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## APPENDIX A: COMPONENTS OF THE INDICATORS OF QUALITY OF QUALITY OF LIFE

### Indicator 1: Type of dwelling (Available for entire reference period)

| Component  | Original code | Value assigned in study |
|--|---------------|-------------------------|
| Dwelling/house or brick structure on a separate stand/yard           | 1             | 11                      |
| Traditional dwelling/hut/structure made of traditional materials     | 2             | 5                       |
| Flat or apartment in a block of flats                                | 3             | 9                       |
| Town/cluster/semi- detached house (simplex, Duplex or triplex)       | 4             | 10                      |
| Unit in retirement village   | 5             | 8                       |
| Dwelling/house/flat/room in back yard                                | 6             | 7                       |
| Informal dwelling/shack in back yard                                 | 7             | 3                       |
| Informal dwelling/shack not in back yard e.g. in squatter settlement | 8             | 4                       |
| Room/flatlet   | 9             | 6                       |
| Caravan/tent   | 10            | 2                       |
| Other (specify)  | 11            | 1                       |

### Indicator 2: Status of ownership of dwelling (Available in OHS 1999, phrased differently elsewhere)

| Component  | Original code | Value assigned in study |
|--|---------------|-------------------------|
| Owned and fully paid off   | 1             | 5                       |
| Owned, but not yet fully paid off (e.g. with a mortgage)               | 2             | 4                       |
| Rented   | 3             | 2                       |
| Occupied rent-free as part of employment contract of family member     | 4             | 3                       |
| Occupied rent-free not as part of employment contract of family member | 5             | 3                       |
| Other (specify)  | 6             | 1                       |

### Indicator 3: How far is the water source from dwelling? (Available for entire reference period)

| Component                      | Original code | Value assigned in study |
|--------------------------------|---------------|-------------------------|
| Less than 100 metres           | 1             | 5                       |
| 100 M – Less than 200 M        | 2             | 4                       |
| 200 M – Less than 500 M        | 3             | 3                       |
| 500 M – Less than 1 KM         | 4             | 2                       |
| 1 KM or more                   | 5             | 1                       |
| Not applicable (water on site) | 6             | 6                       |
| Water in dwelling              | 7             | 7                       |



**Indicator 4: Household's main water source (Available for entire reference period)**

| Component                             | Original code | Value assigned in study |
|---------------------------------------|---------------|-------------------------|
| Piped (Tap) water in dwelling         | 1             | 12                      |
| Piped (Tap) water, on site or in yard | 2             | 11                      |
| Public tap                            | 3             | 10                      |
| Water-carrier/tanker                  | 4             | 8                       |
| Borehole on site                      | 5             | 9                       |
| Borehole: off site/communal           | 6             | 6                       |
| Rain-water tank on site               | 7             | 7                       |
| Flowing water/stream                  | 8             | 5                       |
| Dam/pool/stagnant water               | 9             | 2                       |
| Well                                  | 10            | 4                       |
| Spring                                | 11            | 3                       |
| Other (specify)                       | 12            | 1                       |

**Indicator 5: Household's main source of fuel for cooking (Available for entire reference period)**

| Component       | Original code | Value assigned in study |
|-----------------|---------------|-------------------------|
| Electricity     | 1             | 8                       |
| Gas             | 2             | 7                       |
| Paraffin        | 3             | 4                       |
| Wood            | 4             | 3                       |
| Coal            | 5             | 5                       |
| Animal dung     | 7             | 2                       |
| Solar energy    | 8             | 6                       |
| Other (specify) | @             | 1                       |

**Indicator 6: Household's main source of fuel for lighting (Available for entire reference period)**

| Component       | Original code | Value assigned in study |
|-----------------|---------------|-------------------------|
| Electricity     | 1             | 6                       |
| Gas             | 2             | 5                       |
| Paraffin        | 3             | 3                       |
| Candles         | 6             | 2                       |
| Solar energy    | 8             | 4                       |
| Other (specify) | @             | 1                       |

**Indicator 7: Household's main source of fuel for heating (Available for entire reference period)**

| Component       | Original code | Value assigned in study |
|-----------------|---------------|-------------------------|
| Electricity     | 1             | 8                       |
| Gas             | 2             | 7                       |
| Paraffin        | 3             | 4                       |
| Wood            | 4             | 3                       |
| Coal            | 5             | 5                       |
| Animal dung     | 7             | 2                       |
| Solar energy    | 8             | 6                       |
| Other (specify) | @             | 1                       |

**Indicator 8: Type of toilet facility available for the household (Available in OHS 1999 and OHS 1998; captured as constants in OHS 1997)**

| Component                                     | Original code | Value assigned in study |
|---|---------------|-------------------------|
| Flush toilet in dwelling                      | 11            | 13                      |
| Flush toilet on site                          | 21            | 12                      |
| Flush toilet off site                         | 31            | 11                      |
| Chemical toilet on site                       | 22            | 10                      |
| Chemical toilet off site                      | 32            | 9                       |
| Pit latrine with ventilation pipe on site     | 23            | 8                       |
| Pit latrine with ventilation pipe off site    | 33            | 7                       |
| Pit latrine without ventilation pipe on site  | 24            | 6                       |
| Pit latrine without ventilation pipe off site | 34            | 5                       |
| Bucket toilet on site                         | 25            | 4                       |
| Bucket toilet off site                        | 35            | 3                       |
| None off site                                 | 36            | 2                       |
| Other (specify)                               | 37            | 1                       |

**Indicator 9: Type How is refuse/rubbish of this household disposed of? (Available for entire reference-period)**

| Component   | Original code | Value assigned in study |
|---|---------------|-------------------------|
| Removed by local authority at least once a week   | 1             | 8                       |
| Removed by local authority less often             | 2             | 7                       |
| Removed by community members at least once a week | 3             | 6                       |
| Removed by community members less often           | 4             | 5                       |
| Communal refuse dump/communal container           | 5             | 4                       |
| Own refuse dump                                   | 6             | 3                       |
| No rubbish removal                                | 7             | 1                       |
| Other (specify)                                   | 8             | 2                       |

**Indicator 10: Does this household have a telephone, either in the dwelling or regular use of a cellular telephone? (Landline and cellular phone data captured independently in OHS 1996-OHS 1998)**

| Component | Original code | Value assigned in study |
|-----------|---------------|-------------------------|
| Yes       | 1             | 2                       |
| No        | 2             | 1                       |

**Indicator 11: How many minutes do you have to travel to the nearest telephone you can use (by usual means of transport)? (Variable captured as “how far a household is from the nearest telephone)**

| Component       | Original code | Value assigned in study |
|-----------------|---------------|-------------------------|
| 0 – 5 minutes   | 1             | 6                       |
| 6 – 15 minutes  | 2             | 5                       |
| 16 – 30 minutes | 3             | 4                       |
| 31 – 60 minutes | 4             | 3                       |
| 1 – 2 hours     | 5             | 2                       |
| Over 2 hours    | 6             | 1                       |
| In dwelling     | @             | 7                       |

**Indicator 12: Does this household have a television? (Available only in OHS 1999)**

| Component | Original code | Value assigned in study |
|-----------|---------------|-------------------------|
| Yes       | 1             | 2                       |
| No        | 2             | 1                       |

**Indicator 13: Does this household own a motor vehicle (car, bakkie, van, station wagon, minibus) in running order? (Available only in OHS 1999)**

| Component | Original code | Value assigned in study |
|-----------|---------------|-------------------------|
| Yes       | 1             | 2                       |
| No        | 2             | 1                       |

**Indicator 14: What is the highest level of education has household head completed? (Available for entire reference period)**

| Component   | Original code | Value assigned in study |
|---|---------------|-------------------------|
| No schooling  | 00            | 1                       |
| Grade 0   | 01            | 2                       |
| Sub A/Grade 1                                       | 02            | 3                       |
| Sub B/Grade 2                                       | 03            | 4                       |
| Grade 3/Standard 1                                  | 04            | 5                       |
| Grade 4/Standard 2                                  | 05            | 6                       |
| Grade 5/Standard 3                                  | 06            | 7                       |
| Grade 6/Standard 4                                  | 07            | 8                       |
| Grade 7/Standard 5                                  | 08            | 9                       |
| Grade 8/Standard 6/Form 1                           | 09            | 10                      |
| Grade 9/Standard 7/Form 2                           | 10            | 11                      |
| Grade 10/Standard 8/Form 3                          | 11            | 12                      |
| Grade 11/Standard 9/Form 4                          | 12            | 13                      |
| Grade 12/Standard 10/Form 5/Matric                  | 13            | 14                      |
| NTC I   | 14            | 15                      |
| NTC II  | 15            | 16                      |
| NTC III   | 16            | 17                      |
| Diploma/Certificate with less than Grade 12/STD. 10 | 17            | 18                      |
| Diploma/Certificate with Grade 12/STD. 10           | 18            | 19                      |
| Degree  | 19            | 20                      |
| Postgraduate Degree or Diploma                      | 20            | 21                      |
| Other (specify)                                     | 21            | 20                      |
| Don't know  | 22            | 0                       |

**Indicator 15: Is the household head covered by a medical aid or medical benefit scheme or other private insurance?**

| Component  | Original code | Value assigned in study |
|------------|---------------|-------------------------|
| Yes        | 1             | 3                       |
| No         | 2             | 2                       |
| Don't know | 3             | 1                       |

**Indicator 16: Is the household's work (Available for entire reference period)**

| Component                   | Original code | Value assigned in study |
|-----------------------------|---------------|-------------------------|
| Permanent                   | 1             | 7                       |
| Fixed period contract       | 2             | 6                       |
| Temporary                   | 3             | 5                       |
| Casual, or                  | 4             | 3                       |
| Seasonal                    | 5             | 4                       |
| Don't know                  | 6             | 2                       |
| Not applicable; not working | @             | 1                       |

**Indicator 17: If anyone gets ill or injured and decides to seek medical help, where does the person usually go first?**

| Component                 | Original code | Value assigned in study |
|---------------------------|---------------|-------------------------|
| Public hospital           | 1             | 5                       |
| Public clinic             | 2             | 4                       |
| Other public facility     | 3             | 1                       |
| Private hospital          | 4             | 7                       |
| Private clinic            | 5             | 6                       |
| Private doctor/specialist | 6             | 8                       |
| Traditional healer        | 7             | 3                       |
| Other (specify)           | 8             | 2                       |

**NB. This indicator is extracted from the questionnaire for OHS 1998; it was used in the analysis for the respective data. (It is available in OHS 1996-OHS 1998)**

## APPENDIX B: CLUSTER ANALYSIS RESULTS FOR OHS 1999

### Initial Cluster Centers

|   | Cluster |    |    |    |    |    |    |   |
|---|---------|----|----|----|----|----|----|---|
|   | 1       | 2  | 3  | 4  | 5  | 6  | 7  | 8 |
| Dwelling ownership                              | 5       | 5  | 5  | 1  | 3  | 1  | 5  | 3 |
| Recoded dwelling type                           | 5       | 5  | 1  | 3  | 1  | 1  | 5  | 1 |
| Does h/hold have a phone in house/cell - phone? | 2       | 1  | 1  | 2  | 1  | 1  | 1  | 1 |
| Household's fuel for cooking                    | 5       | 3  | 2  | 5  | 3  | 5  | 5  | 3 |
| Household's fuel for heating                    | 5       | 3  | 2  | 5  | 3  | 5  | 1  | 2 |
| Household's fuel for lighting                   | 5       | 5  | 1  | 5  | 2  | 5  | 5  | 2 |
| Highest education level completed               | 8       | 0  | 10 | 22 | 22 | 0  | 18 | 1 |
| Is person covered by medical aid?               | 2       | 2  | 1  | 1  | 2  | 2  | 2  | 2 |
| Occupation of employee/self employed            | 1       | 12 | 12 | 1  | 9  | 9  | 12 | 1 |
| H/hold's time to travel to telephone            | 7       | 5  | 1  | 7  | 4  | 2  | 3  | 6 |
| How is refuse removed?                          | 1       | 1  | 7  | 1  | 5  | 6  | 1  | 7 |
| Household access to TV?                         | 1       | 2  | 1  | 1  | 2  | 2  | 1  | 2 |
| Toilet type                                     | 11      | 1  | 6  | 11 | 1  | 11 | 11 | 1 |
| Recoded water distance                          | 5       | 4  | 1  | 5  | 4  | 5  | 5  | 4 |
| Recoded h/h water source                        | 5       | 4  | 1  | 5  | 4  | 5  | 5  | 4 |
| Did person work for pay during past 7 days?     | 1       | 4  | 4  | 1  | 1  | 1  | 4  | 2 |
| Household own a vehicle?                        | 2       | 2  | 2  | 1  | 2  | 2  | 2  | 2 |

**ITERATION HISTORY (OHS 1999)**

| <b>Change in Cluster Centers</b> |        |        |        |        |        |        |        |        |
|----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Iteration                        | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      |
| 1                                | 5.8755 | 6.1830 | 6.3137 | 5.0232 | 5.8972 | 6.6126 | 7.3168 | 6.9819 |
| 2                                | 0.6323 | 1.7162 | 0.6168 | 0.4522 | 1.3610 | 1.5994 | 1.3098 | 1.2017 |
| 3                                | 0.1469 | 0.4160 | 0.2928 | 0.1818 | 0.6666 | 0.3272 | 0.4061 | 0.5379 |
| 4                                | 0.0827 | 0.1082 | 0.1304 | 0.1227 | 0.7773 | 0.1179 | 0.2172 | 0.3981 |
| 5                                | 0.0435 | 0.0897 | 0.0748 | 0.1292 | 1.2909 | 0.0708 | 0.2736 | 0.3841 |
| 6                                | 0.1204 | 0.0673 | 0.1039 | 0.1877 | 1.9612 | 0.1275 | 0.4292 | 0.3305 |
| 7                                | 0.1068 | 0.0654 | 0.0655 | 0.4085 | 1.0497 | 0.2111 | 0.2823 | 0.2903 |
| 8                                | 0.0894 | 0.0639 | 0.1148 | 0.2732 | 0.6988 | 0.1804 | 0.1713 | 0.3906 |
| 9                                | 0.0797 | 0.0900 | 0.1510 | 0.0572 | 0.1371 | 0.1395 | 0.0965 | 0.4839 |
| 10                               | 0.0777 | 0.1412 | 0.2025 | 0.0109 | 0.0266 | 0.1015 | 0.0590 | 0.6006 |

Comment: Iterations stopped because the maximum number of iterations was performed. Iterations stopped to converge. The maximum distance by which any center has changed is .578. The current iteration is 10. The minimum distance between initial centers is 13.820.

**Final cluster centers (OHS 1999)**

|   | Cluster number |       |       |       |       |       |       |      |
|---|----------------|-------|-------|-------|-------|-------|-------|------|
|   | 1              | 2     | 3     | 4     | 5     | 6     | 7     | 8    |
| Dwelling type occupied by h/hold                      | 4.19           | 3.73  | 3.59  | 4.68  | 4.26  | 3.91  | 4.21  | 3.22 |
| Ownership of dwelling                                 | 3.55           | 4.49  | 4.45  | 3.81  | 4.17  | 3.71  | 3.87  | 3.88 |
| Nature of contract/Employment status                  | 1.13           | 3.36  | 3.38  | 1.06  | 2.93  | 2.59  | 3.28  | 1.27 |
| H/hold fuel for cooking                               | 4.72           | 2.74  | 3.19  | 4.84  | 4.34  | 4.12  | 4.54  | 3.41 |
| H/hold fuel for heating                               | 4.45           | 2.39  | 2.68  | 4.66  | 3.93  | 3.63  | 4.11  | 2.86 |
| H/hold fuel for lighting                              | 4.81           | 2.97  | 3.14  | 4.84  | 4.44  | 4.51  | 4.67  | 3.34 |
| Time taken to nearest phone                           | 6.26           | 3.97  | 4.36  | 6.59  | 5.97  | 5.68  | 6.14  | 4.54 |
| Does h/hold have a phone/cell-phone in house?         | 1.57           | 1.06  | 1.09  | 1.80  | 1.53  | 1.28  | 1.49  | 1.10 |
| Highest qualification for h/h head or acting h/h head | 11.23          | 0.97  | 9.18  | 18.59 | 19.94 | 1.99  | 9.60  | 6.89 |
| Is person covered by medical aid?                     | 1.63           | 1.98  | 1.97  | 1.29  | 1.72  | 1.94  | 1.85  | 1.94 |
| Occupation of employee/self employed                  | 5.23           | 11.13 | 11.29 | 2.83  | 10.54 | 10.11 | 11.37 | 6.75 |
| Household own a vehicle?                              | 1.57           | 1.92  | 1.92  | 1.29  | 1.59  | 1.89  | 1.75  | 1.89 |
| Toilet facility accessed by h/hold                    | 10.41          | 5.50  | 5.43  | 10.36 | 9.32  | 10.14 | 10.43 | 6.31 |
| Household access to TV?                               | 1.23           | 1.65  | 1.58  | 1.10  | 1.26  | 1.47  | 1.29  | 1.60 |
| H/hold's main water source                            | 4.66           | 3.34  | 3.38  | 4.74  | 4.42  | 4.39  | 4.62  | 3.63 |
| Distance from water source                            | 4.93           | 3.66  | 3.69  | 4.89  | 4.69  | 4.92  | 4.97  | 4.08 |
| How h/hold refuse is disposed of                      | 1.72           | 5.63  | 5.31  | 1.84  | 2.50  | 1.83  | 1.35  | 5.28 |



### Analysis of variance

| ANOVA  |             |     |             |          |            |      |
|--|-------------|-----|-------------|----------|------------|------|
|  | Cluster     |     | Error       |          | F          | Sig. |
|  | Mean Square | df  | Mean Square | df       |            |      |
| Dwelling ownership                           | 377.7680    | 7.0 | 1.4153      | 21853.00 | 266.9231   | 0.00 |
| Recoded dwelling type                        | 474.5005    | 7.0 | 2.2157      | 21853.00 | 214.1501   | 0.00 |
| Does h/hold have a phone in house/cellphone? | 186.2062    | 7.0 | 0.1694      | 21853.00 | 1099.0974  | 0.00 |
| Household's fuel for cooking                 | 1785.7999   | 7.0 | 0.8842      | 21853.00 | 2019.6824  | 0.00 |
| Household's fuel for heating                 | 2099.4529   | 7.0 | 1.5923      | 21853.00 | 1318.5020  | 0.00 |
| Household's fuel for lighting                | 1865.4820   | 7.0 | 1.9397      | 21853.00 | 961.7529   | 0.00 |
| Highest education level completed            | 86321.6179  | 7.0 | 4.2637      | 21853.00 | 20245.6562 | 0.00 |
| Is person covered by medical aid?            | 127.8156    | 7.0 | 0.1226      | 21853.00 | 1042.1594  | 0.00 |
| Occupation of employee/self employed         | 28684.7800  | 7.0 | 3.4559      | 21853.00 | 8300.1726  | 0.00 |
| H/hold's time to travel to telephone         | 2810.7143   | 7.0 | 1.6106      | 21853.00 | 1745.1422  | 0.00 |
| How is refuse removed?                       | 10370.3759  | 7.0 | 2.9188      | 21853.00 | 3552.9249  | 0.00 |
| Household access to TV?                      | 106.0997    | 7.0 | 0.2061      | 21853.00 | 514.7789   | 0.00 |
| Toilet type                                  | 15852.6484  | 7.0 | 2.5875      | 21853.00 | 6126.5515  | 0.00 |
| Recoded water distance                       | 988.5786    | 7.0 | 0.6533      | 21853.00 | 1513.2914  | 0.00 |
| Recoded h/h water source                     | 1031.4512   | 7.0 | 0.7235      | 21853.00 | 1425.7054  | 0.00 |
| Did person work for pay during past 7 days?  | 3243.2344   | 7.0 | 1.0349      | 21853.00 | 3133.9591  | 0.00 |
| Household own a vehicle?                     | 117.8471    | 7.0 | 0.1538      | 21853.00 | 766.4652   | 0.00 |

NB. The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in the different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

**Number of cases in each cluster**

| Cluster                               |              |
|---------------------------------------|--------------|
| 1                                     | 4701         |
| 2                                     | 3005         |
| 3                                     | 2995         |
| 4                                     | 1811         |
| 5                                     | 793          |
| 6                                     | 2349         |
| 7                                     | 3936         |
| 8                                     | 2271         |
| Valid number of cases in analysis (N) | 21861        |
| Excluded due to missing data          | 4273         |
| <b>TOTAL</b>                          | <b>26134</b> |

**APPENDIX C: DISCRIMINANT ANALYSIS RESULTS FOR OHS 1999**

**Summary of canonical discriminant functions (OHS 1999)**

| Function | Eigenvalue | Percentage of Variance | Cumulative % | Canonical Correlation |
|----------|------------|------------------------|--------------|-----------------------|
| 1        | 8.6340     | 66.4131                | 66.4131      | 0.9467                |
| 2        | 2.4699     | 18.9990                | 85.4121      | 0.8437                |
| 3        | 1.7425     | 13.4037                | 98.8157      | 0.7971                |
| 4        | 0.1308     | 1.0059                 | 99.8216      | 0.3401                |
| 5        | 0.0120     | 0.0923                 | 99.9139      | 0.1089                |
| 6        | 0.0077     | 0.0592                 | 99.9732      | 0.0874                |
| 7        | 0.0035     | 0.0268                 | 100.0000     | 0.0590                |

NB. The first canonical discriminant functions were used in the analysis

**Wilks' lambda and chi square results (OHS 1999)**

| Test of Function(s) | Wilks' Lambda | Chi-square      | df  | Sig. |
|---------------------|---------------|-----------------|-----|------|
| 1 through 7         | 0.0094        | 101903.312<br>6 | 119 | 0.00 |
| 2 through 7         | 0.0908        | 52412.2076      | 96  | 0.00 |
| 3 through 7         | 0.3151        | 25230.8738      | 75  | 0.00 |
| 4 through 7         | 0.8642        | 3189.3177       | 56  | 0.00 |
| 5 through 7         | 0.9772        | 504.3023        | 39  | 0.00 |
| 6 through 7         | 0.9889        | 243.7435        | 24  | 0.00 |
| 7                   | 0.9965        | 76.1087         | 110 | 0.00 |

