the rise in female headed households in two age categories (i.e. 15-19 and 70 years and older). This needs to be viewed particularly in the context of the socio-economic implications as both categories constitute a dependency group. As a matter of fact a rise in the dependency ratio has severe socio-economic implications for the households concerned but most importantly for government due to the increase in the demand for services like health, child support grants and social pension.

Males have been found to dominate household headship in the 30 - 49 category. These have been identified to be households where better access to the selected indicators of QOL is concentrated. While this is not bad in any way, attention needs to be paid to this finding when it comes to improving household QOL.

- The study's findings have revealed that poor QOL among households is not related to the sex of the household head. The findings have shown that although female headed households are predominant in groups of households with poor QOL conditions, adjacent to these groups are households in groups with almost equally poor and, sometimes worse QOL conditions. Such household groups have been found to be dominated by male headed households. The focus in improving QOL needs to bear this in mind if genuine improvements in QOL are to be realised.

- Cluster analysis provided an index which enabled the study to assess the differences in household access to the selected QOL indicators. This index shows that households' access to selected indicators increased during the 1996-1999 period resulting in an increase in the number of QOL groups or clusters. From a socio-economic point of view, there has been a marked improvement in access to the selected indicators as reflected by the increase in the number of QOL groups. What needs to be pointed out however, are the conditions experienced by households in the poorer QOL groups for all the four years reviewed. There is still a big difference in living conditions for households in these groups as compared to households in groups with better access to the indicators considered. The markedly different conditions in these poor QOL groups are in the main, responsible for the emergence of the discriminant indicators sited in the overview above. Much as the these households may be proportionately fewer than those in better off QOL groups (in fact they fluctuate), neglecting them will be a contravention of the vision of the South African policy – " … to contribute towards the establishment of a society that provides a high and equitable quality of life for all South Africans …." (Department of Welfare, 1998: 35).

One other motivation for urgent attention to improving the living conditions in these groups is the fact that most households belonging to the poorest QOL groups are rural based (found in Eastern Cape, Limpopo, KwaZulu Natal and Mpumalanga), with poor access to basic services identified under discriminant function analysis. This is particularly the case with regard to piped water. Much as substantial inroads have been made in providing piped water particularly via public taps, most households in the QOL groups identified as the poorest have no access to clean water. These QOL groups are dominated by female headed households in whereby household heads are either illiterate or functionally literate and, the majority are unemployed. This puts such households in a very critical situation when it comes to meeting household needs.

- Results emanating from discriminant function analysis are interrelated with the findings from cluster analysis. The difference is that cluster analysis provides a basis to classify households into groups, which enables the study to describe the conditions in the resultant groups. Discriminant function analysis enabled the study to identify the indicators which differentiate between the identified groups. The interrelatedness of the two models (cluster and discriminant analysis) used in the study can result in tautology when providing concluding remarks and this has to be avoided. Among the crucial findings not yet referred to in conclusion include household access to toilets and refuse disposal services. These two indicators play a crucial role in households' sanitation yet the majority of households in the study do not have access to the two, particularly the former. This study attempted to look in detail at how households differ in access to selected QOL indicators. The fact that only 15 households out of a total of 3005 (i.e. 0.5%) in group two (with the poorest QOL) in 1999 have a flush toilet in the dwelling reveals the magnitude of the challenges with regard to sanitation; this group constitutes 13.8% of the sampled households in 1999. Access to sanitation – toilet and refuse disposal– reportedly differs on rural-urban dichotomy (Stats SA, 2001: 24; Stats SA, 2004: 23).

No matter how one looks at it, whether in aggregated form like Statistics South Africa or in disaggregated form like the current study, access to sanitation particularly the toilet is a challenge.

- Another indicator emanating from discriminant function analysis which needs to be noted relates to the type of transport used by households to get to work. A deeper look into this indicator reveals the indicator to discriminate between QOL groups on the basis of employment status rather than the type of transport used. The level of unemployment has been found to be high among household heads in most of the groups emanating from cluster analysis. Several households in better off QOL groups have been found to be headed by unemployed people. Much as a household could have other working members while the head is not working, unemployment is a reality and one of the top priorities for provincial and national government (Limpopo Provincial Government, 2004)

9.3 Recommendations emanating from the analysis and interpretation of the research findings

Improving quality of life in South Africa is an on going process. As such most of the recommendations being made here will just serve to emphasise what is mainly being done. For instance the need to improve people's level of education does not need any more emphasis given the study's results. A sustainable improvement in household QOL will require that households are capable of meeting their needs. Achieving this requires intervention from several angles one of which is acquiring education. Successful completion of education – tertiary as opposed to functional literacy- opens channels for households to lead a better life. Achieving this level of education requires time, which from a demographic point of view, the currently uneducated household heads may not have. This brings in another angle in the form of government intervention through the provision of basic needs like housing and water.

Sustaining government's efforts to improve QOL requires for instance, that households are capable of paying for the services like electricity and water.