**Standardized canonical discriminant function coefficients (OHS 1999)**

|  | Function |         |         |         |         |         |         |
|--|----------|---------|---------|---------|---------|---------|---------|
|  | 1        | 2       | 3       | 4       | 5       | 6       | 7       |
| Dwelling ownership                           | -0.0123  | 0.0706  | 0.0289  | 0.0129  | 0.1751  | 0.1726  | -0.0693 |
| Recoded dwelling type                        | 0.0284   | 0.0076  | 0.0157  | -0.2274 | 0.0326  | -0.0580 | -0.3220 |
| Does h/hold have a phone in house/cellphone? | -0.0143  | 0.0606  | -0.0669 | -0.2336 | 0.3211  | -0.5171 | 0.5446  |
| Household's fuel for cooking                 | 0.0247   | -0.0985 | 0.0447  | 0.2529  | -0.6484 | 0.0362  | 0.4759  |
| Household's fuel for heating                 | 0.0558   | -0.0518 | -0.0232 | -0.1079 | -0.1470 | -0.4860 | -0.2312 |
| Household's fuel for lighting                | 0.0641   | -0.0667 | 0.0037  | -0.0355 | 0.2030  | 0.2089  | -0.5054 |
| Highest education level completed            | 0.7888   | 0.5686  | 0.2663  | 0.1105  | 0.0425  | 0.0479  | -0.0337 |
| Is person covered by medical aid?            | 0.0124   | -0.0316 | 0.1060  | 0.4337  | -0.1027 | -0.2420 | 0.0620  |
| Occupation of employee/self employed         | -0.2927  | 0.1634  | 0.8539  | 0.4040  | 0.3283  | -0.3225 | -0.1738 |
| Household own a vehicle?                     | 0.0429   | -0.0387 | 0.0451  | 0.1599  | -0.3135 | 0.2373  | 0.1340  |
| H/hold's time to travel to telephone         | 0.0762   | -0.1341 | 0.0792  | 0.1915  | -0.3205 | 0.4213  | -0.2098 |
| How is refuse removed?                       | -0.2972  | 0.4517  | -0.2386 | 0.1054  | 0.2213  | -0.0277 | 0.3850  |
| Household access to TV?                      | 0.0024   | -0.0016 | -0.0161 | 0.0011  | 0.1572  | 0.3795  | -0.0644 |
| Toilet type                                  | 0.3780   | -0.6211 | 0.2141  | 0.0081  | 0.2886  | 0.1208  | -0.0325 |
| Recoded water distance                       | 0.0626   | -0.0920 | 0.0062  | 0.1074  | 0.3865  | 0.3533  | 0.5823  |
| Recoded h/h water source                     | -0.0412  | 0.0620  | 0.0021  | -0.0416 | 0.0581  | -0.3495 | 0.1994  |
| Did person work for pay during past 7 days?  | -0.0471  | 0.0651  | 0.0974  | -0.7930 | -0.4616 | 0.4219  | 0.3490  |

**Structure matrix – correlations between functions and predictors (OHS 1999)**

|   | Function |          |         |          |          |          |          |
|---|----------|----------|---------|----------|----------|----------|----------|
|   | 1        | 2        | 3       | 4        | 5        | 6        | 7        |
| Type of toilet facility                       | 0.3439   | -0.5906* | 0.2110  | -0.0841  | 0.3550   | -0.0308  | 0.0885   |
| Highest education level completed             | 0.8098*  | 0.5633   | 0.1501  | 0.0260   | 0.0009   | -0.0017  | 0.0197   |
| Occupation of employee/self employed          | -0.3733  | 0.0992   | 0.9063* | 0.0200   | 0.0778   | -0.0554  | -0.0043  |
| Household own a vehicle?                      | -0.1566  | 0.0230   | 0.0756  | 0.3963*  | -0.2778  | 0.3661   | 0.0024   |
| Does h/hold have a phone in house/cell-phone? | 0.1865   | -0.1154  | 0.0238  | -0.3515  | 0.1042   | -0.4078* | 0.3416   |
| Is person covered by medical aid?             | -0.1766  | 0.0200   | 0.1286  | 0.5140*  | -0.1451  | -0.0630  | 0.0241   |
| Household's distance from water source        | 0.1690   | -0.2965  | 0.0984  | 0.1293   | 0.2605   | 0.1817   | 0.5324*  |
| Household's fuel for lighting                 | 0.1488   | -0.2095  | 0.0691  | -0.0202  | -0.0275  | -0.0336  | -0.2373* |
| Household access to TV?                       | -0.1287  | 0.0749   | -0.0283 | 0.1867   | 0.1268   | 0.4820*  | -0.0434  |
| Did person work for pay during past 7 days?   | -0.2029  | 0.1223   | 0.5670  | -0.6192* | -0.2436  | 0.2088   | 0.1950   |
| Dwelling ownership                            | -0.0629  | 0.1263   | 0.0487  | -0.2396* | 0.1405   | 0.0571   | -0.1184  |
| Household's fuel for cooking                  | 0.2377   | -0.2416  | 0.0761  | 0.0910   | -0.4972* | -0.2438  | 0.2663   |
| Household's fuel for heating                  | 0.1948   | -0.1891  | 0.0347  | -0.093   | -0.3099  | -0.5169* | -0.0324  |
| How is refuse removed?                        | -0.2549  | 0.4388*  | -0.2384 | 0.1134   | 0.2670   | -0.0232  | 0.1808   |
| Household's water source                      | 0.1836   | -0.2482  | 0.0832  | -0.0478  | 0.1345   | -0.2521  | 0.3513*  |
| Type of dwelling                              | 0.0680   | -0.0506  | 0.0444  | -0.3739* | 0.1316   | -0.1799  | -0.2154  |
| H/hold's time to travel to telephone          | 0.2180   | -0.2325* | 0.0906  | -0.0703  | -0.1414  | -0.0161  | 0.1779   |

NB. Pooled within correlations between discriminating variables and standardized canonical discriminant functions. Variables ordered by absolute size of correlation within function.  
\*Largest absolute correlation between each variable and any discriminant function.

### Functions at group centroids (OHS 1999)

| Cluster Number of Case | Function |         |         |         |         |         |         |
|------------------------|----------|---------|---------|---------|---------|---------|---------|
|                        | 1        | 2       | 3       | 4       | 5       | 6       | 7       |
| 1                      | 2.3501   | -0.9733 | -0.9594 | 0.0848  | -0.0517 | -0.0902 | -0.0516 |
| 2                      | -4.7840  | 0.3724  | -0.5428 | -0.5042 | 0.0921  | -0.0758 | 0.0009  |
| 3                      | -1.5797  | 2.4874  | 0.6594  | 0.0610  | -0.1630 | 0.0555  | -0.0461 |
| 4                      | 5.4938   | 0.9524  | -1.2775 | -0.6557 | 0.0274  | 0.1270  | 0.0535  |
| 5                      | 4.2957   | 2.7734  | 2.5435  | 0.3796  | 0.3982  | -0.0191 | -0.1061 |
| 6                      | -2.1363  | -2.7998 | 0.2985  | 0.0881  | 0.0430  | 0.1674  | -0.0494 |
| 7                      | 0.7290   | -0.8356 | 2.0028  | 0.0016  | -0.0368 | -0.0431 | 0.0736  |
| 8                      | -1.3860  | 0.8577  | -1.8150 | 0.7078  | 0.0584  | 0.0207  | 0.0844  |

NB. Un standardised canonical discriminant functions evaluated at group means

### Prior probabilities for groups (OHS 1999)

| Cluster Number of Case | Prior probability | Cases Used in Analysis |          |
|------------------------|-------------------|------------------------|----------|
|                        |                   | Un weighted            | Weighted |
| 1                      | 0.125             | 4701                   | 4701     |
| 2                      | 0.125             | 3005                   | 3005     |
| 3                      | 0.125             | 2995                   | 2995     |
| 4                      | 0.125             | 1811                   | 1811     |
| 5                      | 0.125             | 793                    | 793      |
| 6                      | 0.125             | 2349                   | 2349     |
| 7                      | 0.125             | 3936                   | 3936     |
| 8                      | 0.125             | 2271                   | 2271     |
| Total                  | 1.000             | 21861                  | 21861    |

### Classification function coefficients - Fsher's linear discriminant functions (OHS 1999)

|   | Cluster Number of Case |         | 3       | 4       | 5       | 6       | 7       | 8       |
|---|------------------------|---------|---------|---------|---------|---------|---------|---------|
|   | 1                      | 2       |         |         |         |         |         |         |
| Dwelling ownership                              | 3.8853                 | 4.0627  | 4.1748  | 3.9885  | 4.2558  | 3.9049  | 3.9831  | 4.0429  |
| Recoded dwelling type                           | 1.2291                 | 1.1857  | 1.1834  | 1.3791  | 1.2962  | 1.1387  | 1.2144  | 1.0317  |
| Does h/hold have a phone in house/cell - phone? | 8.2568                 | 9.1334  | 8.3905  | 8.8304  | 8.1929  | 7.6912  | 8.0173  | 8.5684  |
| Household's fuel for cooking                    | 3.0698                 | 2.5307  | 2.7598  | 2.7436  | 2.6395  | 3.1496  | 3.1863  | 2.9038  |
| Household's fuel for heating                    | 1.2108                 | 0.8508  | 0.8232  | 1.2278  | 0.9839  | 0.9532  | 1.0433  | 0.8524  |
| Household's fuel for lighting                   | 0.4031                 | 0.0305  | 0.0651  | 0.4796  | 0.4111  | 0.3390  | 0.2958  | 0.1086  |
| Highest education level completed               | 3.2766                 | 0.9466  | 2.9369  | 4.9321  | 5.5309  | 1.2301  | 3.0722  | 2.2792  |
| Is person covered by medical aid?               | 16.9481                | 15.9280 | 16.8899 | 15.7173 | 17.9131 | 17.1340 | 17.6572 | 17.0781 |
| Occupation of employee/self employed            | 1.2600                 | 2.5829  | 2.8760  | 0.5937  | 3.0283  | 2.3561  | 2.8526  | 1.7391  |
| Household own a vehicle?                        | 16.0768                | 14.8823 | 15.6608 | 15.9967 | 16.1082 | 15.9927 | 16.2519 | 15.6684 |
| H/hold's time to travel to telephone            | 2.1874                 | 1.5139  | 1.7589  | 2.0758  | 2.0905  | 2.2513  | 2.2391  | 1.7968  |
| How is refuse removed?                          | 0.9254                 | 2.4578  | 2.2808  | 0.9168  | 1.1513  | 1.0560  | 0.8544  | 2.2604  |
| Household access to TV?                         | 12.5378                | 12.5331 | 12.5295 | 12.7512 | 12.6345 | 12.7237 | 12.4505 | 12.6545 |
| Toilet type                                     | 3.6900                 | 1.5722  | 1.6365  | 3.6676  | 3.2554  | 3.5446  | 3.6533  | 2.0196  |
| Recoded water distance                          | 4.9977                 | 4.3300  | 4.3233  | 5.1296  | 4.9950  | 5.0277  | 4.9861  | 4.7754  |
| Recoded h/h water source                        | 2.6408                 | 3.1304  | 3.0225  | 2.6053  | 2.8029  | 2.6289  | 2.7517  | 2.9166  |
| Did person work for pay during past 7 days?     | -0.7294                | 0.1446  | -0.0397 | -0.1146 | -0.6674 | -0.4562 | -0.2413 | -0.9643 |
| (Constant)                                      | -129.58                | -105.65 | -122.23 | -151.01 | -175.64 | -122.53 | -142.69 | -108.64 |

### Classification results (OHS 1999)

| Original Count | Predicted Group Membership |             |             |             |             |             |             |             |             |
|----------------|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                | Cluster Number of Case     | 1           | 2           | 3           | 4           | 5           | 6           | 7           | 8           |
| 1              | <b>4383</b>                | 0           | 7           | 6           | 1           | 7           | 125         | 172         | <b>4701</b> |
| 2              | 0                          | <b>2878</b> | 76          | 0           | 0           | 43          | 0           | 8           | <b>3005</b> |
| 3              | 0                          | 11          | <b>2714</b> | 0           | 0           | 1           | 46          | 223         | <b>2995</b> |
| 4              | 11                         | 0           | 1           | <b>1757</b> | 42          | 0           | 0           | 0           | <b>1811</b> |
| 5              | 0                          | 0           | 6           | 1           | <b>785</b>  | 0           | 1           | 0           | <b>793</b>  |
| 6              | 2                          | 22          | 5           | 0           | 0           | <b>2278</b> | 37          | 5           | <b>2349</b> |
| 7              | 82                         | 0           | 25          | 0           | 0           | 10          | <b>3808</b> | 11          | <b>3936</b> |
| 8              | 38                         | 69          | 9           | 0           | 0           | 80          | 10          | <b>2065</b> | <b>2271</b> |
|                | <b>Percentage s</b>        |             |             |             |             |             |             |             |             |
| 1              | <b>93.2</b>                | 0           | 0.15        | 0.13        | 0.02        | 0.15        | 2.66        | 3.66        | <b>100</b>  |
| 2              | 0                          | <b>95.8</b> | 2.53        | 0           | 0           | 1.43        | 0           | 0.27        | <b>100</b>  |
| 3              | 0                          | 0.37        | <b>90.6</b> | 0           | 0           | 0.03        | 1.54        | 7.45        | <b>100</b>  |
| 4              | 0.61                       | 0           | 0.06        | <b>97.0</b> | 2.32        | 0           | 0           | 0           | <b>100</b>  |
| 5              | 0                          | 0           | 0.76        | 0.13        | <b>99.0</b> | 0           | 0.13        | 0           | <b>100</b>  |
| 6              | 0.09                       | 0.94        | 0.21        | 0           | 0           | <b>97.0</b> | 1.58        | 0.21        | <b>100</b>  |
| 7              | 2.08                       | 0           | 0.64        | 0           | 0           | 0.25        | <b>96.8</b> | 0.28        | <b>100</b>  |
| 8              | 1.67                       | 3.04        | 0.40        | 0           | 0           | 3.52        | 0.44        | <b>90.9</b> | <b>100</b>  |

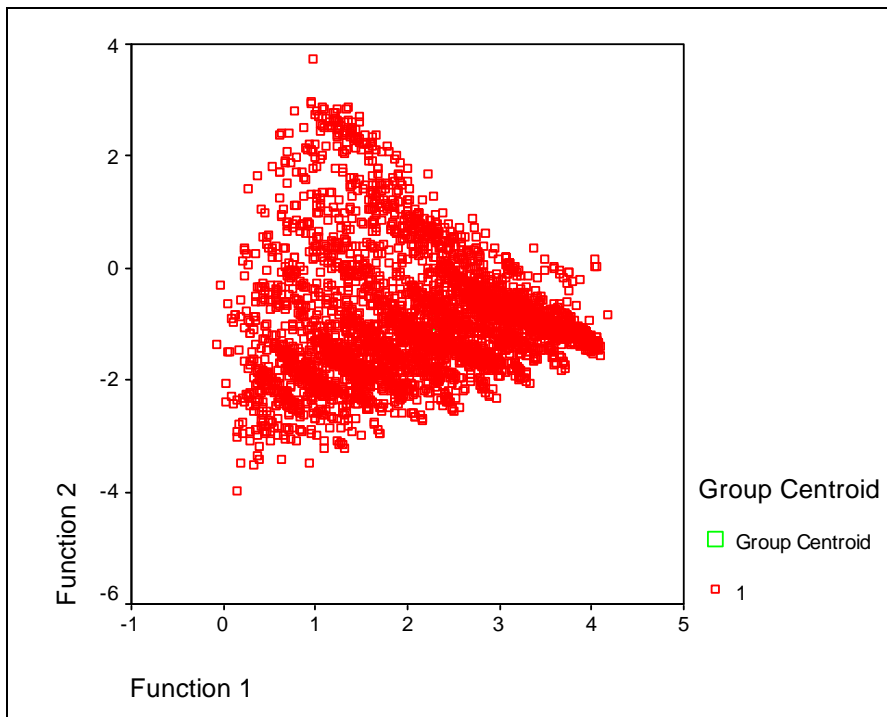
### Territorial Map (OHS 1999)

| (Assuming all functions but the first two are zero) |      |               |               |          |         |        |
|---|------|---------------|---------------|----------|---------|--------|
| Canonical Discriminant                              |      |               |               |          |         |        |
| Function 2  |      |               |               |          |         |        |
| -12.0   | -8.0 | -4.0          | .0            | 4.0      | 8.0     | 12.0   |
| +-----+-----+-----+-----+-----+                     |      |               |               |          |         |        |
| 12.0 +  | 23   |               | 35            |          |         | +      |
| I   | 23   |               | 35            |          | I       |        |
| I   | 23   |               | 35            |          | I       |        |
| I   | 233  |               | 35            |          | I       |        |
| I   | 223  |               | 35            |          | I       |        |
| 8.0 +   | +23  | +             | + 35          | +        | +       | 5+     |
| I   | 23   |               | 35            |          | 554I    |        |
| I   | 23   |               | 35            |          | 55544 I |        |
| I   | 23   |               | 35            |          | 55444 I |        |
| I   | 23   |               | 35            |          | 55544 I |        |
| I   | 23   |               | 35            |          | 55444 I |        |
| 4.0 +   | +    | 23 +          | +             | 35 +     | 55544+  | +      |
| I   |      | 23            |               | 35       | 55444   | I      |
| I   |      | 233 *         |               | 35       | 5*544   | I      |
| I   |      | 223           |               | 33555444 |         | I      |
| I   |      | 23            |               | 33111114 |         | I      |
| I   |      | * 2333*333371 |               | 14 *     |         | I      |
| .0 +  | +    | +             | 2888888771    | 14       | +       | +      |
| I   |      |               | 22888887 *1 * | 14       |         | I      |
| I   |      |               | 22666666771   | 14       |         | I      |
| I   |      |               | 2266          | 671      | 14      | I      |
| I   |      |               | 2266 *        | 61       | 14      | I      |
| I   |      |               | 2266          | 61       | 14      | I      |
| -4.0 +  | +    | 2266 +        | +             | + 61     | +       | 14 +   |
| I   |      | 2266          |               | 61       |         | 14 I   |
| I   |      | 2266          |               | 61       |         | 14 I   |
| I   |      | 2266          |               | 61       |         | 14 I   |
| I   |      | 2266          |               | 61       |         | 14 I   |
| I   |      | 2266          |               | 61       |         | 14 I   |
| -8.0 +  | 2266 | +             | +             | +        | 61 +    | + 14 + |
| I   | 266  |               |               | 61       |         | 14 I   |
| I   | 6    |               |               | 61       |         | 14 I   |
| I   |      |               |               | 61       |         | 14 I   |
| I   |      |               |               | 61       |         | 14 I   |
| -12.0 +   |      |               |               | 61       |         | 14 +   |
| +-----+-----+-----+-----+-----+                     |      |               |               |          |         |        |
| -12.0   | -8.0 | -4.0          | .0            | 4.0      | 8.0     | 12.0   |
| Canonical Discriminant Function 1                   |      |               |               |          |         |        |

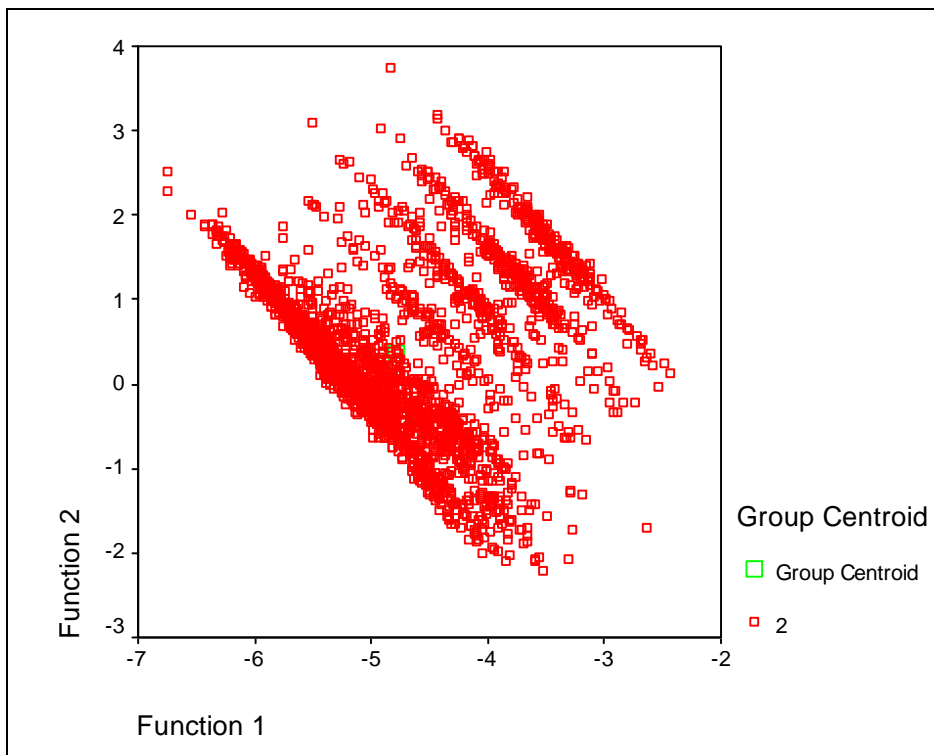
NB. \* Indicates a group centroid



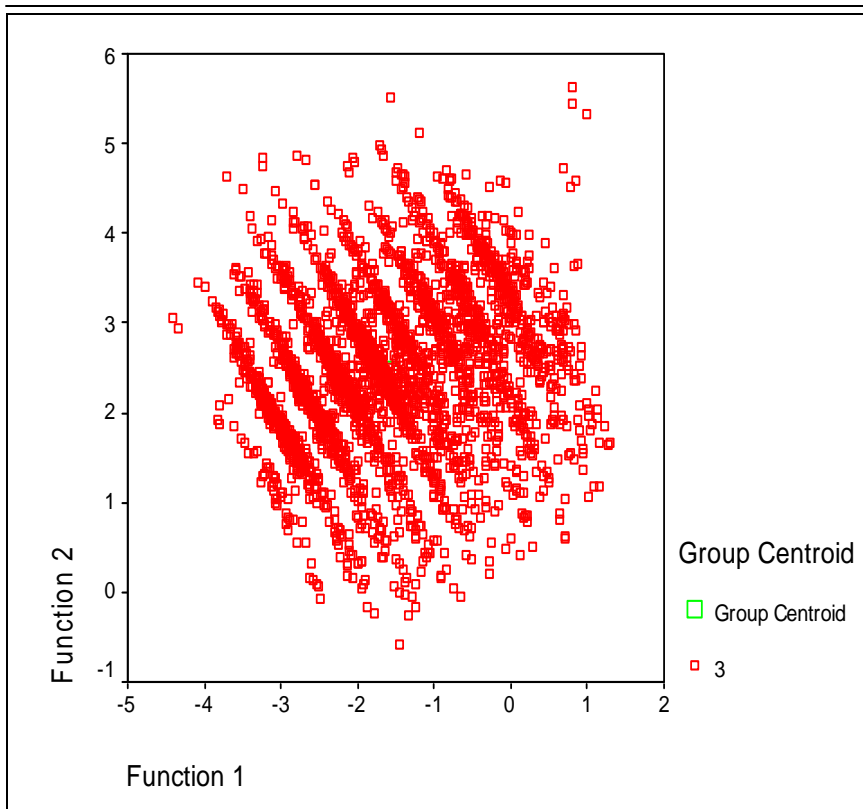
### Canonical discriminant function plot - QOL 1 (OHS 1999)



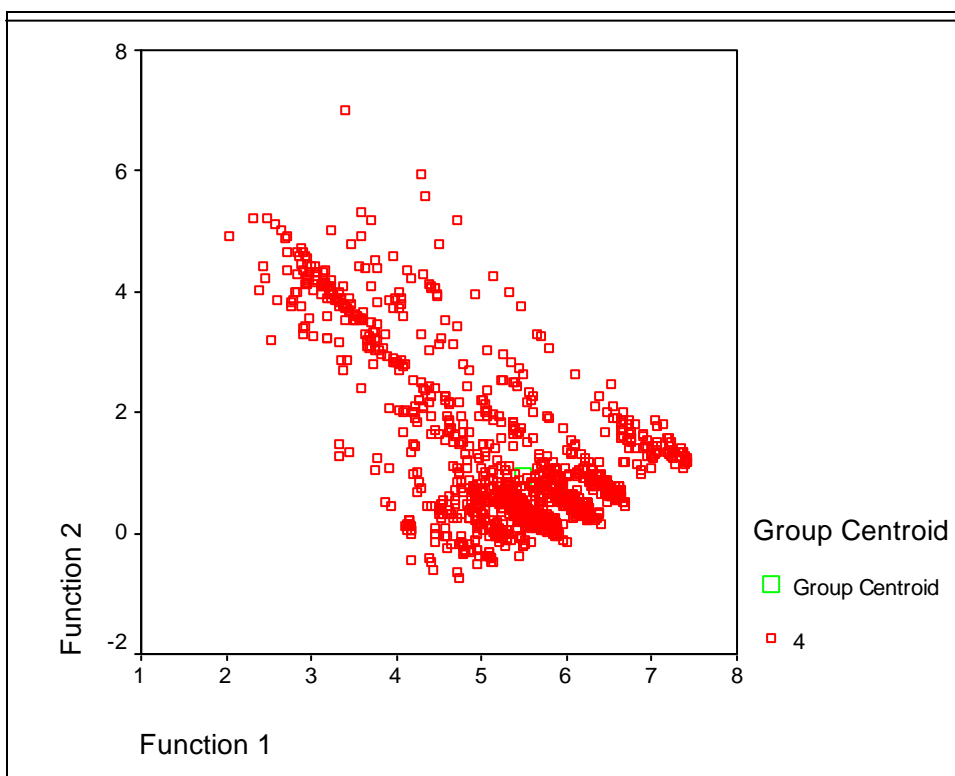
### Canonical discriminant function plot - QOL 2 (OHS 1999)



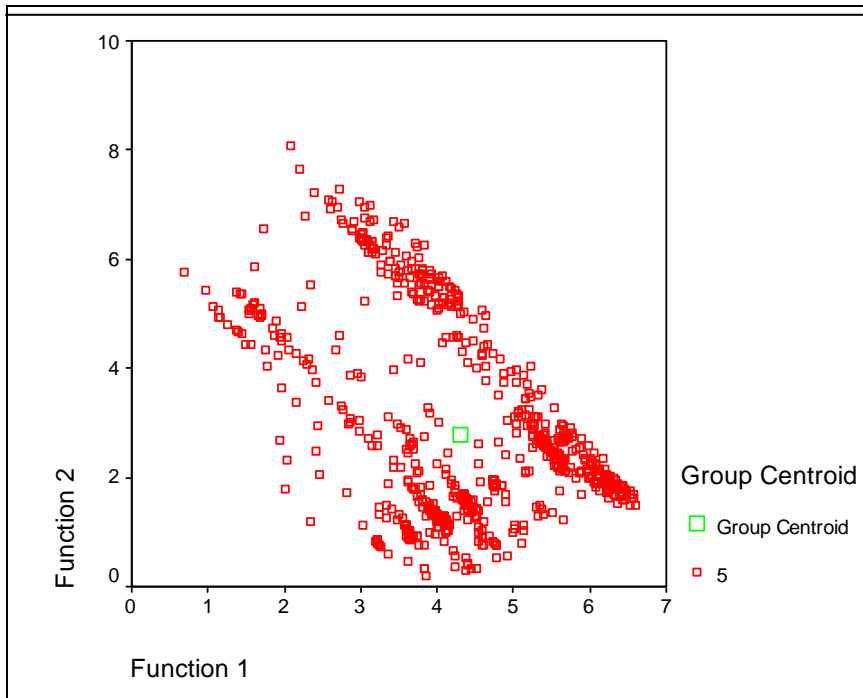
**Canonical discriminant function plot - QOL 3 (OHS 1999)**



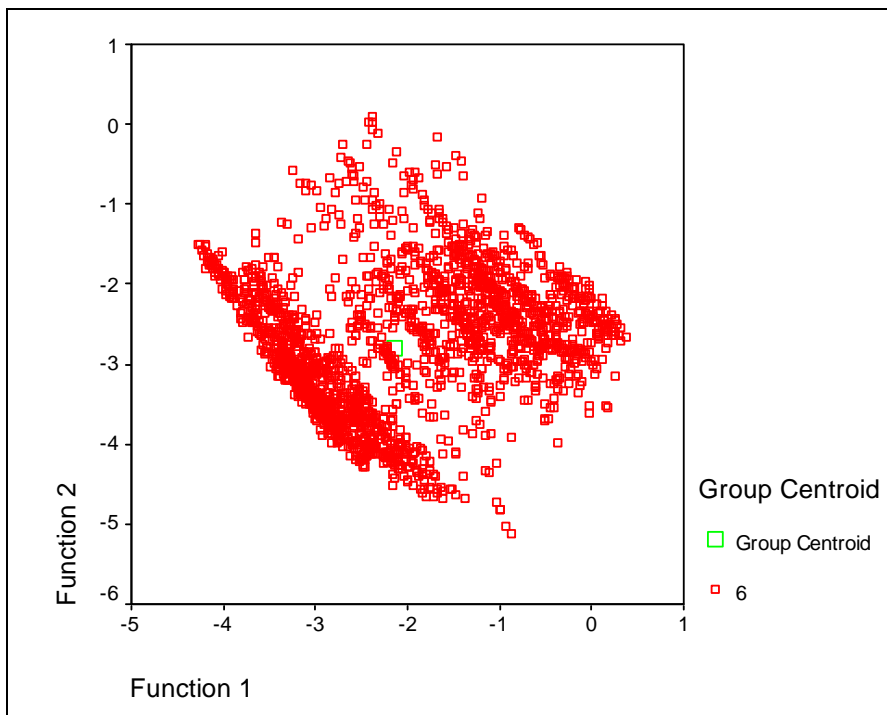
**Canonical discriminant function plot - QOL 4 (OHS 1999)**



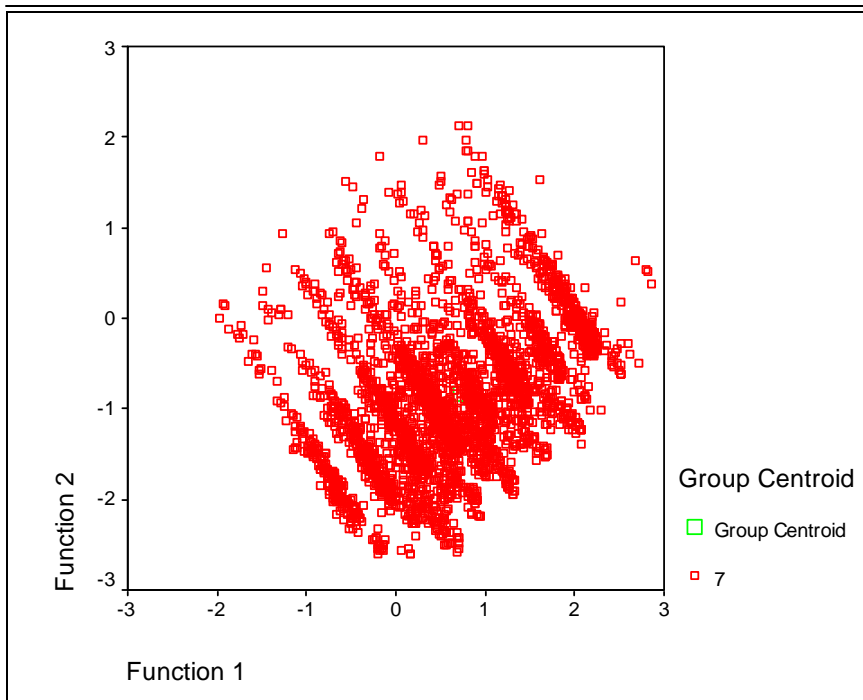
### Canonical discriminant function plot - QOL 5 (OHS 1999)



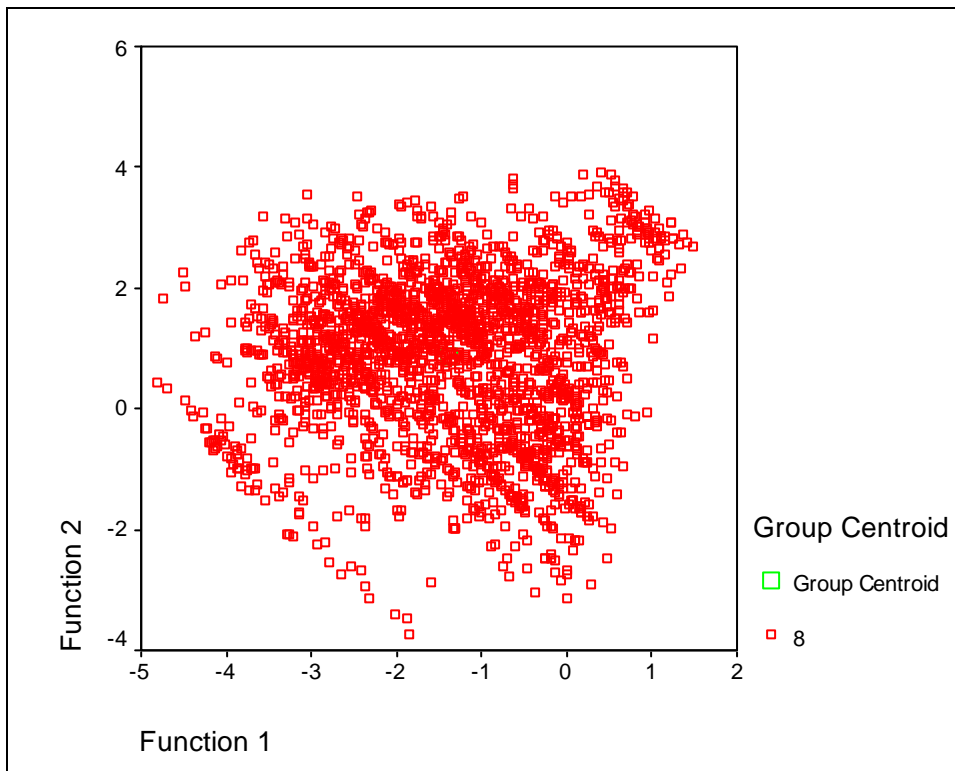
### canonical discriminant function plot - QOL 6 (OHS 1999)



### Canonical discriminant function plot - QOL 7 (OHS 1999)



### Canonical discriminant function plot - QOL 8 (OHS 1999)



## APPENDIX D: CLUSTER ANALYSIS RESULTS FOR OHS 1998

### Initial cluster centres

|   | Cluster number |    |    |   |    |    |   |
|---|----------------|----|----|---|----|----|---|
|   | 1              | 2  | 3  | 4 | 5  | 6  | 7 |
| Does h/h have a cellular phone?             | 1              | 1  | 2  | 1 | 1  | 1  | 1 |
| Did person work for pay during past 7 days? | 1              | 1  | 5  | 5 | 1  | 1  | 5 |
| H/hold's main fuel for cooking              | 8              | 2  | 8  | 3 | 3  | 8  | 8 |
| H/hold's main fuel for lighting             | 6              | 2  | 6  | 2 | 2  | 6  | 6 |
| H/hold distance from medical facility       | 5              | 1  | 1  | 1 | 4  | 5  | 3 |
| Highest education level completed           | 14             | 1  | 14 | 7 | 13 | 1  | 1 |
| Is there a phone in the dwelling?           | 1              | 1  | 2  | 1 | 1  | 2  | 1 |
| Does person have access to medical aid?     | 1              | 1  | 2  | 1 | 1  | 2  | 1 |
| Usual facility for h/hold medical help      | 3              | 3  | 5  | 3 | 3  | 5  | 3 |
| How is h/hold refuse disposed of?           | 5              | 1  | 5  | 2 | 1  | 5  | 5 |
| Type of toilet facility used by h/hold      | 2              | 1  | 5  | 1 | 1  | 5  | 5 |
| Dwelling's main water source                | 4              | 1  | 5  | 1 | 1  | 5  | 5 |
| Dwelling's distance from water source       | 6              | 1  | 7  | 1 | 2  | 7  | 7 |
| Main transport used to work                 | 1              | 13 | 11 | 1 | 13 | 13 | 1 |

### Iteration history - change in cluster centers (OHS 1998)

| Iteration | 1        | 2        | 3        | 4        | 5        | 6        | 7        |
|-----------|----------|----------|----------|----------|----------|----------|----------|
| 1         | 5.495797 | 4.163744 | 4.023505 | 4.907639 | 4.818541 | 4.194124 | 4.423231 |
| 2         | 0.932112 | 0.361558 | 0.495372 | 0.585587 | 0.41573  | 0.403728 | 0.689356 |
| 3         | 0.887953 | 0.168309 | 0.496257 | 0.900858 | 0.217264 | 0.242858 | 0.916883 |
| 4         | 0.487319 | 0.109176 | 0.320532 | 0.600568 | 0.111634 | 0.133874 | 0.54449  |
| 5         | 0.137247 | 0.098188 | 0.044005 | 0.295131 | 0.124068 | 0.056478 | 0.177615 |
| 6         | 0.077987 | 0.084084 | 0.018957 | 0.179209 | 0.091558 | 0.02963  | 0.056011 |
| 7         | 0.034015 | 0.068291 | 0.012098 | 0.081926 | 0.065287 | 0.027729 | 0.045309 |
| 8         | 0.021663 | 0.019378 | 0.007139 | 0.059635 | 0.019063 | 0.0268   | 0.027021 |
| 9         | 0.011972 | 0.024821 | 0.006191 | 0.04604  | 0.011588 | 0.038    | 0.031245 |
| 10        | 0.004454 | 0.006249 | 0.001498 | 0.016167 | 0.006278 | 0.016491 | 0.013625 |

Comment: Iterations stopped because the maximum number of iterations was performed. Iterations stopped to converge. The maximum distance by which any center has changed is 0.01518. The current iteration is 10. The minimum distance between initial centers is 12.247.

### Final cluster centers (OHS 1998)

|   | Cluster number |          |          |          |          |          |          |
|---|----------------|----------|----------|----------|----------|----------|----------|
|   | 1              | 2        | 3        | 4        | 5        | 6        | 7        |
| Does h/h have a cellular phone?             | 1.10409        | 1.009224 | 1.278075 | 1.014042 | 1.019237 | 1.036109 | 1.014314 |
| Did person work for pay during past 7 days? | 4.846691       | 1.151363 | 2.941382 | 4.702076 | 1.287163 | 1.400116 | 4.757319 |
| H/hold's main fuel for cooking              | 7.716994       | 3.403774 | 7.886261 | 3.877289 | 3.981112 | 7.133372 | 5.322056 |
| H/hold's main fuel for lighting             | 5.923512       | 3.133753 | 5.965652 | 3.300977 | 3.428471 | 5.860804 | 4.45283  |
| H/hold distance from medical facility       | 3.720652       | 3.039832 | 3.773139 | 3.222833 | 3.2312   | 3.892254 | 3.22056  |
| Highest education level completed           | 11.24044       | 1.472956 | 12.55594 | 9.311966 | 9.462399 | 3.631334 | 2.271308 |
| Is there a phone in the dwelling?           | 1.321583       | 1.012159 | 1.651172 | 1.021978 | 1.033228 | 1.281305 | 1.064411 |
| Does person have access to medical aid?     | 1.252744       | 1.008805 | 1.415878 | 1.049451 | 1.018888 | 1.036109 | 1.055303 |
| Usual facility for h/hold medical help      | 3.778849       | 3.103145 | 4.085561 | 3.297924 | 3.132564 | 3.359348 | 3.461939 |
| How is h/hold refuse disposed of?           | 4.271367       | 1.971908 | 4.678527 | 2.559829 | 2.320042 | 4.150844 | 2.856213 |
| Type of toilet facility used by h/hold      | 4.618557       | 2.342138 | 4.802756 | 2.738706 | 2.681007 | 4.138614 | 3.227716 |
| Dwelling's main water source                | 4.519122       | 2.821384 | 4.800905 | 3.407814 | 3.043722 | 4.34537  | 3.83149  |
| Dwelling's distance from water source       | 6.398736       | 3.754298 | 6.765323 | 4.567766 | 4.01469  | 6.167734 | 5.446975 |
| Main transport used to work                 | 4.476887       | 12.88973 | 11.54216 | 3.593407 | 12.80133 | 12.70938 | 2.664932 |

### Analysis of variance(ANOVA) (OHS 1998)

|   | Cluster     |    | Error       |       | F        | Sig. |
|---|-------------|----|-------------|-------|----------|------|
|   | Mean Square | df | Mean Square | df    |          |      |
| Does h/h have a cellular phone?             | 37.13242    | 6  | 0.079805    | 17998 | 465.2912 | 0    |
| Did person work for pay during past 7 days? | 6767.214    | 6  | 1.593701    | 17998 | 4246.226 | 0    |
| H/hold's main fuel for cooking              | 10697.15    | 6  | 1.399699    | 17998 | 7642.467 | 0    |
| H/hold's main fuel for lighting             | 4699.946    | 6  | 1.443455    | 17998 | 3256.039 | 0    |
| H/hold distance from medical facility       | 288.3963    | 6  | 1.457077    | 17998 | 197.9279 | 0    |
| Highest education level completed           | 54000.55    | 6  | 4.304242    | 17998 | 12545.89 | 0    |
| Is there a phone in the dwelling?           | 199.864     | 6  | 0.133008    | 17998 | 1502.651 | 0    |
| Does person have access to medical aid?     | 86.09215    | 6  | 0.113338    | 17998 | 759.6046 | 0    |
| Usual facility for h/hold medical help      | 450.5824    | 6  | 0.695169    | 17998 | 648.1627 | 0    |
| How is h/hold refuse disposed of?           | 3482.673    | 6  | 1.426557    | 17998 | 2441.313 | 0    |
| Type of toilet facility used by h/hold      | 2998.758    | 6  | 1.008373    | 17998 | 2973.857 | 0    |
| Dwelling's main water source                | 1775.037    | 6  | 0.924131    | 17998 | 1920.765 | 0    |
| Dwelling's distance from water source       | 4330.347    | 6  | 1.535568    | 17998 | 2820.03  | 0    |
| Main transport used to work                 | 50174.98    | 6  | 3.058439    | 17998 | 16405.42 | 0    |

NB. The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in the different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

### Number of cases in each cluster (OHS 1998)

| Cluster | Number of cases |
|---------|-----------------|
| 1       | 3007            |
| 2       | 2385            |
| 3       | 4862            |
| 4       | 1638            |
| 5       | 2859            |
| 6       | 1717            |
| 7       | 1537            |
| Valid N | 18005           |

## APPENDIX E: DISCRIMINANT ANALYSIS RESULTS FOR OHS 1998

### Summary of canonical discriminant functions (OHS 1998)

| Function | Eigenvalue | % of Variance | Cumulative % | Canonical Correlation |
|----------|------------|---------------|--------------|-----------------------|
| 1        | 6.153385   | 45.18755      | 45.18755     | 0.927473              |
| 2        | 5.484341   | 40.27441      | 85.46196     | 0.919664              |
| 3        | 1.837121   | 13.49095      | 98.95291     | 0.804693              |
| 4        | 0.114439   | 0.840386      | 99.7933      | 0.320449              |
| 5        | 0.022761   | 0.167149      | 99.96045     | 0.149181              |
| 6        | 0.005386   | 0.039551      | 100          | 0.073191              |

NB. First 6 canonical discriminant functions were used in the analysis.

### Wilks' lambda chi square results (OHS 1998)

| Test of Function(s) | Wilks' Lambda | Chi-square | df | Sig.     |
|---------------------|---------------|------------|----|----------|
| 1 through 6         | 0.006631      | 90255.3    | 84 | 0        |
| 2 through 6         | 0.047434      | 54851.55   | 65 | 0        |
| 3 through 6         | 0.30758       | 21214.67   | 48 | 0        |
| 4 through 6         | 0.872643      | 2451.233   | 33 | 0        |
| 5 through 6         | 0.972507      | 501.6165   | 20 | 0        |
| 6                   | 0.994643      | 96.64968   | 9  | 7.48E-17 |

### Standardized canonical discriminant function coefficients (OHS 1998)

|   | Function number |          |          |          |          |          |
|---|-----------------|----------|----------|----------|----------|----------|
|   | 1               | 2        | 3        | 4        | 5        | 6        |
| Did person work for pay during past 7 days? | 0.123173        | 0.009051 | 0.011334 | 0.380523 | -0.06124 | 0.542736 |
| Does h/h have a cellular phone?             | -0.13605        | 0.08986  | 0.086785 | 0.290353 | 0.020577 | -0.23777 |
| H/hold's main fuel for cooking              | 0.339046        | 0.239373 | 0.484761 | -0.21179 | -0.29927 | -0.16465 |
| H/hold's main fuel for lighting             | 0.114256        | 0.109542 | 0.215995 | -0.24238 | -0.03026 | -0.03198 |
| Highest education level completed           | 0.483699        | 0.536369 | -0.71991 | -0.13821 | 0.05099  | -0.07155 |
| Is there a phone in the dwelling?           | 0.00644         | 0.094111 | 0.066601 | 0.445762 | 0.180605 | 0.086941 |
| H/hold distance from medical facility       | 0.033158        | -0.05348 | -0.04355 | -0.1276  | 0.137522 | 0.258956 |
| Usual facility for h/hold medical help      | -0.00878        | 0.039393 | 0.055924 | 0.198175 | -0.05908 | -0.27102 |
| Does person have access to medical aid?     | -0.07991        | 0.022585 | 0.076523 | 0.312227 | -0.45184 | 0.075408 |
| How is h/hold refuse disposed of?           | 0.167191        | 0.074586 | 0.172402 | -0.04164 | 0.389536 | 0.601381 |
| Type of toilet facility used by h/hold      | 0.080539        | 0.063245 | 0.088629 | -0.11667 | -0.54443 | 0.219979 |
| Dwelling's distance from water source       | 0.076699        | 0.117933 | 0.197872 | 0.116502 | 0.456536 | -0.55459 |
| Dwelling's main water source                | -0.00351        | -0.04558 | -0.00813 | 0.105419 | 0.363081 | -0.00816 |
| Main transport used to work                 | -0.64618        | 0.740174 | 0.047387 | 0.128389 | -0.0182  | 0.217233 |



### Structure matrix – correlations between functions and predictors (OHS 1998)

|   | Function number |          |          |          |          |          |
|---|-----------------|----------|----------|----------|----------|----------|
|   | 1               | 2        | 3        | 4        | 5        | 6        |
| Main transport used to work                 | -0.6864         | 0.682987 | 0.068466 | -0.16033 | 0.047042 | 0.118462 |
| Highest education level completed           | 0.539554        | 0.554161 | -0.62008 | 0.062512 | -0.02103 | -0.07196 |
| H/hold's main fuel for cooking              | 0.432205        | 0.370835 | 0.589395 | -0.1955  | -0.25135 | -0.14082 |
| H/hold's main fuel for lighting             | 0.267156        | 0.230184 | 0.435144 | -0.26051 | -0.0358  | -0.09262 |
| Type of toilet facility used by h/hold      | 0.277708        | 0.245169 | 0.318501 | 0.008794 | -0.14968 | 0.236677 |
| Is there a phone in the dwelling?           | 0.138275        | 0.229916 | 0.171816 | 0.581099 | 0.144737 | 0.065155 |
| Does person have access to medical aid?     | 0.124079        | 0.143308 | 0.057925 | 0.560875 | -0.40267 | 0.032613 |
| Did person work for pay during past 7 days? | 0.433492        | -0.20398 | -0.00308 | 0.513003 | -0.12259 | 0.325348 |
| Does h/h have a cellular phone?             | 0.070876        | 0.128794 | 0.046474 | 0.503698 | -0.04753 | -0.18062 |
| Usual facility for h/hold medical help      | 0.130656        | 0.11237  | 0.094003 | 0.464073 | -0.15772 | -0.25006 |
| Dwelling's distance from water source       | 0.27923         | 0.194696 | 0.362681 | 0.180584 | 0.538947 | -0.28972 |
| Dwelling's main water source                | 0.231358        | 0.171678 | 0.276621 | 0.16413  | 0.496013 | -0.10268 |
| How is h/hold refuse disposed of?           | 0.238949        | 0.230553 | 0.300046 | 0.02471  | 0.40517  | 0.579406 |
| H/hold distance from medical facility       | 0.057888        | 0.067548 | 0.090748 | -0.16307 | 0.263449 | 0.330271 |

NB. Pooled within correlations between discriminating variables and standardized canonical discriminant functions. Variables ordered by absolute size of correlation within function.