This is where education, skills development and employment come in the equation. Improvement in completed level of education is likely to reduce unemployment while at the same time increasing entrepreneurial capacity; it is a long term goal. Attaining this goal will go a long way in reducing the burden arising from people relying on public services (particularly health) which has been found to cater for over eighty percent of the population's health needs.

Closing the gaps identified through discriminant analysis will require more of household efforts as opposed to government intervention. For instance household access to sanitation in form of a flush toilet will require households to access dwellings with such facilities. This will require households to move from the level of free houses built by the government. This calls for a shift in household income which is greatly determined by households' initiatives to improve their living conditions – human capital development. So improvement in personal education is a key to sustainable improvement in household QOL provided a mismatch between acquired skills and labour market needs is avoided.

Access to housing as a basic need has taken on a new dimension when one considers government's assistance in addressing the housing needs in South Africa. While providing low cost houses has improved the living conditions and QOL in that respect, this move calls for a revision in the way information on type of dwelling occupied by a household is collected. The current format of collecting data on this particular indicator-dwelling type- makes it difficult to assess certain critical dimensions in housing since many houses differing in size and amenities occupy separate stands. For example, a four roomed house built on a separate stand in an area which is not serviced by municipal authorities differs from a similar house built in a serviced area (i.e. with refuse removal services, water and toilet in dwelling). Future surveys should consider the current developments while dealing with housing and, more research is needed in this respect.

The current study has identified the existence of substantial proportions of households headed by teenagers which qualify to be child headed households. The study has also found that female headed households outnumber male headed households among child

headed households as well as among households headed by elderly people. Child headed households as a concept is relatively new with limited literature. It is a concept whose emergence is mainly related to the scourge HIV/AIDS. More studies are needed to investigate the real causes of the increase in the number of households headed by teenagers and child headed households in general in order to mitigate the socio-economic consequences thereof.

Access to telephone came out of this study's analysis as one of the factors discriminating between groups of households in 1999. Access to telephone is problematic in terms of the distance traveled to get hold of a telephone. Addressing this issue of access to telephone will require information on access to cellular phones separated from information on access to landline telephones. This was not addressed in the process of data collection for some of the data used for this study, yet the two types of telephones most likely differ in terms of operating cost and physical availability. Although discriminant function analysis identified distance traveled to get hold of a telephone as the main factor, information on distance traveled and the proportion of the population with one of the two telephone types will be imperative in addressing telecommunication problems.

This study found an improvement in the measurable quality of life conditions based on selected indicators of QOL. On the subjective aspect of life satisfaction, the study found patterns which fairly fit the explanations in the available literature regarding the relationship between material living conditions and life satisfaction. What is not clear though is the rather high and consistent proportion of indifference in subjective life satisfaction in spite of improvements observed in household living conditions. This calls for some in depth analysis on the qualitative side of quality of life. This study strongly recommends this avenue in order to achieve congruence between the monitoring of progress on the indicator side and what people actually feel.

Last but not least, it is recommended that more studies make use of this approach in measuring QOL with the inclusion of relevant indicators addressing current QOL issues.

It will be interesting and obviously crucial to know for instance how many households have access to the internet at home, how many households access the internet at work, how many households access it via internet cafes and, how many enjoy all of these options. This is important given the evolutions taking place with regard to the search for information. Some of the homework in primary schools today requires connection to the electronic world of information. This makes "access to the internet" a necessity rather an a luxury. These are relatively new developments and information pertaining to such indicators should be incorporated in the current studies.

9.4 Problems and limitations of the study

It will be inconceivable to wind up this study without acknowledging the weakness and problems encountered in the whole process. One of the problems encountered in the study relates to the fact that analysis of aspects was based on "head of household". This is likely to obscure some information regarding a household's access to issues impacting on QOL. For instance, a household where the household head is unemployed but there are other working members could misrepresent reality, with the said household accessing indicators which do not relate to the employment status of the household head. This in a way links to the issue of income declaration. Information on this particular indicator is quite unsatisfactory; the response rate was rather low in all the data used in this study. This restricted the use of this indicator to descriptive purposes yet it is a crucial discriminant factor.

Leaving out household income in the analysis is likely to have affected the QOL index as depicted by the QOL clusters. The effect is likely to be at least two fold. Firstly leaving out household income can affect the real grouping of household clusters. This could be quite problematic given the highly monetised system in South Africa when it comes to accessing the considered QOL indicators. On the contrary, the Living standards measure (LSM) no longer considers income because it does not add to its strength (SAARF, 2002; SAARF, 2004). Under such circumstances, one cannot exactly tell what the outcome could have been had household income been responded to sufficiently in the OHS data.

All in all, the first problem then leads to the second problem which is epistemic in nature; to what extent are the QOL clusters real? How could a household with an unemployed head occupy a duplex for instance? How come such a household possesses a car and, has access to medical aid cover? These are some of the questions this study had to grapple with particularly when interpreting the study's findings. The solution to this limitation has mainly been through triangulation but even then, omission of income in the analysis remains a serious limitation.