\*Largest absolute correlation between each variable and any discriminant function

### Functions at group centroids (OHS 1998)

| Cluster Number of Case | Function number of case |          |          |          |          |          |
|------------------------|-------------------------|----------|----------|----------|----------|----------|
|                        | 1                       | 2        | 3        | 4        | 5        | 6        |
| 1                      | 3.49213                 | -0.67447 | 0.16007  | -0.3277  | -0.19458 | 0.040543 |
| 2                      | -4.3309                 | -1.37889 | 0.372702 | 0.280978 | -0.17525 | 0.074736 |
| 3                      | 1.02984                 | 2.902404 | 0.255441 | 0.320337 | 0.028387 | -0.01188 |
| 4                      | 1.583169                | -3.0311  | -2.07958 | 0.183866 | 0.27353  | 0.102981 |
| 5                      | -2.13949                | 0.853418 | -1.98711 | -0.35011 | -0.01095 | -0.08016 |
| 6                      | -1.80967                | 0.568637 | 2.535151 | -0.55684 | 0.234457 | 0.038028 |
| 7                      | 0.944725                | -4.7144  | 1.380912 | 0.26914  | 0.029767 | -0.16083 |

Unstandardized canonical discriminant functions are evaluated at group means

### Classification function coefficients - fisher's linear discriminant functions (OHS 1998)

|   | Cluster Number of Case |          |          |          |          |          |          |
|---|------------------------|----------|----------|----------|----------|----------|----------|
|   | 1                      | 2        | 3        | 4        | 5        | 6        | 7        |
| Did person work for pay during past 7 days? | 3.440137               | 2.870941 | 3.388372 | 3.375209 | 2.814782 | 2.862117 | 3.256028 |
| Does h/h have a +-cellular phone?           | 6.598102               | 10.80524 | 9.677453 | 6.587149 | 9.228654 | 10.07442 | 7.71421  |
| H/hold's main fuel for cooking              | 3.415805               | 0.99989  | 3.307837 | 1.255564 | 1.205617 | 3.05396  | 2.233042 |
| H/hold's main fuel for lighting             | 2.114671               | 1.220512 | 2.08882  | 1.198963 | 1.335505 | 2.186298 | 1.602858 |
| Highest education level completed           | 1.899383               | -0.22167 | 2.181075 | 1.597481 | 1.736645 | 0.186426 | -0.18992 |
| Is there a phone in the dwelling?           | 2.027603               | 2.508198 | 3.814538 | 1.848731 | 1.965078 | 2.620286 | 1.955649 |
| H/hold distance from medical facility       | 1.507591               | 1.261428 | 1.223708 | 1.653008 | 1.360073 | 1.293756 | 1.491808 |
| Usual facility for h/hold medical help      | 3.12374                | 3.319273 | 3.480326 | 2.950399 | 3.132096 | 3.31355  | 3.232994 |
| Does person have access to medical aid?     | 1.548219               | 3.952482 | 2.684349 | 1.194333 | 2.205162 | 2.641076 | 2.366691 |
| How is h/hold refuse disposed of?           | 0.632083               | -0.47398 | 0.548276 | 0.060696 | -0.37086 | 0.45704  | 0.150406 |
| Type of toilet facility used by h/hold      | 0.797847               | 0.0711   | 0.626399 | -0.00091 | 0.129488 | 0.454004 | 0.211754 |
| Dwelling's distance from water source       | 1.879103               | 1.410857 | 2.248875 | 1.371653 | 1.452654 | 2.186158 | 1.760786 |
| Dwelling's main water source                | 0.459749               | 0.59367  | 0.454048 | 0.82977  | 0.493937 | 0.537012 | 0.802182 |
| Main transport used to work                 | 2.928538               | 5.575434 | 5.393525 | 2.616225 | 5.579299 | 5.456391 | 2.209483 |
| (Constant)                                  | -71.8577               | -61.867  | -103.158 | -43.4955 | -69.7301 | -82.4071 | -43.0192 |

### Classification results for OHS 1998

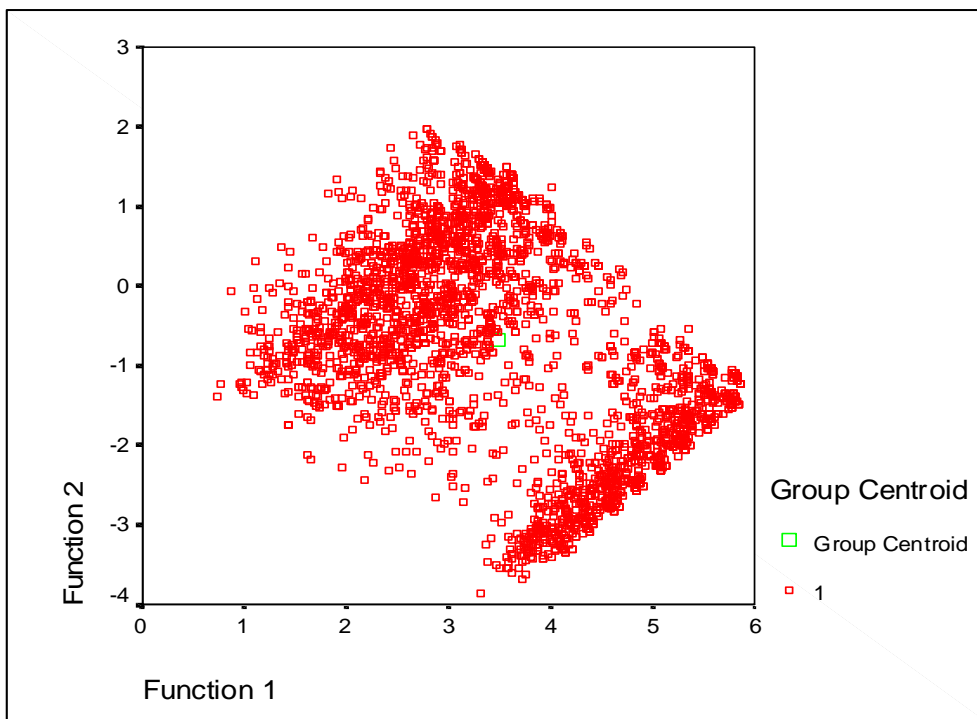
| Cluster Number of Case                                       | Predicted Group Membership |      |      |      |      |      |      | Total |
|--|----------------------------|------|------|------|------|------|------|-------|
|  | 1                          | 2    | 3    | 4    | 5    | 6    | 7    |       |
| Original count   | 2807                       | 0    | 77   | 119  | 1    | 1    | 2    | 3007  |
| 1  | 0                          | 2355 | 0    | 0    | 0    | 30   | 0    | 2385  |
| 2  | 14                         | 0    | 4759 | 0    | 87   | 2    | 0    | 4862  |
| 3  | 51                         | 0    | 0    | 1566 | 8    | 0    | 13   | 1638  |
| 4  | 0                          | 5    | 121  | 1    | 2690 | 42   | 0    | 2859  |
| 5  | 4                          | 74   | 28   | 0    | 38   | 1573 | 0    | 1717  |
| 6  | 77                         | 5    | 0    | 43   | 0    | 8    | 1404 | 1537  |
| (%) 1  | 93.4                       | 0    | 2.6  | 4.0  | 0.03 | 0.03 | 0.1  | 100   |
| 2  | 0                          | 98.7 | 0    | 0    | 0    | 1.3  | 0    | 100   |
| 3  | 0.3                        | 0    | 97.9 | 0    | 1.8  | 0.04 | 0    | 100   |
| 4  | 3.1                        | 0    | 0    | 95.6 | 0.5  | 0    | 0.8  | 100   |
| 5  | 0                          | 0.2  | 4.2  | 0.04 | 94.1 | 1.5  | 0    | 100   |
| 6  | 0.2                        | 4.3  | 1.6  | 0    | 2.2  | 91.6 | 0    | 100   |
| 7  | 5.0                        | 0.3  | 0    | 2.8  | 0    | 0.5  | 91.4 | 100   |
| <b>95.3% of original grouped cases correctly classified.</b> |                            |      |      |      |      |      |      |       |

### Territorial Map (OHS 1998)

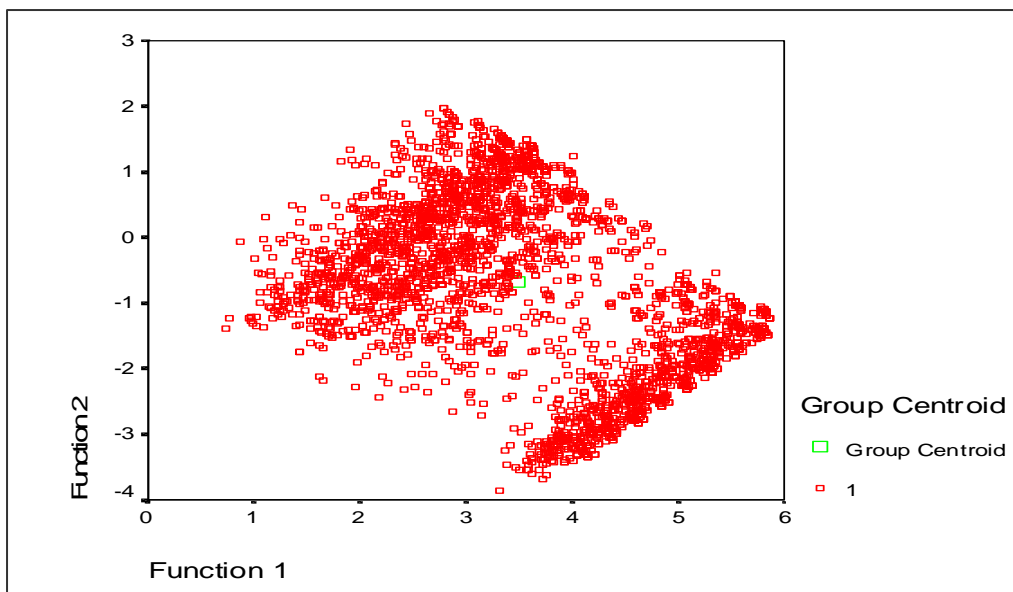
| (Assuming all functions but the first two are zero) |        |           |              |              |      |     |
|---|--------|-----------|--------------|--------------|------|-----|
| Canonical Discriminant Function 2                   |        |           |              |              |      |     |
| -6.0  | -4.0   | -2.0      | .0           | 2.0          | 4.0  | 6.0 |
| +-----+-----+-----+-----+-----+-----+               |        |           |              |              |      |     |
| 6.0 +   | 53     |           |              |              | +    |     |
| I   | 53     |           |              |              | I    |     |
| I   | 533    |           |              |              | I    |     |
| I   | 553    |           |              |              | I    |     |
| I   | 53     |           |              |              | I    |     |
| I   | 53     |           |              |              | I    |     |
| 4.0 +   | +      | 53 +      | +            | +            | +    | +   |
| I   | 53     |           |              | 3I           |      |     |
| I55   | 53     |           |              | 3331I        |      |     |
| I225  | 53     | *         |              | 33111 I      |      |     |
| I 255   | 53     |           |              | 33311 I      |      |     |
| I 2255  | 53     |           |              | 33111 I      |      |     |
| 2.0 +   | 2255 + | +         | 53 +         | +            | 3311 | +   |
| I   | 225    | 53        |              | 33311        | I    |     |
| I   | 255    | 53        |              | 33111        | I    |     |
| I   | 2255 * | 533       |              | 33311        | I    |     |
| I   | 225 *  | 553       |              | 33111        | I    |     |
| I   | 255    | 53        | 33311        |              | I    |     |
| .0 +  | +      | 2255 +    | 53           | 33111 +      | +    | +   |
| I   | 225    | 5311      |              | I            |      |     |
| I   | 255    | 51        | *            | I            |      |     |
| I   | 2255   | 55411     |              | I            |      |     |
| I   | *      | 225       | 544          | 4411         | I    |     |
| I   | 25554  | 4411      |              | I            |      |     |
| -2.0 +  | +      | +         | 244 +        | 4411+        | +    | +   |
| I   | 2444   | 4411      |              | I            |      |     |
| I   |        | 277774444 | 4411         |              | I    |     |
| I   |        | 27        | 777744444*   | 4411         | I    |     |
| I   |        | 27        | 777774444    | 4411         | I    |     |
| I   |        | 27        | 777744444411 |              | I    |     |
| -4.0 +  | +      | 27        | +            | + 7777444411 | +    |     |
| I   |        | 27        |              | 777774111    | I    |     |
| I   | 27     | *         |              | 777711       | I    |     |
| I   | 27     |           |              | 77111        | I    |     |
| I   | 27     |           |              | 77711        |      |     |
| I   | 27     |           |              | 7I           |      |     |
| -6.0 +  | 27     |           |              |              | +    |     |
| +-----+-----+-----+-----+-----+-----+               |        |           |              |              |      |     |
| -6.0  | -4.0   | -2.0      | .0           | 2.0          | 4.0  | 6.0 |
| Canonical Discriminant Function 1                   |        |           |              |              |      |     |

NB. \* Indicates a group centroid

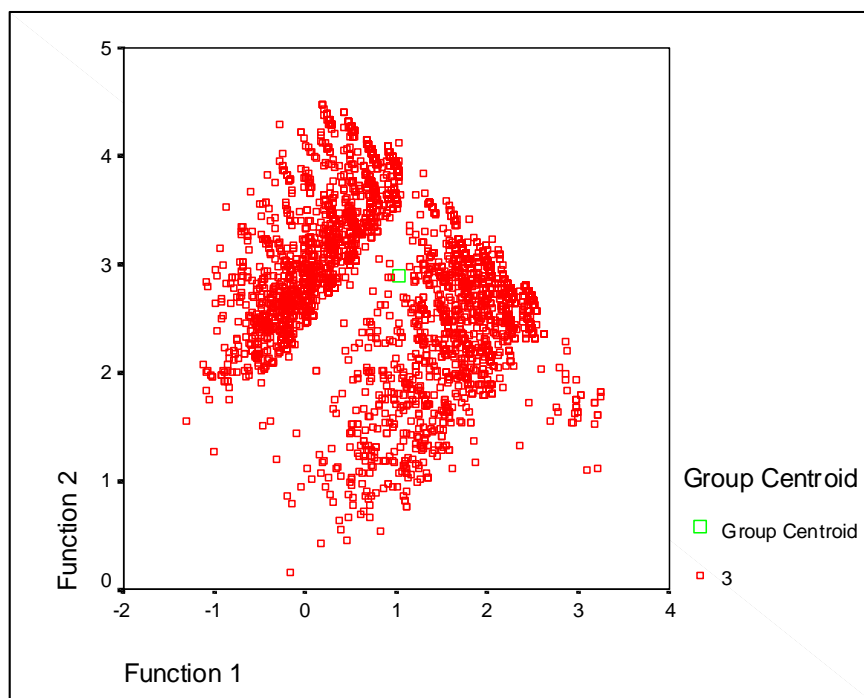
### Canonical discriminant function plot - QOL 1 (OHS 1998)



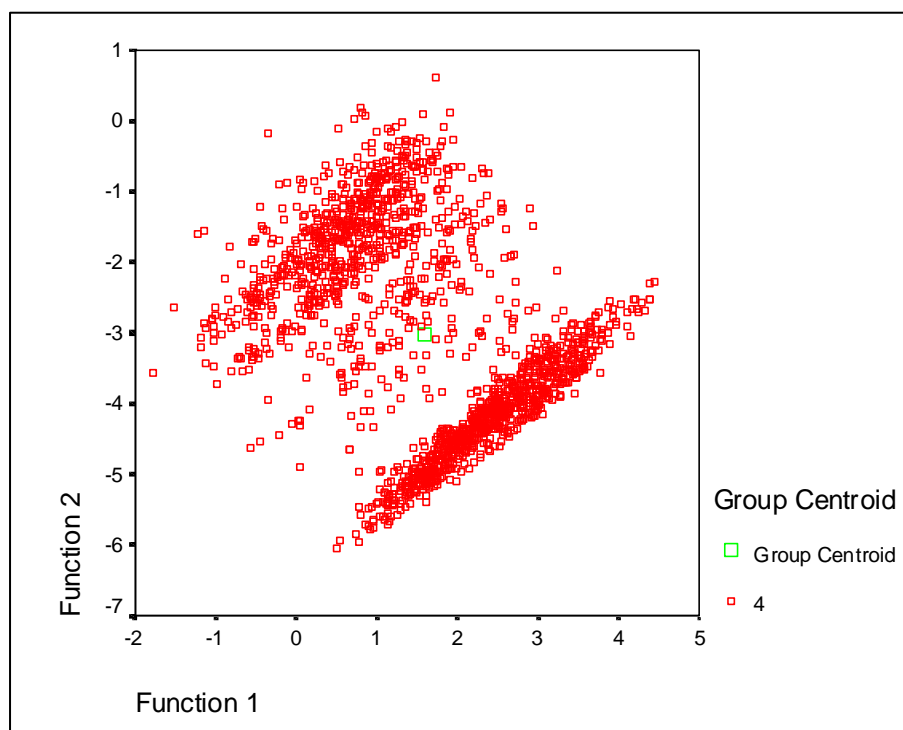
### Canonical discriminant function plot - QOL 2 (OHS 1998)



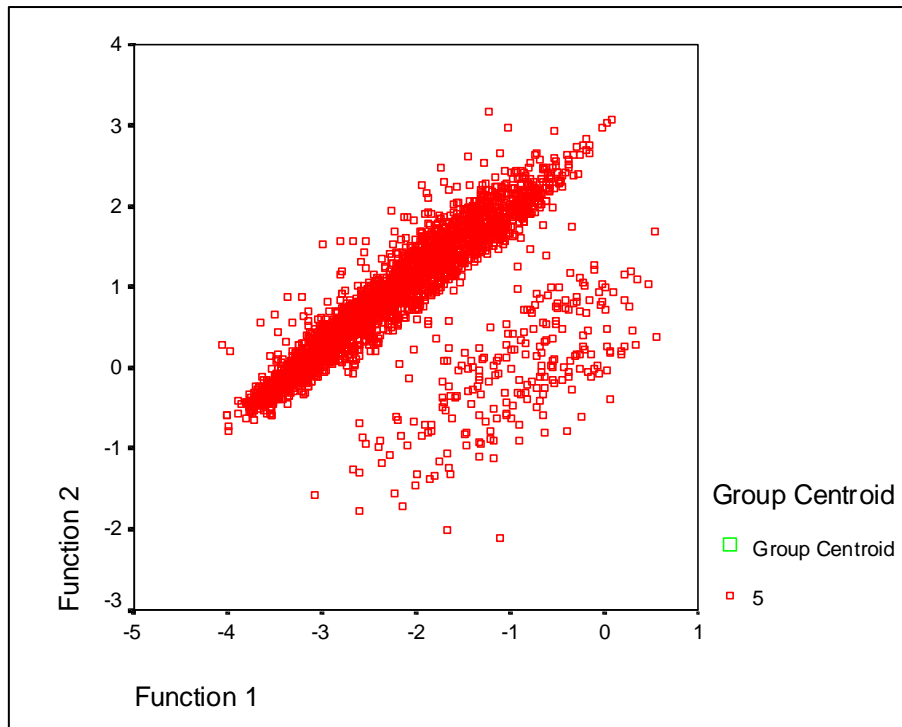
Canonical discriminant function plot - QOL 3 (OHS 1998)



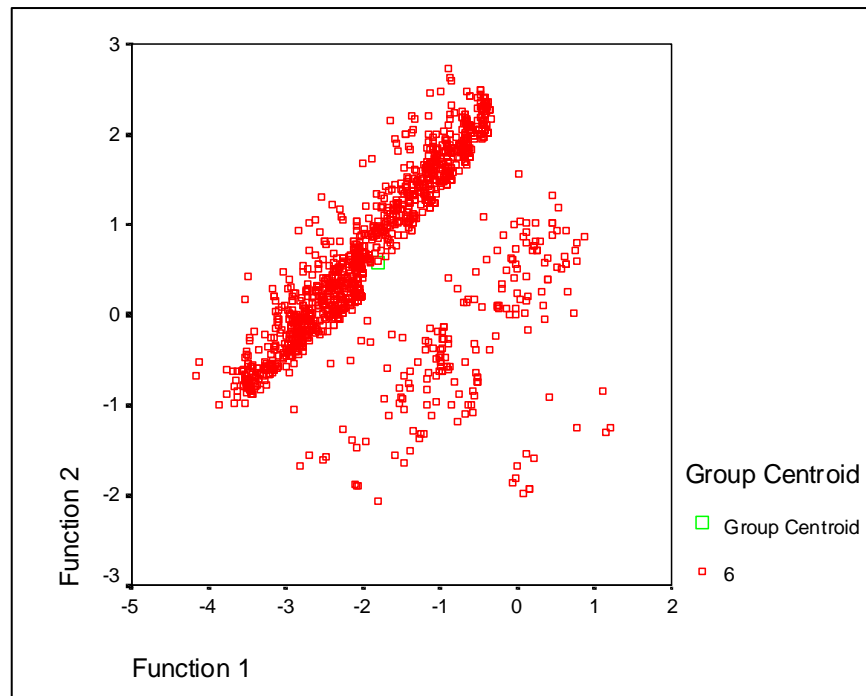
Canonical discriminant function plot - QOL 4 (OHS 1998)