Another limitation relates to the data that was used. Assessing the changes in QOL has been affected by the fact that some indicators were not consistently included in the surveys during the reference period. While several indicators relating to basic household needs were consistently covered, some equally basic indicators like medical aid cover were not. This had an impact on the analysis of the QOL changes.

One ought to appreciate the fact that although the indicators kept on changing in the datasets subsequent to OHS 1996, the changes were for the better. By the time the OHS-1999 survey was conducted, several indicators had become consistent both in number and internally in terms of the components used. That is one reason the analysis for OHS 1999 applied seventeen QOL indicators - the largest in the whole study. It would be interesting to see the outcome of applying the same methodology to the data collected in more recent years, like the Community survey-2007 which is currently underway; it has most of the indicators in OHS 1999. This is highly recommended.

The third limitation lies in the difficulty to isolate micro-level factors from meso-level and macro-level factors influencing QOL. For instance the type of fuel a household uses influences the QOL cluster that a household belongs to but, this *type of fuel* is to some extent, determined by the environment to which the household is exposed and whether the community (rural or urban at times) has access to various energy sources. A better off household living in a rural community may use gas for cooking because there is no electricity even though the said household could afford paying for electricity. In terms of the Systems theory structure of QOL - proposed by Hagerty *et al*. (2001)- using gas

instead of the preferred electricity (which is unavailable) "reflects the individual's choice in response to the environment" (Hagerty *et al.,* 2001: 79). This response is, in most cases, enhanced by other factors (like education level, household income, etc.) which simultaneously enable the household to respond in a particular way to the environment. In terms of the current study, such a household ends up being classified in a poorer group or cluster than it actually should belong to. This kind of situation may affect the subjective assessment of life satisfaction in one way or another as well. Several factors impacting on household QOL operate at a level beyond the household itself and their impact is difficult to measure at household level. This has an impact on the authenticity of household QOL, the QOL index and of the study's findings all together.

Finally, some weaknesses relating to cluster analysis results and, the ranking of QOL clusters need to be mentioned. In at least two cases (OHS 1999 and OHS 1998) adjacent clusters - in terms of ranking which was based on group centroids of first linear discriminant functions– showed inconsistencies when it comes to assessing the QOL conditions in such groups or clusters. Results could show that a group ranked as better off, experiences material conditions that are in reality poorer than the conditions in the following QOL group. This was particularly evident in groups three and four of OHS 1998 where the centers of the two groups were fairly close (1.03 and 1.58 units respectively). Although some clusters could stand on their own, their proximity seems to suggest that the two clusters could as well have been collapsed into one cluster in order to avoid the inconsistencies in the results. However, considering the high degree of fit between the results of cluster analysis and discriminant function analysis, one would rather highlight the weakness identified as an issue that could be looked into in subsequent studies using similar methodologies.

The other weakness which might have resulted into the observed inconsistencies in clusters relates to the weighting of the QOL indicators. While indicators were weighted as explained in chapter three (see also Appendix A), the statistical processes-cluster analysis and discriminant analysis- weighted the various QOL indicators equally. This might have compromised the relative importance of some indicators which could have

impacted on QOL more than the way the process unfolded. Avoiding this would have required that individual indicators are assigned particular weights on the basis of their perceived relative importance but this requires evidence. For instance, if the level of education completed by a household head is deemed to be more influential in a household's QOL than say medical aid cover, what weights should be assigned to the two indicators and, based on what grounds? This would require empirical evidence to avoid further subjective weighting. Remember that components within individual QOL indicators were assigned weights which could arguably be seen as subjective and therefore not entirely value-free. This on its own, has got its weaknesses in analytical terms. Take the "type of dwelling" occupied by a household as an example. A figure of "5" was assigned to a household occupying a traditional dwelling or a hut. A household living in a "Dwelling/house or brick structure on a separate stand/yard" was assigned a figure of "11" (see Appendix A). Should this be taken to imply that the QOL of a household living in a traditional dwelling is almost half as good as the QOL experienced by a household in a brick house on a separate stand, in as far as this indicator is concerned? These are some of the intricacies involved in the analytical processes which might result into the observed inconsistencies in the study's results. Taking all this into account, together with a consideration of the criteria developed by Hagerty *et al.* (2001), a further application of the developed QOL index (with an application of sensitivity analysis on the weights) is strongly recommended.

9.5 Summary

This chapter has provided a summary of the findings from the study. It has also provided conclusions arising from the analysis and interpretation of research findings. A number of recommendations emanating from the analysis and interpretation of the research findings have been made. The problems encountered in the research process have been cited, and the limitations of the study have also been identified. Although the data used in the study is relatively old, the findings are still quite in line with the current developmental challenges South Africa faces today. It is hoped that follow-up studies will contribute immensely to improving QOL by responding to the recommendations made, particularly where successful attempts are made to overcome the stated limitations.