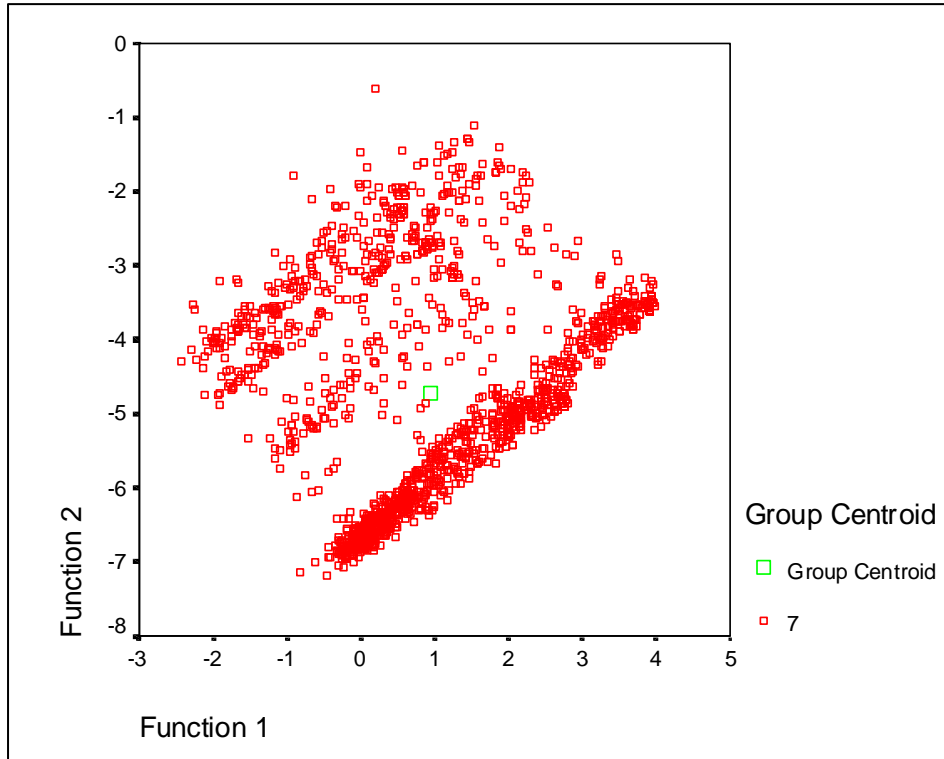
### Canonical discriminant function plot - QOL 5 (OHS 1998)



### Canonical discriminant function plot - QOL 6 (OHS 1998)



### Canonical discriminant function plot - QOL 7 (OHS 1998)





## APPENDIX F: CLUSTER ANALYSIS RESULTS FOR OHS 1997

### Initial cluster centers (OHS 1997)

| Cluster number                                 | 1  | 2  | 3  | 4  | 5  | 6  | 7  |
|--|----|----|----|----|----|----|----|
| <b>Variables in analysis</b>                   |    |    |    |    |    |    |    |
| Did person work for pay during past 7 days?    | 1  | 1  | 5  | 1  | 5  | 5  | 5  |
| Type of dwelling occupied by h/hold            | 11 | 11 | 1  | 1  | 11 | 4  | 11 |
| Does anyone in h/hold have a cellular phone?   | 1  | 1  | 1  | 1  | 1  | 1  | 2  |
| H/hold's main fuel for cooking                 | 5  | 3  | 8  | 8  | 8  | 4  | 8  |
| H/hold's main fuel for heating                 | 5  | 3  | 8  | 8  | 8  | 4  | 8  |
| Hhold's main fuel for lighting                 | 2  | 2  | 6  | 6  | 6  | 2  | 6  |
| Highest class/standard completed               | 1  | 13 | 1  | 14 | 1  | 10 | 14 |
| Does h/hold have to pay for water?             | 5  | 1  | 1  | 5  | 5  | 5  | 5  |
| Is there a land line phone in h/hold?          | 1  | 1  | 1  | 2  | 1  | 1  | 2  |
| H/hold distance from health facility           | 5  | 5  | 2  | 1  | 4  | 4  | 5  |
| H/hold transport to health facility            | 6  | 2  | 1  | 7  | 5  | 5  | 7  |
| Facility the h/hold usually seeks medical help | 4  | 8  | 4  | 8  | 8  | 5  | 1  |
| How h/hold refuse is disposed of               | 8  | 1  | 3  | 2  | 1  | 8  | 8  |
| H/hold's main water source                     | 12 | 10 | 11 | 12 | 1  | 1  | 12 |

### ITERATION HISTORY (OHS 1997)

| Iteration | Change in Cluster Centers |          |          |          |          |          |          |
|-----------|---------------------------|----------|----------|----------|----------|----------|----------|
|           | 1                         | 2        | 3        | 4        | 5        | 6        | 7        |
| 1         | 5.646375                  | 6.172811 | 7.491693 | 7.375107 | 8.532221 | 7.766147 | 6.30712  |
| 2         | 1.473118                  | 0.829005 | 1.579565 | 1.974878 | 2.15213  | 1.208434 | 0.335069 |
| 3         | 0.228822                  | 0.757111 | 0.613308 | 0.598341 | 0.712927 | 0.895488 | 0.051323 |
| 4         | 0.096191                  | 0.318376 | 0.204439 | 0.128305 | 0.246733 | 0.551279 | 0.046622 |
| 5         | 0.047663                  | 0.088464 | 0.170766 | 0.223865 | 0.147658 | 0.421402 | 0.017544 |
| 6         | 0.016795                  | 0.027044 | 0.104178 | 0.201992 | 0.102272 | 0.277509 | 0.001468 |
| 7         | 0.022449                  | 0.017646 | 0.040174 | 0.111459 | 0.067757 | 0.119881 | 0.005838 |
| 8         | 0.017436                  | 0.007087 | 0.015032 | 0.031693 | 0.040752 | 0.047662 | 0.002559 |
| 9         | 0.010425                  | 0.005159 | 0.005719 | 0.016677 | 0.016414 | 0.017161 | 0.001531 |
| 10        | 0.010965                  | 0.001659 | 0        | 0.003629 | 0.002507 | 0        | 0.00337  |

Comment: Iterations stopped because the maximum number of iterations was performed. Iterations stopped to converge. The maximum distance by which any center has changed is 0.006496. The current iteration is 10. The minimum distance between initial centers is 14.765

### Final cluster centers (OHS 1997)

| Variables in analysis                          | Cluster number |          |          |          |          |          |          |
|--|----------------|----------|----------|----------|----------|----------|----------|
|  | 1              | 2        | 3        | 4        | 5        | 6        | 7        |
| Did person work for pay during past 7 days?    | 2.280524       | 2.518689 | 2.309783 | 3.478957 | 1.53373  | 2.307336 | 3.573198 |
| Type of dwelling occupied by h/hold            | 10.86256       | 10.94855 | 4.447283 | 4.054437 | 7.41627  | 4.694981 | 10.70879 |
| Does anyone in h/hold have a cellular phone?   | 1.028887       | 1.01269  | 1.018478 | 1.051693 | 1.002778 | 1.004633 | 1.1477   |
| H/hold's main fuel for cooking                 | 5.684044       | 4.295801 | 4.16087  | 6.215005 | 3.292857 | 3.619305 | 7.857515 |
| H/hold's main fuel for heating                 | 5.684044       | 4.295801 | 4.16087  | 6.215005 | 3.292857 | 3.619305 | 7.857515 |
| Hhold's main fuel for lighting                 | 4.736177       | 3.49377  | 3.569565 | 4.798719 | 2.668254 | 2.836293 | 5.945986 |
| Highest class/standard completed               | 2.027308       | 9.580295 | 1.643478 | 10.06313 | 1.945238 | 9.26139  | 11.79987 |
| Does h/hold have to pay for water?             | 2.961634       | 1.970005 | 2.186957 | 3.113449 | 1.298413 | 1.441699 | 4.35705  |
| Is there a land line phone in h/hold?          | 1.145114       | 1.032072 | 1.011957 | 1.069076 | 1.005159 | 1.006178 | 1.540697 |
| H/hold distance from health facility           | 3.608441       | 3.305722 | 3.511957 | 3.807868 | 2.85873  | 3.118919 | 3.770441 |
| H/hold transport to health facility            | 3.459264       | 3.659898 | 3.571196 | 3.763495 | 3.85873  | 3.876062 | 4.959955 |
| Facility the h/hold usually seeks medical help | 4.830964       | 4.70766  | 4.714674 | 5.106587 | 4.595635 | 4.717375 | 6.27128  |
| How h/hold refuse is disposed of               | 5.06432        | 3.315874 | 4.057609 | 7.000915 | 2.578175 | 2.708494 | 7.414695 |
| H/hold's main water source                     | 10.88829       | 8.900323 | 10.32228 | 10.69808 | 4.300794 | 7.655212 | 11.72444 |

### Analysis of variance (ANOVA) (OHS 1997)

|  | Cluster     |    | Error       |       | F        | Sig. |
|--|-------------|----|-------------|-------|----------|------|
|  | Mean Square | df | Mean Square | df    |          |      |
| Did person work for pay during past 7 days?    | 2341.561    | 6  | 3.359134    | 28632 | 697.0729 | 0    |
| Type of dwelling occupied by h/hold            | 34848.33    | 6  | 1.344579    | 28632 | 25917.65 | 0    |
| Does anyone in h/hold have a cellular phone?   | 19.07554    | 6  | 0.059018    | 28632 | 323.2148 | 0    |
| H/hold's main fuel for cooking                 | 14794.42    | 6  | 1.911298    | 28632 | 7740.512 | 0    |
| H/hold's main fuel for heating                 | 14794.42    | 6  | 1.911298    | 28632 | 7740.512 | 0    |
| Hhold's main fuel for lighting                 | 7387.661    | 6  | 1.7702      | 28632 | 4173.348 | 0    |
| Highest class/standard completed               | 83991.81    | 6  | 4.722481    | 28632 | 17785.53 | 0    |
| Does h/hold have to pay for water?             | 6534.139    | 6  | 2.5033      | 28632 | 2610.21  | 0    |
| Is there a land line phone in h/hold?          | 273.0123    | 6  | 0.123711    | 28632 | 2206.858 | 0    |
| H/hold distance from health facility           | 434.4783    | 6  | 1.561638    | 28632 | 278.2195 | 0    |
| H/hold transport to health facility            | 1924.967    | 6  | 3.285003    | 28632 | 585.9864 | 0    |
| Facility the h/hold usually seeks medical help | 2572.029    | 6  | 2.342037    | 28632 | 1098.202 | 0    |
| How h/hold refuse is disposed of               | 18420.9     | 6  | 3.359004    | 28632 | 5484.037 | 0    |
| H/hold's main water source                     | 23000.54    | 6  | 2.651159    | 28632 | 8675.655 | 0    |

NB. The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in the different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

### Number of cases in each cluster (OHS 1997)

| Cluster                               | Number of cases |
|---------------------------------------|-----------------|
| 1                                     | 4431            |
| 2                                     | 4334            |
| 3                                     | 1840            |
| 4                                     | 2186            |
| 5                                     | 2520            |
| 6                                     | 2590            |
| 7                                     | 10738           |
| Valid number of cases in analysis (N) | 28639           |
| Cases excluded due to missing data    | 1172            |
| Total                                 | 29811           |

## APPENDIX G: DISCRIMINANT ANALYSIS RESULTS FOR OHS 1997

### Summary of canonical discriminant functions (OHS 1997)

| Function | Eigenvalue | Percentage of Variance | Cumulative percentage | Canonical Correlation |
|----------|------------|------------------------|-----------------------|-----------------------|
| 1        | 7.955331   | 59.13761               | 59.13761              | 0.942515              |
| 2        | 3.462589   | 25.73988               | 84.87749              | 0.88086               |
| 3        | 1.558264   | 11.58368               | 96.46117              | 0.780455              |
| 4        | 0.408872   | 3.039439               | 99.50061              | 0.538714              |
| 5        | 0.063325   | 0.470741               | 99.97135              | 0.244037              |
| 6        | 0.003854   | 0.028647               | 100                   | 0.061958              |

NB. The first six canonical discriminant functions were used in the analysis.

### Wilks' lambda and chi square values (OHS 1997)

| Test of Function(s) | Wilks' Lambda | Chi-square | df | Sig.     |
|---------------------|---------------|------------|----|----------|
| 1 through 6         | 0.006504      | 144151.8   | 78 | 0        |
| 2 through 6         | 0.058245      | 81392.12   | 60 | 0        |
| 3 through 6         | 0.259924      | 38572.39   | 44 | 0        |
| 4 through 6         | 0.664954      | 11681.28   | 30 | 0        |
| 5 through 6         | 0.936836      | 1867.896   | 18 | 0        |
| 6                   | 0.996161      | 110.1094   | 8  | 3.62E-20 |

### Standardized canonical discriminant function coefficients (OHS 1997)

|  | Function |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|----------|
|  | 1        | 2        | 3        | 4        | 5        | 6        |
| Did person work for pay during past 7 days?    | 0.027108 | 0.020369 | 0.080322 | 0.071392 | -0.16301 | 0.451964 |
| Does anyone in h/hold have a cellular phone?   | -0.02574 | -0.06226 | 0.057031 | 0.061691 | 0.088559 | 0.161893 |
| Type of dwelling occupied by h/hold            | 0.732565 | -0.61987 | -0.27467 | -0.03789 | -0.08376 | 0.059763 |
| H/hold's main fuel for cooking                 | 0.287452 | 0.091832 | 0.295403 | 0.333299 | -0.02892 | -0.57274 |
| Hhold's main fuel for lighting                 | 0.073202 | 0.020489 | 0.147335 | 0.060214 | -0.06907 | -0.11361 |
| Is there a land line phone in h/hold?          | 0.016212 | -0.03738 | 0.01798  | 0.270603 | 0.610989 | -0.12304 |
| H/hold distance from health facility           | -0.01301 | -0.02095 | 0.023482 | -0.01771 | 0.054069 | 0.297411 |
| H/hold transport to health facility            | 0.005533 | -0.01186 | 0.052003 | 0.112972 | 0.273314 | 0.387438 |
| Highest class/standard completed               | 0.391152 | 0.73394  | -0.58935 | -0.15081 | -0.04492 | -0.05993 |
| Does h/hold have to pay for water?             | 0.046707 | 0.026952 | 0.072247 | 0.110106 | 0.216852 | 0.056503 |
| Facility the h/hold usually seeks medical help | 0.056008 | -0.04299 | 0.06414  | 0.19108  | 0.239969 | 0.242026 |
| H/hold's main water source                     | 0.318427 | 0.129332 | 0.482779 | -0.79284 | 0.223283 | 0.018319 |
| How h/hold refuse is disposed of               | 0.202565 | 0.151866 | 0.266823 | 0.348567 | -0.6875  | 0.35239  |

### Structure matrix – correlations between functions and predictors (OHS 1997)

|  | Function  |           |           |           |           |           |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
|  | 1         | 2         | 3         | 4         | 5         | 6         |
| Type of dwelling occupied by h/hold            | 0.697359* | -0.6368   | -0.31813  | -0.03265  | -0.05138  | 0.034272  |
| Highest class/standard completed               | 0.430405  | 0.728697* | -0.51558  | -0.00141  | 0.087633  | 0.051874  |
| Does h/hold have to pay for water?             | 0.221095  | 0.10366   | 0.254515* | 0.215422  | 0.117628  | 0.165587  |
| H/hold's main water source                     | 0.350137  | 0.176661  | 0.598602  | -0.65222* | 0.192126  | 0.105202  |
| Is there a land line phone in h/hold?          | 0.204864  | 0.086067  | 0.119414  | 0.364739  | 0.644643* | 0.001456  |
| How h/hold refuse is disposed of               | 0.281039  | 0.222583  | 0.429564  | 0.347692  | -0.4335*  | 0.346238  |
| H/hold transport to health facility            | 0.087516  | 0.079806  | 0.002498  | 0.259326  | 0.431395* | 0.367858  |
| Facility the h/hold usually seeks medical help | 0.136675  | 0.099287  | 0.07689   | 0.261094  | 0.394199* | 0.348552  |
| H/hold's main fuel for cooking                 | 0.382561  | 0.201877  | 0.399942  | 0.402631  | -0.00441  | -0.54178* |
| H/hold's main fuel for heating                 | 0.382561  | 0.201877  | 0.399942  | 0.402631  | -0.00441  | -0.54178* |
| Did person work for pay during past 7 days?    | 0.100796  | 0.127798  | 0.068485  | 0.022097  | -0.08     | 0.45106*  |
| Hhold's main fuel for lighting                 | 0.281144  | 0.112408  | 0.3411    | 0.221415  | -0.05078  | -0.35309* |
| Does anyone in h/hold have a cellular phone?   | 0.074868  | 0.05049   | 0.050461  | 0.138754  | 0.185318  | 0.278441* |
| H/hold distance from health facility           | 0.059741  | 0.041347  | 0.118356  | -0.05501  | -0.11582  | 0.140249* |

NB. Pooled within correlations between discriminating variables and standardized canonical discriminant functions. Variables ordered by absolute size of correlation within function.

\*Largest absolute correlation between each variable and any discriminant function.

### Canonical discriminant function coefficients – unstandardised (OHS 1997)

|  | Function |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|----------|
|  | 1        | 2        | 3        | 4        | 5        | 6        |
| Did person work for pay during past 7 days?    | 0.01479  | 0.011114 | 0.043825 | 0.038952 | -0.08894 | 0.246598 |
| Does anyone in h/hold have a cellular phone?   | -0.10595 | -0.2563  | 0.234756 | 0.253939 | 0.364536 | 0.6664   |
| Type of dwelling occupied by h/hold            | 0.631762 | -0.53457 | -0.23687 | -0.03267 | -0.07223 | 0.051539 |
| H/hold's main fuel for cooking                 | 0.207922 | 0.066425 | 0.213673 | 0.241085 | -0.02092 | -0.41428 |
| Hhold's main fuel for lighting                 | 0.055019 | 0.0154   | 0.110737 | 0.045257 | -0.05192 | -0.08539 |
| Is there a land line phone in h/hold?          | 0.046093 | -0.10629 | 0.051121 | 0.769357 | 1.737117 | -0.34982 |
| H/hold distance from health facility           | -0.01041 | -0.01677 | 0.018791 | -0.01418 | 0.043267 | 0.237994 |
| H/hold transport to health facility            | 0.003053 | -0.00654 | 0.028692 | 0.062331 | 0.150798 | 0.213764 |
| Highest class/standard completed               | 0.179995 | 0.337734 | -0.2712  | -0.0694  | -0.02067 | -0.02758 |
| Does h/hold have to pay for water?             | 0.029521 | 0.017035 | 0.045663 | 0.069591 | 0.137059 | 0.035712 |
| Facility the h/hold usually seeks medical help | 0.036597 | -0.02809 | 0.041911 | 0.124858 | 0.156804 | 0.158148 |
| H/hold's main water source                     | 0.195565 | 0.079431 | 0.296504 | -0.48693 | 0.137132 | 0.011251 |
| How h/hold refuse is disposed of               | 0.110525 | 0.082862 | 0.145585 | 0.190187 | -0.37512 | 0.192273 |
| (Constant)                                     | -11.406  | 0.964979 | -2.14652 | 0.667686 | -2.50445 | -2.22687 |

### Unstandardised canonical discriminant functions at group centroids (OHS 1997)

| Cluster Number of Case | Function |          |          |          |          |          |
|------------------------|----------|----------|----------|----------|----------|----------|
|                        | 1        | 2        | 3        | 4        | 5        | 6        |
| 1                      | 0.167742 | -2.95065 | 1.340109 | -0.3771  | -0.09973 | -0.07042 |
| 2                      | 0.612545 | -0.8507  | -2.05634 | -0.80893 | -0.1468  | 0.051793 |
| 3                      | -4.5875  | 0.109745 | 2.147967 | -0.64075 | 0.414633 | 0.141999 |
| 4                      | -2.37105 | 3.589431 | 1.204352 | -0.06547 | -0.65278 | 0.000832 |
| 5                      | -4.2617  | -2.0545  | -1.01084 | 1.552983 | -0.08575 | 0.027039 |
| 6                      | -3.89918 | 2.175218 | -1.197   | -0.33418 | 0.341396 | -0.12012 |
| 7                      | 2.892946 | 0.768894 | 0.189672 | 0.321375 | 0.100023 | 0.006279 |

NB. Unstandardised canonical discriminant functions are evaluated at group means

### Classification function coefficients - Fisher's (OHS 1997)

|  | Cluster Number of Case |          |          |          |          |          |          |
|--|------------------------|----------|----------|----------|----------|----------|----------|
|  | 1                      | 2        | 3        | 4        | 5        | 6        | 7        |
| Did person work for pay during past 7 days?    | 0.189489               | 0.088058 | 0.184935 | 0.29757  | 0.128874 | 0.025295 | 0.249069 |
| Does anyone in h/hold have a cellular phone?   | 13.76021               | 12.33216 | 13.93139 | 12.24611 | 14.00807 | 12.42031 | 12.5494  |
| Type of dwelling occupied by h/hold            | 8.556257               | 8.543025 | 3.707116 | 3.521776 | 5.776675 | 3.811918 | 8.528771 |
| H/hold's main fuel for cooking                 | 2.087935               | 1.440426 | 1.312798 | 2.02266  | 1.148794 | 1.062414 | 2.788258 |
| Hhold's main fuel for lighting                 | 0.947224               | 0.600388 | 0.765412 | 0.929957 | 0.535286 | 0.504737 | 1.041738 |
| Is there a land line phone in h/hold?          | 2.153808               | 1.320734 | 2.267006 | 0.588848 | 3.209329 | 2.108541 | 2.682814 |
| H/hold distance from health facility           | 2.338171               | 2.267683 | 2.428089 | 2.241012 | 2.32152  | 2.253544 | 2.24282  |
| H/hold transport to health facility            | 0.915463               | 0.797737 | 1.010633 | 0.81227  | 0.971867 | 0.855276 | 0.956485 |
| Highest class/standard completed               | -0.22266               | 1.515312 | -0.26226 | 1.553841 | -0.21663 | 1.453833 | 1.781363 |
| Does h/hold have to pay for water?             | -0.42589               | -0.56422 | -0.41751 | -0.4472  | -0.50902 | -0.51281 | -0.25589 |
| Facility the h/hold usually seeks medical help | 1.552946               | 1.325909 | 1.408126 | 1.234065 | 1.525724 | 1.220437 | 1.630631 |
| H/hold's main water source                     | 3.796428               | 3.248354 | 3.550399 | 3.55238  | 1.367493 | 2.695003 | 3.971867 |
| How h/hold refuse is disposed of               | 0.590332               | 0.278052 | 0.233716 | 1.112318 | 0.213333 | 0.029342 | 1.104912 |
| (Constant)                                     | -95.9824               | -89.8407 | -50.2554 | -63.8377 | -46.0811 | -45.6299 | -120.423 |

NB. Fisher's linear discriminant functions



### Classification results (OHS 1997)

| Cluster Number of Case | Predicted Group Membership |      |      |      |      |      |       | Total |
|------------------------|----------------------------|------|------|------|------|------|-------|-------|
|                        | 1                          | 2    | 3    | 4    | 5    | 6    | 7     |       |
| Original count 1       | 4290                       | 51   | 40   | 1    | 2    | 1    | 46    | 4431  |
| 2                      | 57                         | 4162 | 0    | 1    | 22   | 3    | 89    | 4334  |
| 3                      | 11                         | 0    | 1782 | 30   | 5    | 12   | 0     | 1840  |
| 4                      | 0                          | 3    | 17   | 2107 | 9    | 45   | 5     | 2186  |
| 5                      | 109                        | 109  | 20   | 0    | 2224 | 58   | 0     | 2520  |
| 6                      | 0                          | 3    | 41   | 25   | 24   | 2497 | 0     | 2590  |
| 7                      | 63                         | 130  | 0    | 102  | 0    | 0    | 10443 | 10738 |
| (%)                    |                            |      |      |      |      |      |       |       |
| 1                      | 96.8                       | 1.2  | 0.9  | 0.02 | 0.05 | 0.02 | 1.0   | 100   |
| 2                      | 1.3                        | 96.0 | 0    | 0.02 | 0.5  | 0.07 | 2.1   | 100   |
| 3                      | 0.6                        | 0    | 96.9 | 1.6  | 0.3  | 0.7  | 0     | 100   |
| 4                      | 0                          | 0.1  | 0.8  | 96.4 | 0.4  | 2.1  | 0.2   | 100   |
| 5                      | 4.3                        | 4.3  | 0.8  | 0    | 88.3 | 2.3  | 0     | 100   |
| 6                      | 0                          | 0.1  | 1.6  | 1.0  | 0.9  | 96.4 | 0     | 100   |
| 7                      | 0.6                        | 1.2  | 0    | 1.0  | 0    | 0    | 97.3  | 100   |

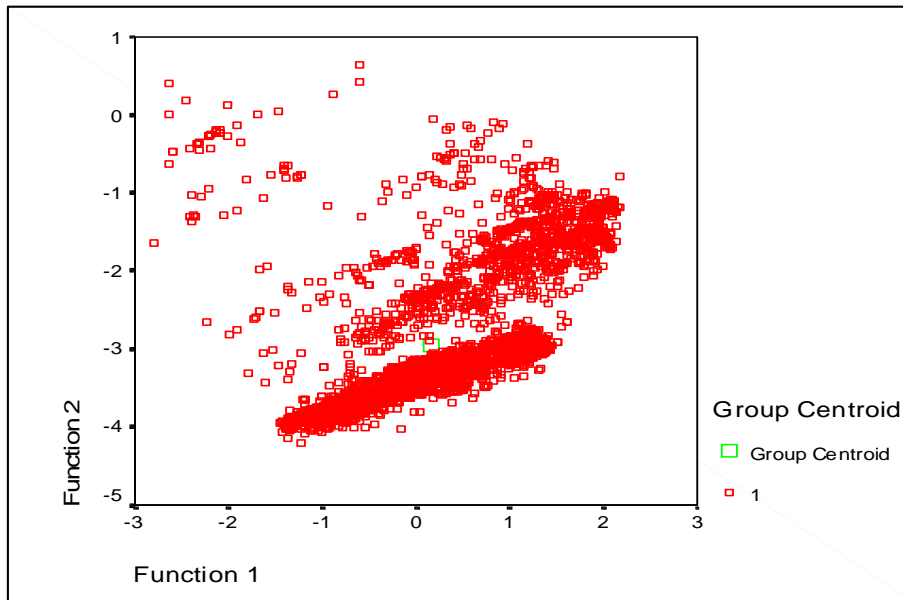
NB. 96.0% of original grouped cases correctly classified.

### Territorial Map (OHS 1997)

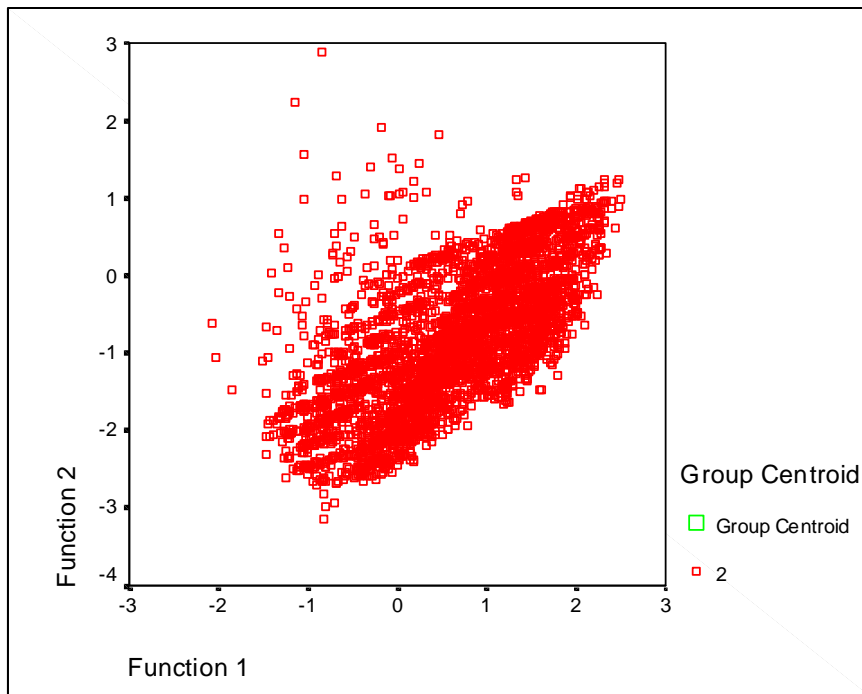
| (Assuming all functions but the first two are zero) |            |                   |      |      |        |     |
|---|------------|-------------------|------|------|--------|-----|
| Canonical Discriminant Function 2                   |            |                   |      |      |        |     |
| -6.0  | -4.0       | -2.0              | .0   | 2.0  | 4.0    | 6.0 |
| +-----+-----+-----+-----+-----+-----+               |            |                   |      |      |        |     |
| 6.0 +44   |            |                   | 47   |      | +      |     |
| I6644   |            |                   | 47   |      | I      |     |
| I 664   |            |                   | 47   |      | I      |     |
| I 644   |            |                   | 47   |      | I      |     |
| I 664   |            |                   | 47   |      | I      |     |
| I 644   |            |                   | 47   |      | I      |     |
| 4.0 +   | 664        | +                 | +    | 47 + | +      | +   |
| I 644   | *          |                   | 47   |      | I      |     |
| I 664   |            |                   | 47   |      | I      |     |
| I 644   |            |                   | 47   |      | I      |     |
| I 664   |            |                   | 47   |      | I      |     |
| I *   | 644        |                   | 47   |      | I      |     |
| 2.0 +   | +          | 6644              | 47   | +    | +      | +   |
| I 664   |            | 47                |      |      | I      |     |
| I 644   |            | 447               |      |      | I      |     |
| I66   |            | 664444227         |      |      | I      |     |
| I3366666  |            | 6222 277          | *    |      | I      |     |
| I 3333366666  |            | 62 227            |      |      | I      |     |
| .0 +  | *333366666 | + 62              | + 27 | +    | +      | +   |
| I 33333666662                                       |            | 27                |      |      | I      |     |
| I333333333355555555222                              |            | 27                |      |      | I      |     |
| I55555555555  |            | 51122222222 * 277 |      |      | I      |     |
| I 51  |            | 111111112222227   |      |      | I      |     |
| I 51  |            | 1111111177        |      |      | I      |     |
| -2.0 +  | *+         | 51                | +    | 1177 | +      | +   |
| I 51  |            | 11777             |      |      | I      |     |
| I 51  |            | 11177             |      |      | I      |     |
| I 51  | *          | 1177              |      |      | I      |     |
| I 51  |            | 1177              |      |      | I      |     |
| I 51  |            | 11777             |      |      | I      |     |
| -4.0 +  | +          | 51+               | +    | +    | + 1177 | +   |
| I 51  |            | 1177              |      |      | I      |     |
| I 51  |            | 117I              |      |      |        |     |
| I 51  |            | 11                |      |      |        |     |
| I 51  |            | I                 |      |      |        |     |
| I 51  |            | I                 |      |      |        |     |
| -6.0 +  | 51         |                   |      |      | +      |     |
| +-----+-----+-----+-----+-----+-----+               |            |                   |      |      |        |     |
| -6.0  | -4.0       | -2.0              | .0   | 2.0  | 4.0    | 6.0 |
| Canonical Discriminant Function 1                   |            |                   |      |      |        |     |

NB. \* indicates a group centroid

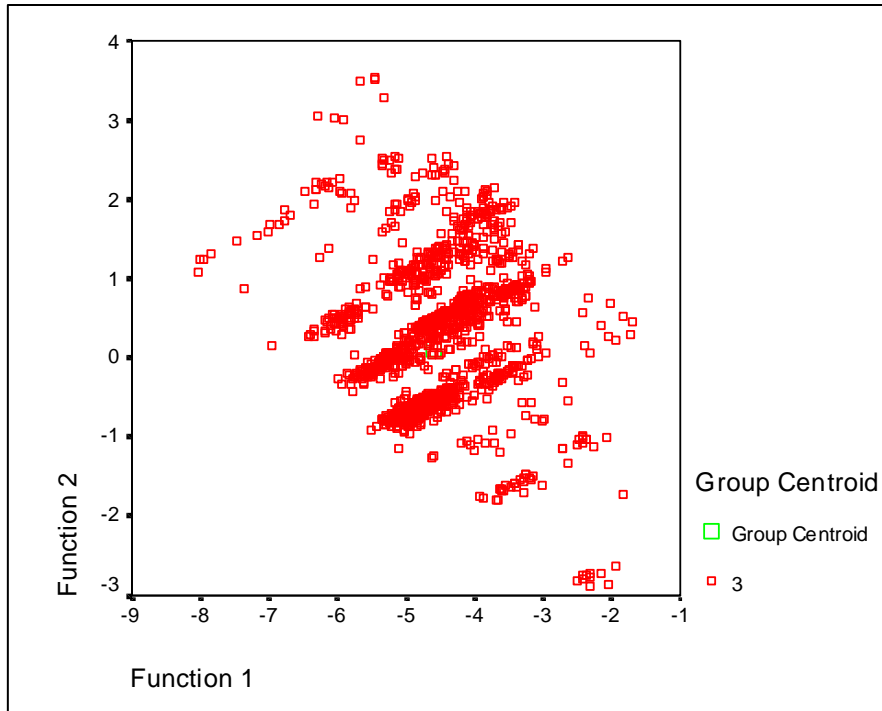
**Canonical discriminant function plot – QOL 1 (OHS 1997)**



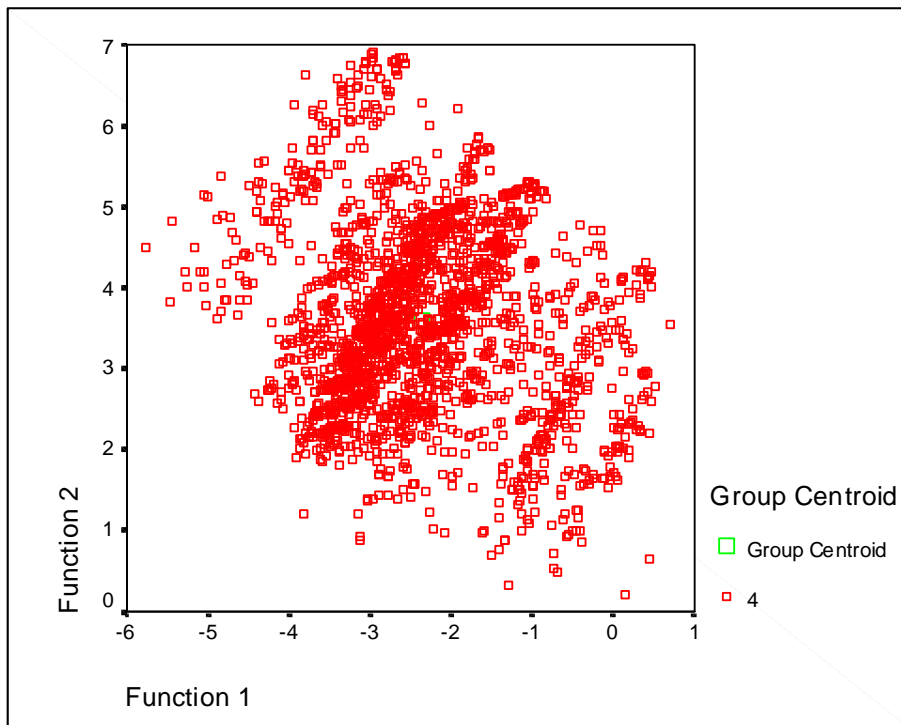
**Canonical discriminant function plot – QOL 2 (OHS 1997)**



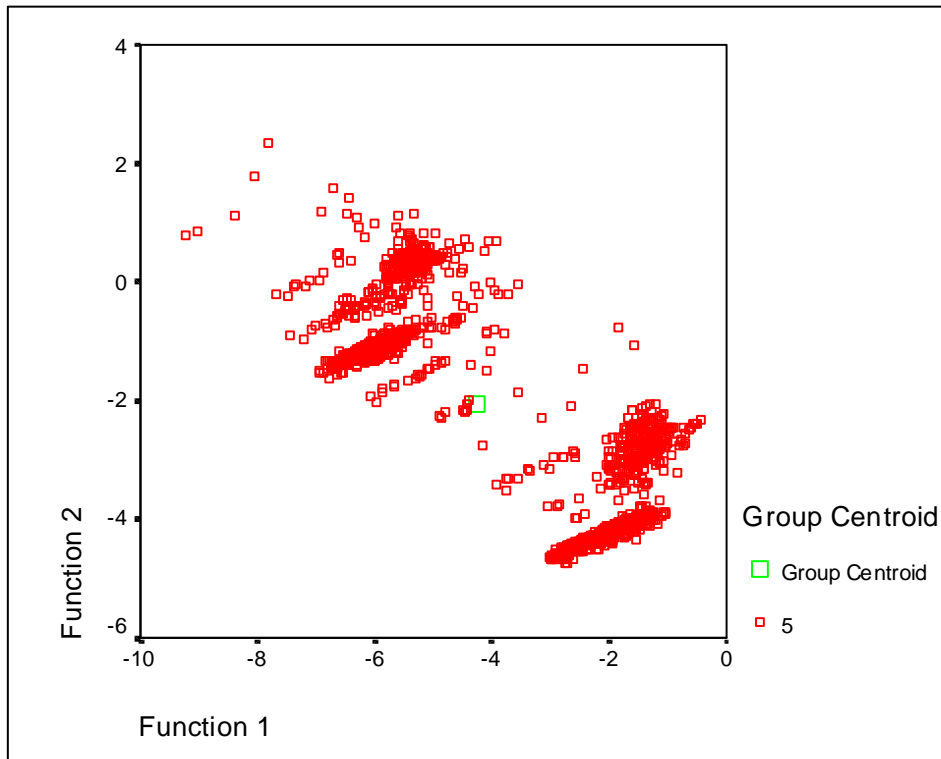
**Canonical discriminant function plot – QOL 3 (OHS 1997)**



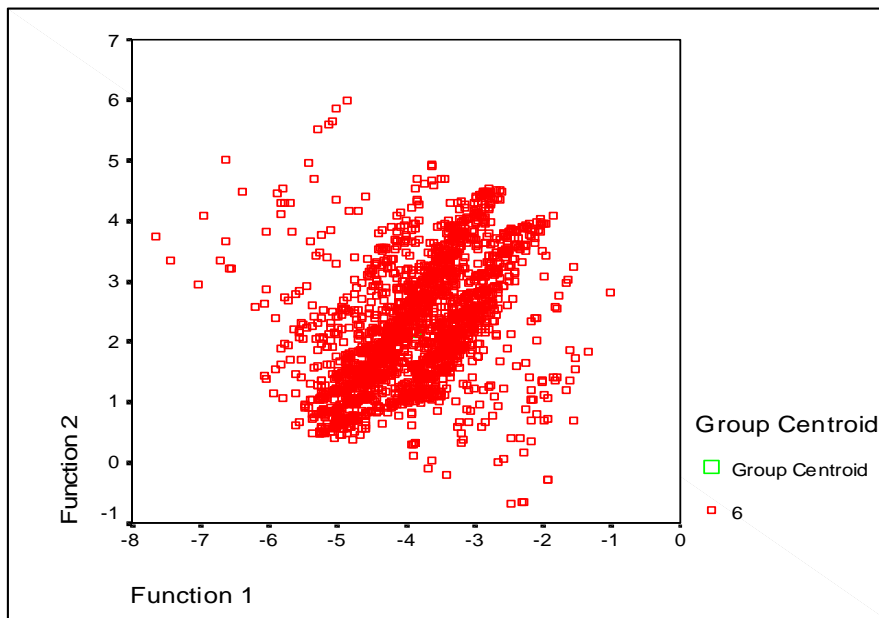
**Canonical discriminant function plot – QOL 4 (OHS 1997)**



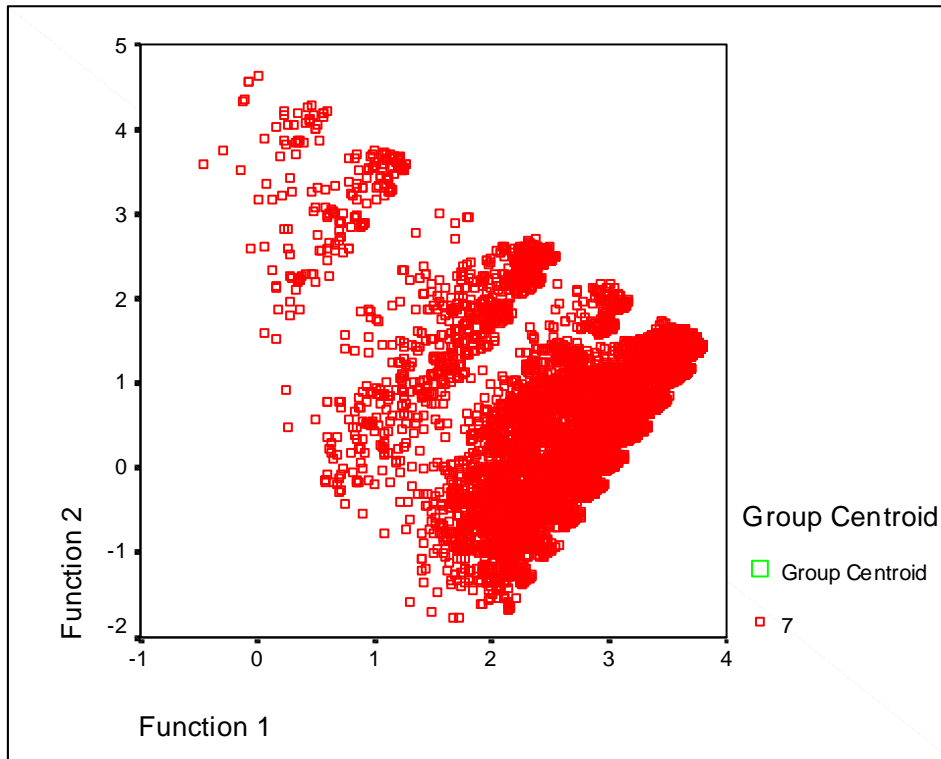
**Canonical discriminant function plot – QOL 5 (OHS 1997)**



**Canonical discriminant function plot – QOL 6 (OHS 1997)**



### Canonical discriminant function plot – QOL 7 (OHS 1997)



## APPENDIX H: CLUSTER ANALYSIS RESULTS FOR OHS 1996

### Initial cluster centers (OHS 1996)

| Variables in analysis                     | Cluster |    |   |    |    |
|---|---------|----|---|----|----|
|   | 1       | 2  | 3 | 4  | 5  |
| Cell phone telephone                      | 2       | 2  | 2 | 2  | 2  |
| Type of dwelling occupied by h/hold       | 9       | 9  | 1 | 1  | 9  |
| Worked past 7 days                        | 1       | 3  | 3 | 1  | 3  |
| H/hold's fuel for cooking                 | 6       | 4  | 3 | 7  | 7  |
| H/hold's fuel for heating                 | 3       | 1  | 3 | 7  | 7  |
| H/hold's fuel for lighting                | 5       | 2  | 2 | 5  | 5  |
| Health facility usually visited by h/hold | 4       | 4  | 4 | 7  | 4  |
| Have access to the medical scheme         | 2       | 2  | 2 | 2  | 2  |
| Telephone in dwelling                     | 2       | 2  | 2 | 1  | 2  |
| H/hold refuse disposal                    | 2       | 8  | 3 | 8  | 3  |
| H/hold's main water source                | 12      | 12 | 1 | 12 | 1  |
| H/hold distance from medical facility     | 5       | 2  | 1 | 5  | 4  |
| Highest education level completed         | 1       | 19 | 1 | 11 | 13 |

### Iteration history (OHS 1996)

| Iteration | Change in Cluster Centers |          |          |          |          |
|-----------|---------------------------|----------|----------|----------|----------|
|           | 1                         | 2        | 3        | 4        | 5        |
| 1         | 5.384404                  | 7.313124 | 6.01805  | 6.506567 | 7.105921 |
| 2         | 0.836693                  | 1.461003 | 0.842441 | 0.814986 | 2.191666 |
| 3         | 0.504257                  | 0.489099 | 0.237249 | 0.29048  | 1.008549 |
| 4         | 0.279898                  | 0.023059 | 0.117488 | 0.215667 | 0.63481  |
| 5         | 0.210649                  | 0.019906 | 0.100396 | 0.184006 | 0.500061 |
| 6         | 0.077536                  | 0.026797 | 0.158779 | 0.12041  | 0.304927 |
| 7         | 0.054228                  | 0.019062 | 0.159452 | 0.0524   | 0.185547 |
| 8         | 0.042095                  | 0.016914 | 0.092073 | 0.025694 | 0.103629 |
| 9         | 0.02544                   | 0.006496 | 0.045069 | 0.012985 | 0.054929 |
| 10        | 0.021172                  | 0        | 0.041051 | 0.004076 | 0.040534 |

Comment: Iterations stopped because the maximum number of iterations was performed. Iterations stopped to converge. The maximum distance by which any center has changed is 0.04054. The current iteration is 10. The minimum distance between initial centers is 14.318

### Final cluster centers (OHS 1996)

| Variables in analysis                     | Cluster  |          |          |          |          |
|---|----------|----------|----------|----------|----------|
|   | 1        | 2        | 3        | 4        | 5        |
| Cell-phone telephone                      | 1.994149 | 1.798535 | 1.996472 | 1.936014 | 1.991831 |
| Type of dwelling occupied by h/hold       | 6.652428 | 8.510623 | 5.972278 | 8.275953 | 5.467776 |
| Worked past 7 days                        | 2.329725 | 1.4      | 2.650202 | 1.802001 | 2.135855 |
| H/hold's fuel for cooking                 | 4.422762 | 6.786081 | 3.290323 | 6.764062 | 3.898033 |
| H/hold's fuel for heating                 | 4.384728 | 6.699634 | 3.276714 | 6.668177 | 3.902874 |
| H/hold's fuel for lighting                | 3.573142 | 4.841026 | 2.688508 | 4.911665 | 2.947352 |
| Health facility usually visited by h/hold | 4.738444 | 6.947253 | 4.670867 | 5.962061 | 4.77882  |
| Have access to the medical scheme         | 1.89175  | 1.317216 | 1.950101 | 1.650623 | 1.906203 |
| Telephone in dwelling                     | 1.915448 | 1.284249 | 1.99244  | 1.513401 | 1.982753 |
| H/hold refuse disposal                    | 4.693388 | 7.147985 | 2.789315 | 7.522084 | 3.859607 |
| H/hold's main water source                | 10.66559 | 11.71575 | 4.346774 | 11.71744 | 9.165204 |
| H/hold distance from medical facility     | 3.402575 | 3.542125 | 2.624496 | 3.780861 | 3.156732 |
| Highest education level completed         | 2.066121 | 18.02198 | 3.0625   | 10.44281 | 9.259002 |

### Analysis of variance (OHS 1996)

| Variables in analysis                     | Cluster     |    | Error       |       | F        | Sig. |
|---|-------------|----|-------------|-------|----------|------|
|   | Mean Square | df | Mean Square | df    |          |      |
| Cell-phone telephone                      | 12.10612    | 4  | 0.04299     | 15365 | 281.6023 | 0    |
| Type of dwelling occupied by h/hold       | 5497.406    | 4  | 4.224343    | 15365 | 1301.364 | 0    |
| Worked past 7 days                        | 476.4146    | 4  | 0.836547    | 15365 | 569.5015 | 0    |
| H/hold's fuel for cooking                 | 7822.782    | 4  | 1.141174    | 15365 | 6855.032 | 0    |
| H/hold's fuel for heating                 | 7396.912    | 4  | 1.285877    | 15365 | 5752.428 | 0    |
| H/hold's fuel for lighting                | 3226.886    | 4  | 0.932751    | 15365 | 3459.538 | 0    |
| Health facility usually visited by h/hold | 2184.542    | 4  | 2.478174    | 15365 | 881.5129 | 0    |
| Have access to the medical scheme         | 132.9068    | 4  | 0.179426    | 15365 | 740.734  | 0    |
| Telephone in dwelling                     | 245.3864    | 4  | 0.12748     | 15365 | 1924.904 | 0    |
| H/hold refuse disposal                    | 12760.51    | 4  | 3.396257    | 15365 | 3757.229 | 0    |
| H/hold's main water source                | 21716.23    | 4  | 1.876324    | 15365 | 11573.82 | 0    |
| H/hold distance from medical facility     | 545.9762    | 4  | 1.54608     | 15365 | 353.1357 | 0    |
| Highest education level completed         | 85660.14    | 4  | 4.321647    | 15365 | 19821.18 | 0    |



### Number of cases in each cluster (OHS 1996)

|         |   |       |
|---------|---|-------|
| Cluster | 1 | 3418  |
|         | 2 | 1365  |
|         | 3 | 1984  |
|         | 4 | 5298  |
|         | 5 | 3305  |
| Valid   |   | 15370 |
| Missing |   | 547   |

## APPENDIX I: DISCRIMINANT ANALYSIS RESULTS FOR OHS 1996

### Summary of canonical discriminant functions (OHS 1996)

| Eigenvalues |            |               |              |                       |
|-------------|------------|---------------|--------------|-----------------------|
| Function    | Eigenvalue | % of Variance | Cumulative % | Canonical Correlation |
| 1           | 7.60875    | 73.85602      | 73.85602     | 0.940127              |
| 2           | 1.884736   | 18.29461      | 92.15063     | 0.808299              |
| 3           | 0.751764   | 7.297168      | 99.4478      | 0.655093              |
| 4           | 0.056888   | 0.552199      | 100          | 0.232005              |

Note: First 4 canonical discriminant functions were used in the analysis

### Wilks' lambda and chi square values (OHS 1996)

| Test of Function(s) | Wilks' Lambda | Chi-square | df | Sig. |
|---------------------|---------------|------------|----|------|
| 1 through 4         | 0.021749      | 58800.61   | 52 | 0    |
| 2 through 4         | 0.187236      | 25733.93   | 36 | 0    |
| 3 through 4         | 0.540126      | 9461.03    | 22 | 0    |
| 4                   | 0.946174      | 849.8541   | 10 | 0    |

### Standardised canonical discriminant function coefficients (OHS 1996)

|   | Function |          |          |          |
|---|----------|----------|----------|----------|
|   | 1        | 2        | 3        | 4        |
| Cell-phone telephone                      | 0.014579 | 0.018508 | -0.01615 | 0.452606 |
| Type of dwelling occupied by h/hold       | 0.13965  | 0.169082 | 0.367191 | -0.17385 |
| Worked past 7 days                        | 0.031515 | 0.014517 | -0.0237  | 0.028117 |
| Highest education level completed         | 0.780559 | -0.59962 | -0.24755 | 0.104058 |
| H/hold's fuel for cooking                 | 0.153427 | 0.159098 | 0.311091 | 0.192959 |
| H/hold's fuel for heating                 | 0.089041 | 0.039711 | 0.148851 | 0.205175 |
| H/hold's fuel for lighting                | 0.057604 | 0.069482 | 0.196557 | -0.09431 |
| Health facility usually visited by h/hold | 0.001363 | -0.01118 | 0.122448 | -0.21899 |
| H/hold distance from medical facility     | 0.015495 | 0.012489 | -0.06694 | 0.035866 |
| Have access to the medical scheme         | 0.018067 | -0.01713 | -0.08223 | 0.491154 |
| Telephone in dwelling                     | -0.02042 | 0.05775  | -0.15976 | 0.346173 |
| H/hold refuse disposal                    | 0.133123 | 0.055385 | 0.442019 | 0.297809 |
| H/hold's main water source                | 0.469412 | 0.661161 | -0.66442 | -0.11468 |

### Structure matrix – correlations between functions and predictors (OHS 1996)

|   | Function |          |          |         |
|---|----------|----------|----------|---------|
|   | 1        | 2        | 3        | 4       |
| Highest education level completed         | 0.759*   | -0.634   | -0.097   | -0.029  |
| Worked past 7 days                        | -0.139*  | -0.00581 | -0.00079 | 0.082   |
| H/hold's main water source                | 0.487    | 0.761*   | -0.391   | -0.088  |
| H/hold's fuel for cooking                 | 0.428    | 0.287    | 0.559*   | 0.215   |
| H/hold's fuel for heating                 | 0.393    | 0.260    | 0.503*   | 0.209   |
| H/hold's fuel for lighting                | 0.288    | 0.265    | 0.427*   | 0.004   |
| H/hold refuse disposal                    | 0.311    | 0.269    | 0.370*   | 0.300   |
| Type of dwelling occupied by h/hold       | 0.161    | 0.143    | 0.362*   | -0.302  |
| Have access to the medical scheme         | -0.145   | 0.014    | -0.135   | 0.588*  |
| Cell-phone telephone                      | -0.082   | 0.039    | -0.067   | 0.521*  |
| Telephone in dwelling                     | -0.23    | -0.05    | -0.332   | 0.442*  |
| Health facility usually visited by h/hold | 0.159    | -0.014   | 0.193    | -0.370* |
| H/hold distance from medical facility     | 0.086    | 0.132    | 0.022    | 0.166*  |

NB. Pooled within correlations between discriminating variables and standardized canonical discriminant functions. Variables ordered by absolute size of correlation within function.

\*Largest absolute correlation between each variable and any discriminant function.

### Canonical discriminant function coefficients (unstandardised) - OHS 1996

|   | Function |          |          |          |
|---|----------|----------|----------|----------|
|   | 1        | 2        | 3        | 4        |
| Cell-phone telephone                      | 0.070313 | 0.089263 | -0.07789 | 2.18291  |
| Type of dwelling occupied by h/hold       | 0.067946 | 0.082266 | 0.178654 | -0.08458 |
| Worked past 7 days                        | 0.034456 | 0.015872 | -0.02591 | 0.030742 |
| Highest education level completed         | 0.375475 | -0.28844 | -0.11908 | 0.050055 |
| H/hold's fuel for cooking                 | 0.143624 | 0.148932 | 0.291213 | 0.180629 |
| H/hold's fuel for heating                 | 0.078521 | 0.03502  | 0.131266 | 0.180936 |
| H/hold's fuel for lighting                | 0.059644 | 0.071943 | 0.203519 | -0.09765 |
| Health facility usually visited by h/hold | 0.000866 | -0.0071  | 0.077783 | -0.13911 |
| H/hold distance from medical facility     | 0.012462 | 0.010044 | -0.05383 | 0.028844 |
| Have access to the medical scheme         | 0.042652 | -0.04044 | -0.19412 | 1.159511 |
| Telephone in dwelling                     | -0.05719 | 0.161746 | -0.44746 | 0.969554 |
| H/hold refuse disposal                    | 0.072236 | 0.030053 | 0.23985  | 0.161599 |
| H/hold's main water source                | 0.342689 | 0.482674 | -0.48505 | -0.08372 |
| (Constant)                                | -8.92532 | -4.88665 | 1.354217 | -8.76746 |

### Functions at group centroids (OHS 1996)

| Cluster Number of Case | Function |          |          |          |
|------------------------|----------|----------|----------|----------|
|                        | 1        | 2        | 3        | 4        |
| 1                      | -2.27276 | 1.871857 | -0.41482 | -0.20362 |
| 2                      | 4.947992 | -1.598   | -0.05577 | -0.56844 |
| 3                      | -4.55066 | -1.84169 | 1.280371 | -0.04935 |
| 4                      | 2.139196 | 0.633202 | 0.619699 | 0.180936 |
| 5                      | -0.39052 | -1.18533 | -1.30997 | 0.184933 |

NB. Unstandardised canonical discriminant functions evaluated at group means

### Classification function coefficients - Fisher's linear discriminant functions (OHS 1996)

|   | Cluster Number of Case |          |          |          |          |
|---|------------------------|----------|----------|----------|----------|
|   | 1                      | 2        | 3        | 4        | 5        |
| Cell-phone telephone                      | 44.8158                | 44.18944 | 44.52887 | 45.77433 | 45.59315 |
| Type of dwelling occupied by h/hold       | 2.081538               | 2.381711 | 1.911071 | 2.431707 | 1.76514  |
| Worked past 7 days                        | 4.057451               | 4.230661 | 3.880844 | 4.174831 | 4.108918 |
| Highest education level completed         | 1.518264               | 5.169296 | 1.539953 | 3.428177 | 3.232846 |
| H/hold's fuel for cooking                 | 1.856008               | 2.414967 | 1.497308 | 2.675921 | 1.480532 |
| H/hold's fuel for heating                 | 1.913274               | 2.339865 | 1.854796 | 2.421706 | 1.906809 |
| H/hold's fuel for lighting                | 1.459075               | 1.748821 | 1.385986 | 1.806102 | 1.131274 |
| Health facility usually visited by h/hold | 3.173596               | 3.283163 | 3.30839  | 3.213184 | 3.073255 |
| H/hold distance from medical facility     | 1.518531               | 1.543811 | 1.366035 | 1.51647  | 1.570678 |
| Have access to the medical scheme         | 11.51995               | 11.47553 | 11.42276 | 12.00328 | 12.34816 |
| Telephone in dwelling                     | 20.3395                | 18.85095 | 19.26016 | 19.79679 | 20.51463 |
| H/hold refuse disposal                    | 0.186941               | 0.631422 | 0.342312 | 0.778691 | 0.079116 |
| H/hold's main water source                | 6.077851               | 6.733905 | 2.669639 | 6.457925 | 5.648906 |
| (Constant)                                | -143.747               | -196.794 | -112.756 | -177.299 | -147.439 |

### Classification processing summary (OHS 1996)

|                |  |       |
|----------------|--|-------|
| Processed      |  | 15917 |
| Excluded       | Missing or out-of-range group codes          | 0     |
|                | At least one missing discriminating variable | 547   |
| Used in Output |  | 15370 |

### Prior probabilities for groups (OHS 1996)

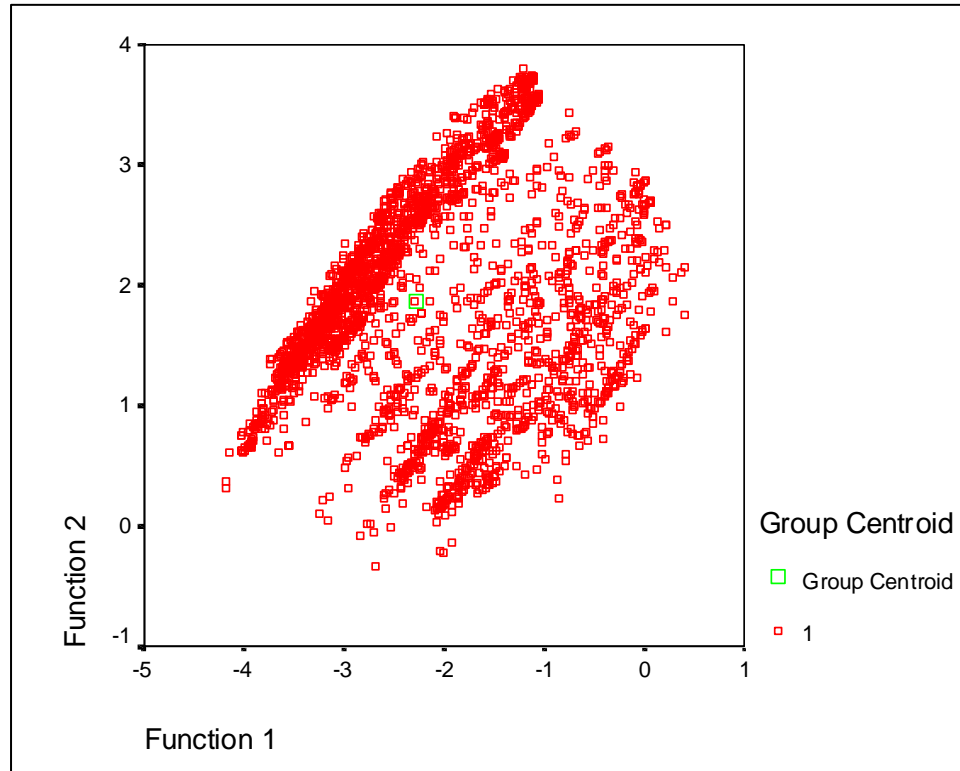
| Cluster Number of Case | Prior | Cases Used in Analysis |          |
|------------------------|-------|------------------------|----------|
|                        |       | Unweighted             | Weighted |
| 1                      | 0.2   | 3418                   | 3418     |
| 2                      | 0.2   | 1365                   | 1365     |
| 3                      | 0.2   | 1984                   | 1984     |
| 4                      | 0.2   | 5298                   | 5298     |
| 5                      | 0.2   | 3305                   | 3305     |
| Total                  | 1     | 15370                  | 15370    |

### Classification results (OHS 1996)

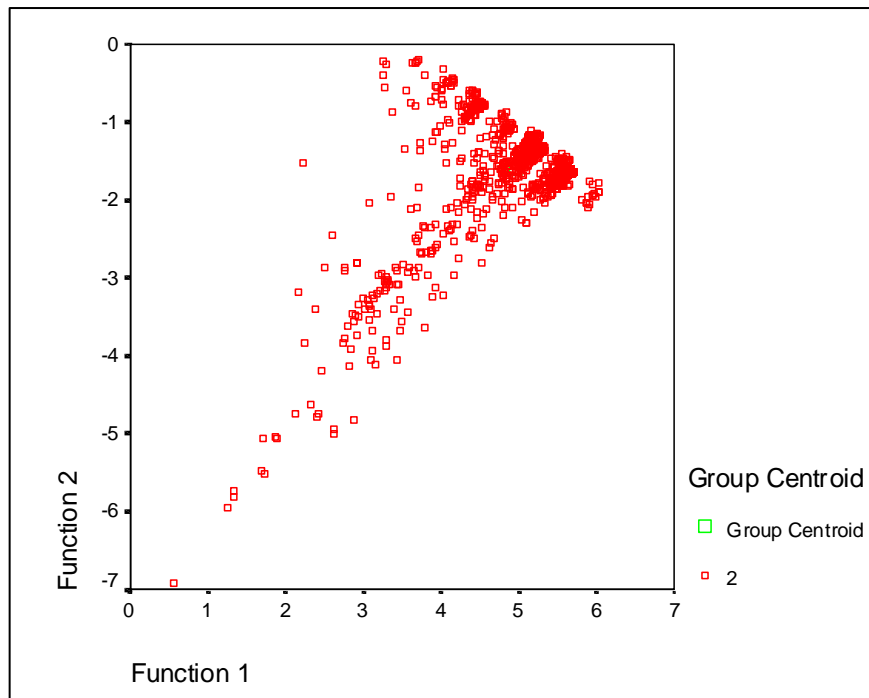
|                | Cluster Number of Case | Predicted Group Membership |      |      |      |      | Total |
|----------------|------------------------|----------------------------|------|------|------|------|-------|
|                |                        | 1                          | 2    | 3    | 4    | 5    |       |
| Original Count | 1                      | 3321                       | 0    | 10   | 44   | 43   | 3418  |
|                | 2                      | 0                          | 1343 | 0    | 8    | 14   | 1365  |
|                | 3                      | 32                         | 0    | 1944 | 0    | 8    | 1984  |
|                | 4                      | 18                         | 25   | 1    | 5180 | 74   | 5298  |
|                | 5                      | 22                         | 1    | 292  | 96   | 2894 | 3305  |
|                |                        |                            |      |      |      |      |       |
| %              | 1                      | 97.2                       | 0    | 0.3  | 1.3  | 1.3  | 100   |
|                | 2                      | 0                          | 98.4 | 0    | 0.6  | 1.03 | 100   |
|                | 3                      | 1.6                        | 0    | 98.0 | 0    | 0.4  | 100   |
|                | 4                      | 0.3                        | 0.5  | 0.02 | 97.8 | 1.4  | 100   |
|                | 5                      | 0.7                        | 0.03 | 8.8  | 2.9  | 87.6 | 100   |
|                |                        |                            |      |      |      |      |       |

**NB.** 95.5% of original grouped cases correctly classified.

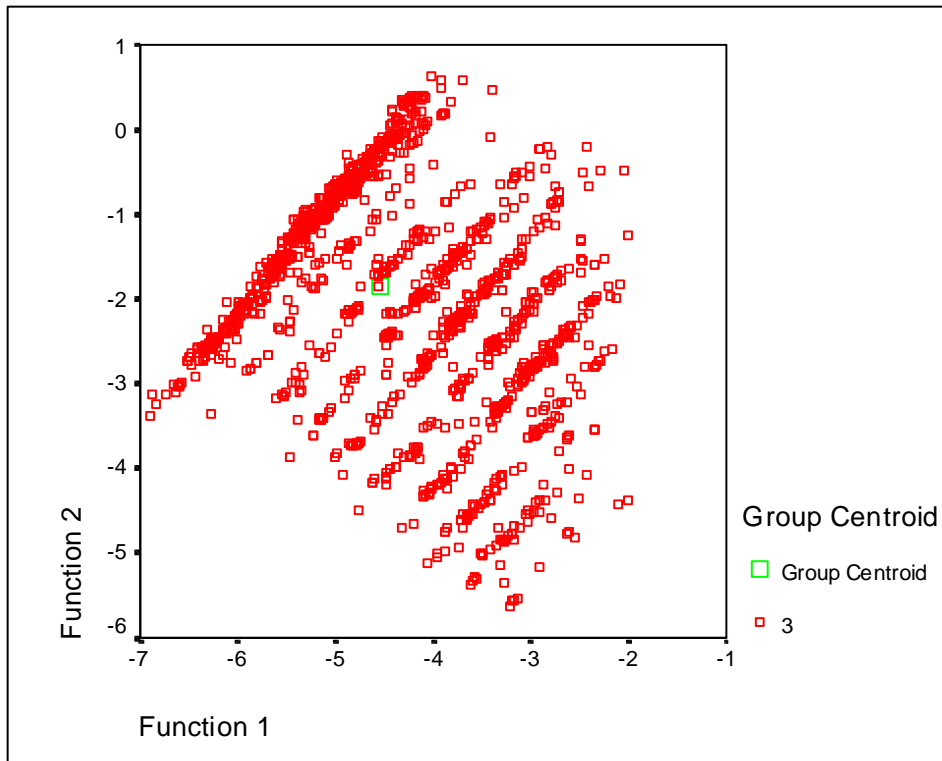
**Canonical discriminant function plot – QOL 1 (OHS 1996)**



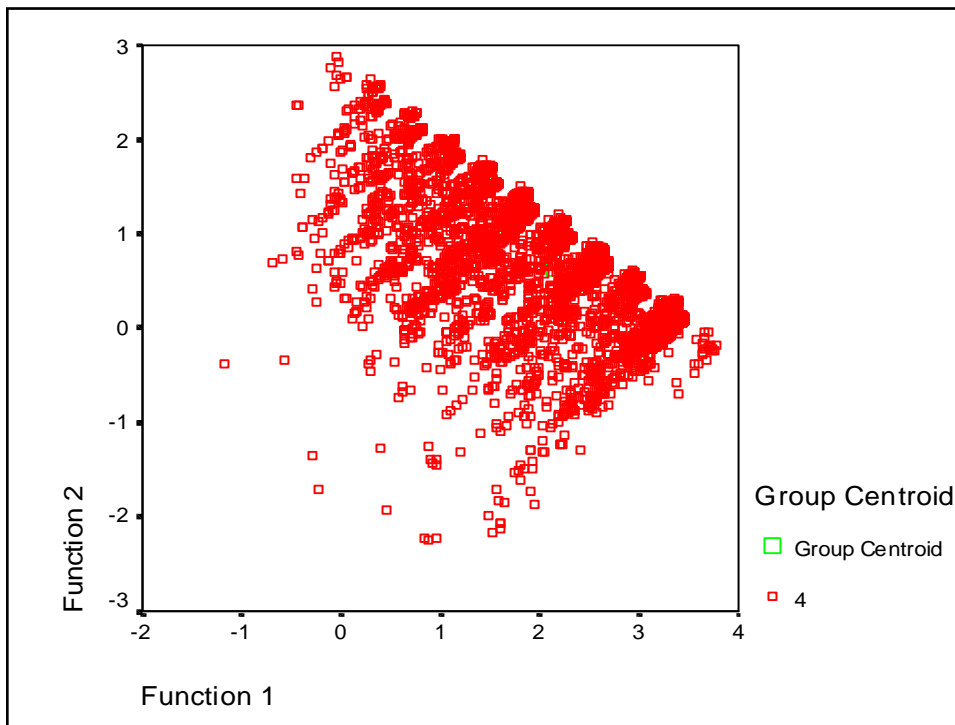
**Canonical discriminant function plot – QOL 2 (OHS 1996)**



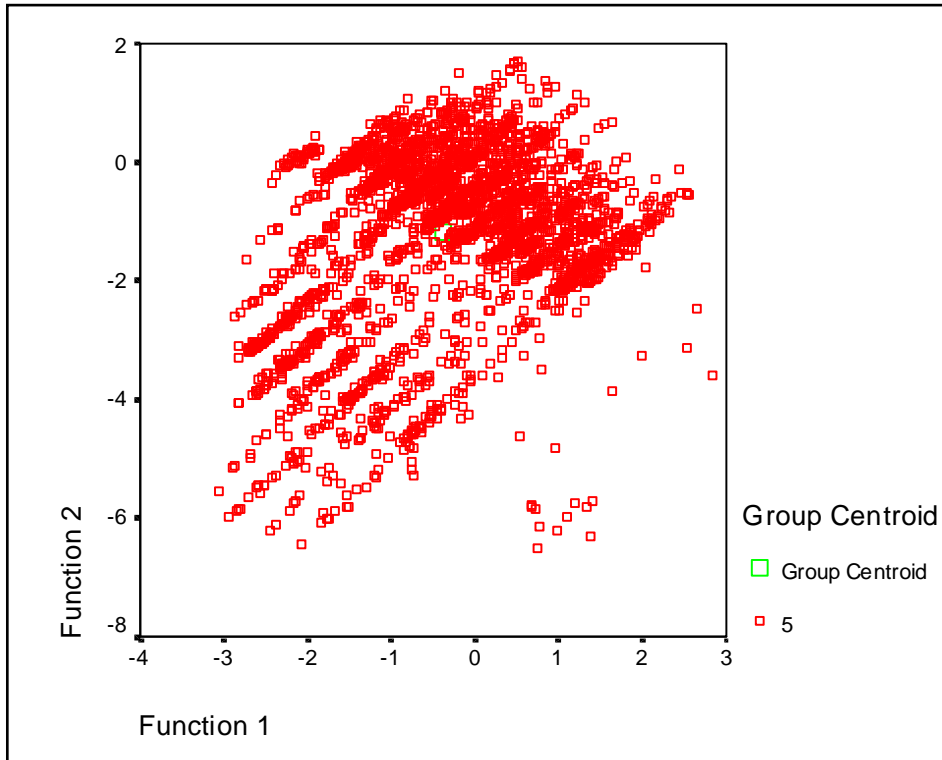
### Canonical discriminant function plot – QOL 3 (OHS 1996)



### Canonical discriminant function plot – QOL 4 (OHS 1996)



Canonical discriminant function plot – QOL 5 (OHS 1996)





## APPENDIX J: OCTOBER HOUSEHOLD SURVEY 1999: METADATA

### OCTOBER HOUSEHOLD SURVEY 1999: METADATA

#### GENERAL NOTES

The October household survey questionnaire consists of a number of sections. The data from the different sections is recorded in separate files as the sections refer to different entities or differ in their coverage. The files are flat, ASCII, fixed field files, with one line of given length per record. This format was chosen so as to make the data usable with as many programmes as possible, and thus accessible to as wide a range of people as possible.

The sections, and the corresponding files from which they are mainly drawn, are as follows. In addition, each file contains a number of variables from other sections of the questionnaire – and the flap in particular. Most files also contain a number of derived variables.

PERSON: Data from Section 1 and Section 4

BIRTHS: Data from Section 2

CHILDREN: Data from Section 2

WORKER: Data from Section 3

MIGRANT: Data from Section 5

HOUSE: Data from Section 6

FARMING: Data from Section 7

The section on each file contains the following information:

- Nature of records in the file and population covered
- Description of variables

The description of variables contains the following information:

#### **Descriptive name of the variable**

This is a short English description plus the (usually eight-character) variable name in the original file used by Stats SA to construct the ASCII file

**Position of the variable:** The position of the data within the record, recorded in the format (@xxx y.). @xxx indicates that the data begins at position (i.e. column) xxx and y. indicates that it is y digits wide. All data is numeric. All data is right-justified.

**Source:** This is either the question in the questionnaire or, for derived variables, the method of derivation. Derived variables are usually found towards the end of a record.

**Notes:** Specific observations to be noted by users.

**Valid range:** The range of valid values for the variable. For continuous variables this reflects the upper and lower ranges as found in the data.

#### **Not applicable**

Where a variable is not applicable to a particular record, for example where the originating question is skipped, “@” is the standard symbol used to indicate inapplicability. The symbol is repeated to fill the maximum number of columns for the variable concerned.

#### **Missing value**

Where information was not available in respect of a particular field and record, “\*” is the standard symbol used to indicate missing values. The symbol is repeated to fill the maximum number of columns for the variable concerned.

Most questions in the October household questionnaire are pre-coded i.e. there is a set number of choices from which one or more must be selected. For open-ended ‘write-in’ questions, the description will note

that post-coding occurred and explain how this was done. For most variables the coding is apparent from the questionnaire (available elsewhere in the documentation) and is not repeated in the variable description. Where the coding is not apparent, the description either provides the codes or indicates where code lists are to be found.

## Linking files

The data from different files can be linked on the basis of a record identifier. The record identifier is the first field/s in each file. Each record contains a number (UQNR) which constitutes a unique household identifier. All records with a given household identifier, no matter which file they are in, belong to the same household. For individuals, a further two digits constituting the Person number (PERSONNR), when added to the household identifier, creates a unique individual identifier. Again, these can be used to link records from the PERSON and WORK files. The syntax needed to merge information from different files will differ according to the statistical package used.

## Sample Design

A sample of 30 000 households was drawn in 3 000 enumerator areas (EAs) (that is 10 households per enumerator area). A two-stage sampling procedure was applied and the sample was stratified, clustered and selected to meet the requirements of probability sampling. The sample was based on the 1996 Population Census enumerator areas and the estimated number of households from the 1996 Population Census. The sampled population excluded all prisoners in prisons, patients in hospitals, people residing in boarding houses and hotels (whether temporary or semi-permanent). The sample was explicitly stratified by province and area type (urban/rural).

Within each explicit stratum the EAs were stratified by simply arranging them in geographical order by District Council, Magisterial District and, within the magisterial district, by average household income (for formal urban areas and hostels) or EA. The allocated number of EAs was systematically selected with probability proportional to size in each stratum. The measure of size was the estimated number of households in Each EA. A systematic sample of 10 households was drawn.

## Weights

The 1996 population Census was used as a basis for the weighting.

Household weights were calculated by using the reciprocal of the inclusion probabilities. Since the sample selection was done in two stages (i.e. first stage - selection of an EA, second stage - selection of a household in the selected EA):

The inclusion probability of an EA (say  $p_1$ ):

Since this was done with probability proportional to size (size being the number of persons residing in the EA),

$$p_1 = \frac{m_i \cdot A_i}{\sum A_i}$$

$m_i$  - number of EAs in the sample in the  $i$ -th stratum (where stratum is the District Council in a province)

$A_i$  - number of persons residing in the selected EA

$\sum A_i$  - total number of persons in the population in the  $i$ -th stratum

The inclusion probability of the household (say  $p_2$ ):

Since ten (10) households (per EA) were selected systematically,

$$p_2 = \frac{10}{\text{number of households in the selected EA}}$$

Household weight =  $(1/p_1.p_2)$ . Relative scaling was done on this weight. The 1996 Census figures (adjusted for growth) were used as benchmarks..

To calculate the person weight, the data was post-stratified by province, gender and age group (5 year age groups). The 1996 Census figures (adjusted for growth) were used as benchmarks. Relative scaling was also done on this weight to cater for the population group .

**Other important information for users is found in the:**

- Questionnaire file
- Additional code list (occupation, industry, provinces, education)
- Relevant publications
- Web-site

**FLAP AND SECTION 1 AND SECTION 4 (PERSONS) Filename: PERSON**

**NOTES:**

This file contains a record for every member of every household

**FLAP:**

*Unique Number (UQNR)* (@1 13.)  
Unique household identifier (13 digits)

*Person (PERSONNR)* (@14 2.)  
FLAP Column heading  
Valid range: 1-XX

Note 1: The first two variables (fifteen digits) together create a unique person identifier which can be used to link individual information in this file with individual information in other files.

Note 2: If there were more than 10 individuals in a household, a second household questionnaire was completed.

*Gender (B\_GENDER)* (@16 1.)  
FLAP B. Is ... (options provided)  
Valid range: 1-2

*Age (C1\_AGE)* (@17 3.)  
FLAP C. Age in completed years  
Valid range: 000-106

*Year of birth (C2\_YEAR)* (@20 4.)  
FLAP C. Year of birth  
Valid range: 1893-1999

*Population group (D\_RACE)* (@24 1.)  
FLAP D. What population group does ... belong to?  
Valid range: 1-5

*Person present (E\_PRESEN)* (@25 1.)  
FLAP E. Is ... present during the interview?  
Valid range: 1-2

**SECTION 1:**

*Relationship (Q1\_IRELS)* (@26 1.)  
Q1.1 What is ...'s relationship to the head of the household?  
Valid range: 1-9

- Marital status (Q1\_2MARI)* (@27 1.)  
Q1.2 What is ...'s present marital status?  
Valid range: 1-6
- Language (Q1\_3LANG)* (@28 2.)  
Q1.3 Which language does ... speak most often at home?  
Valid range: 00-12
- Highest education level (Q1\_4AHIG)* (@30 2.)  
Q1.4a What is the highest level of education that ... has completed?  
Valid range: 00-22
- Field of study (Q1\_4BSTU)* (@32 2.)  
*Q1.4b In what area of study was the diploma, certificate or degree?*  
Note 1: This question was only asked in respect of members for whom Highest education level was a diploma or degree.  
Note 2: This question was write-in. The responses were postcoded .  
Valid range: 01-15
- 01 Arts
  - 02 Science
  - 03 Law
  - 04 Theology
  - 05 Economics, Commerce and Management
  - 06 Education
  - 07 Medical Sciences
  - 08 Engineering
  - 09 Administration and Clerical
  - 10 Protection
  - 11 Building sciences
  - 12 Technical
  - 13 Computing
  - 14 Veterinary science
  - 15 Other
- Skill training (Q1\_5SKIL)* (@34 1.)  
Q1.5 Has ... been trained in skills that can be used for work, e.g. book-keeping, security guard training, welding, child minding?  
Valid range: 1-3
- Duration of training (Q1\_6TRAI)* (@35 1.)  
Q1.6 The last time ... received this type of training, how long did it last?  
Note: This and the following question were only asked for members who were said to have received skills training.  
Valid range: 1-8
- Field of training (Q1\_7TRAI)* (@36 2.)  
Q1.7 In what field was the training?  
Valid range: 01-13
- Can read (Q1\_8AREA)* (@38 1.)  
Can ... read in at least one language?  
Valid range: 1-2
- Can write (Q1\_8BWRI)* (@39 1.)  
Can ... write in at least one language?

Valid range: 1-2

*Current student (Q1\_9EDU)* (@40 1.)

Q1.9 Which of the following educational institutions, if any, does ... attend?

Valid range: 1-8

*Type of study (Q1\_10STU)* (@41 1.)

Q1.10 Is this full-time or part-time?

Note: This question was only asked for members who were said to attend an educational institution.

Valid range: 1-2

*Pre-school attendance (Q1\_11SCH)* (@42 1.)

Q1.11 Which of the following institutions does ... attend?

Note: This question was only asked in respect of people aged six years or younger.

Valid range: 1-6

*School feeding (Q1\_12FRE)* (@43 1.)

Q1.12 Does ... get free food through the school feeding scheme?

Note: This question was only asked in respect of people aged 15 years or younger.

Valid range: 1-4

*Health card (Q1\_13HEA)* (@44 1.)

Q1.13 Does ... have a Road to Health, immunisation or clinic card?

Note: This question was only asked in respect of people aged 24 months of younger.

Valid range: 1-3

*Health status (Q1\_14HEA)* (@45 1.)

Q1.14 How would you describe ...'s health?

Valid range: 1-5

*Medical aid (Q1\_15MED)* (@46 1.)

Q1.15 Is ... covered by a medical aid or medical benefit scheme or other private health insurance?

Valid range: 1-3

*Health worker past month (Q1\_16AVI)* (@47 1.)

Q1.16a During the past month, did ... go to any health worker such as a nurse, doctor or traditional healer as a result of illness or injury?

Valid range: 1-3

*Type of health worker (Q1\_16BTY)* (@48 1.)

Q1.16b What kind of health worker was it?

Note: This and the following two questions were only asked in respect of persons who were said to have attended a health worker in the past month.

Valid range: 1-9

*Place of consultation (Q1\_17CON)* (@49 2.)

Q1.17 Where did the consultation take place?

Note: If there was more than one consultation, the question was asked in respect of the most recent one.

Valid range: 01-12

*Payment for service (Q1\_18SER)* (@51 1.)

Q1.18 Did ... have to pay for this service?

Valid range: 1-3

*Disability (Q1\_19ADI)* (@52 1.)  
Q1.19a Is ... limited in his/her daily activities (at home, at work or at school) because of a long-term physical or mental condition (lasting six months or more)?  
Valid range: 1-2

*Sight disability (Q1\_19B1D)* (@53 1.)  
*Hearing disability (Q1\_19B2D)* (@54 1.)  
*Communication disability (Q1\_19B3D)* (@55 1.)  
*Movement disability (Q1\_19B4D)* (@56 1.)  
*Standing disability (Q1\_19B5D)* (@57 1.)  
*Grasping disability (Q1\_19B6D)* (@58 1.)  
*Intellectual disability (Q1\_19B7D)* (@59 1.)  
*Emotional disability (Q1\_19B8D)* (@60 1.)  
*Other disability (Q1\_19B9D)* (@61 1.)

Q1.19b Describe the difficulty or difficulties that ... has?

Note: These questions were only asked in respect of people who were said to be limited in their daily activities.

Valid range for Sight disability to Emotional disability: 1-2

Valid range for Other disability: 1

*Water fetching (Q1\_20FET)* (@62 1.)  
Q1.20 In the last seven days, did ... fetch water for home use (not for sale)?  
Valid range: 1-2

*Wood fetching (Q1\_21FET)* (@63 1.)  
Q1.21 In the last seven days, did ... fetch wood/dung for home use as fuel (not for sale)?  
Valid range: 1-2

#### SECTION 4:

*Government old age pension (Q4\_1GOVP)* (@64 1.)  
Q4.1 Old age pension from the government  
Valid range: 1-3

*Retirement benefit (Q4\_2WRKP)* (@65 1.)  
Q4.2 Pension from his/her specific work/retirement benefits  
Valid range: 1-3

*Disability grant(Q4\_3DISS)* (@66 1.)  
Q4.3 Disability grant from government  
Valid range: 1-3

*Compensation Fund (Q4\_4WRKC)* (@67 1.)  
Q4.4 Compensation Fund  
Valid range: 1-3

*State child support (Q4\_5STAT)* (@68 1.)  
Q4.5 State maintenance grant or child support grant  
Valid range: 1-3

*Private maintenance (Q4\_6PRIV)* (@69 1.)  
Q4.6 Private maintenance from parent or former spouse  
Valid range: 1-3

*Care dependency grant (Q4\_7DEPE)* (@70 1.)

Q4.7 Care dependency (single care) grant

Valid range: 1-3

*Foster care grant (Q4\_8FOST)* (@71 1.)

Q4.8 Foster care grant

Valid range: 1-3

*UIF benefit (Q4\_9INSF)* (@72 1.)

Q4.9 Unemployment Insurance Fund

Valid range: 1-3

*Support from outside household (Q4\_10FIN)* (@73 1.)

Q4.10 Remittance/financial support from persons not in the household

Valid range: 1-3

*Gratuities (Q4\_11LUM)* (@74 1.)

Q4.11 Gratuities/other lump sum

Valid range: 1-3

*Other income (Q4\_12AOT)* (@75 1.)

Q4.12 Other sources

Valid range: 1-3

*Total income (Q1.13TOT)* (@76 2.)

Q4.13 What was ...'s total income in the last month, including money from work and all the sources mentioned?

Valid range: 01-11

*Province (PROV)* (@78 1.)

Derived variable: First digit of the unique household number.

Valid range: 1-9

1. Western Cape
2. Eastern Cape
3. Northern Cape
4. Free State
5. KwaZulu-Natal
6. North West
7. Gauteng
8. Mpumalanga
9. Northern Province

*Rural/urban (EATYPE)* (@79 1.)

Valid range: 1-2 : 1=urban; 2=rural

Enumeration area type is a classification of EAs according to (human) settlement. There were two principles guiding the assignment of an EA to a particular class or type. The first one was the EAs specific geographical location. The second principle was the kind of dwellings that were most common within the EA. These two principles led to locational and settlement types as follows:

Urban - EAs within municipal or local authority boundaries. These can be further classified as:

- \* Ordinary town or city area as well as vacant areas. Various formal structures can be found, e.g. houses, blocks of flats and businesses.
- \* Area with mainly informal dwellings (so-called 'squatter areas').

- \* Area with mainly hostels, e.g. mine, factory and municipal hostels.
- \* Area with mainly institutions e.g. prisons and hospitals.

Rural - EAs with population concentrations adjacent to a municipal border (an EA must have one common boundary with the municipal border) and EAs situated in rural areas (not sharing a common boundary with a proclaimed urban municipal area). These can be further classified as:

- \* Semi-town (i.e., a town without a local authority) with predominantly formal dwellings.
- \* Area with mainly informal dwellings.
- \* Area with mainly hostels.
- \* Area with mainly institutions.
- \* Semi-town (i.e. a town without a local authority) with predominantly formal dwellings such as mining, and industrial towns where housing for employees is provided by employers.
- \* Village/settlement without a local authority and which is not situated within a tribal area and with formal and semi-formal dwellings such as houses, huts and rondavels.
- \* Tribal authority area with villages.
- \* Area with mainly informal dwellings.
- \* Area with mainly hostels.
- \* Area with mainly institutions.
- \* Area with farms, agricultural holdings, holiday resorts, agricultural schools and colleges.
- \* Tribal authority area outside of villages.

*Individual weight (WGT4)*

(@80 8.)

Derived variable: Based on projected population estimates for October 1998 by population group, gender, age group and province.

## **SECTION 2 (BIRTHS) Filename: BIRTHS**

### **NOTES:**

This file includes information for all women who have ever given birth. Only live births were recorded, excluding still births and children adopted by the mother.

*Unique Number (UQNR)*

(@1 13.)

Unique household identifier (13 digits)

*Person no (PERSONNR)*

(@14 2.)

FLAP Column heading. The respondent number of the mother.

Valid range: 01-31

Note: The first two variables (fifteen digits) together create a unique person identifier which can be used to link individual information in this file with individual information in other files.

### **SECTION 2:**

*Live births (Q2-1LIVE)*

(@16 2.)

Q2.1 How many children (live births) has ... given birth to in the last 12 months?

Valid range: 1-2

*Children still alive (Q2-2CHIL)*

(@18 2.)

Q2.2 How many of these children are still living?

Valid range: 0-2

*Weight (WGT4)*

(@20 8.)

Derived variable: The weight is the inclusion probability as described in the paragraph "Weights" under "Sample design".

## **SECTION 2 (CHILDREN) Filename: CHILDREN**



**NOTES:**

This file includes information for all children of all women who have ever given birth. Only live births were recorded, excluding still births and children adopted by the mother.

*Unique Number (UQNR)* (@1 13.)  
Unique household identifier (13 digits)

*Person no (PERSONNR)* (@14 2.)  
FLAP Column heading. The respondent number of the mother.  
Valid range: 01-31  
Note: The first two variables (fifteen digits) together create a unique person identifier which can be used to link individual information in this file with individual information in other files.

*Birth order (Q2\_3CHIL)* (@16 2.)  
Q2.3 List of children born in the last 12 months.  
Note 1: The line number, which represents the birth order, was recorded.  
Note 2: UQNR, PERSONNR and this variable together create a unique 17-digit identifier for every birth recorded.  
Valid range: 01-02

*Gender of child (Q2\_4GEND)* (@18 1.)  
Q2.4 Is/was the child a boy or a girl?  
Valid range: 1-2

*Year of birth (Q2\_5YEAR)* (@19 4.)  
*Month of birth (Q2\_5MONT)* (@23 2.)  
*Day of birth (Q2-5DAYB)* (@25 2.)  
Q2.6 In what year, month and day was the child born?  
Valid range:

Year of birth: 1998-1999  
Month of birth: 01-12  
Day of birth: 01-31

*Place born (Q2\_6BIRT)* (@27 1.)  
Q2.6 Where was the child born?  
Valid range: 1-3

*Child alive (Q2\_7STIL)* (@28 1.)  
Q2.7 Is the child still alive?  
Valid range: 1-2

*Child living with household (Q2\_8LIVI)* (@29 1.)  
Q2.8 Is the child currently living with this household?  
Note: This question was only asked in respect of children who were said to be still living.  
Valid range: 1-2

*Year died (Q2\_9YEAR)* (@30 4.)  
*Month died (Q2\_9MONT)* (@34 2.)  
*Day died (Q2\_9DAY)* (@36 2.)  
Q2.13 In what year, month and day did the child die?  
Note: This question was only asked in respect of children who were said to have died.  
Valid range:

Year died: 1998-1999  
Month died: 01-12

Day died: 01-31

*Weight (WGT4)*

(@38 8.)

Derived variable: The weight is the inclusion probability as described in the paragraph “Weights” under “Sample design”.

### SECTION 3 (WORKERS) Filename: WORKER

#### NOTES:

This file contains a record for all individuals aged 15 years or older

*Unique Number (UQNR)*

(@1 13.)

Unique household identifier (13 digits)

*Person no (PERSONNR)*

(@14 2.)

FLAP Column heading

Valid range: 01-31

Note: The first two variables (fifteen digits) together create a unique person identifier which can be used to link individual information in this file with individual information in other files.

*Respondent to questions (Q3\_0RESP)*

(@16 1.)

Q3.0 Who is responding to these questions?

Valid range: 1-2

*Worked past 7 days (Q3\_1WRKP)*

(@17 1.)

Q3.1 During the past seven days, did ... do work for pay, profit, or family gain? For example

- formal work for a salary, wage or profit
- informal work such as making things for sale, selling things or providing a service
- work on a farm or land, whether for a wage or as part of the household’s farming activities
- casual/seasonal work

Valid range: 1-4

*Job although absent (Q3\_2AHAV)*

(@18 1.)

Q3.2a During the past seven days, did ... actually have a full time, part time, or a casual/seasonal job even though he/she was absent from work?

Note: This question was only asked in respect of persons who were said not to have worked in the past seven days.

Valid range: 1-2

*Reason no job (Q3\_2BCAT)*

(@19 1.)

Q3.2b In which of the following categories does ... fall?

Note: This question was only asked in respect of persons who were said not to have a job to return to.

Valid range: 1-8

*Reason absent from work (Q3\_3RSNN)*

(@20 2.)

Q3.3 Why did ...not work during the past seven days?

Note: This question was only asked in respect of persons who were said to have a job to return to.

Valid range: 01-12

*Hours worked (Q3\_4AHOU)*

(@22 3.)

Q3.4a How many hours did ... actually work during the past seven days?

Note: This question and the questions which follow were only asked in respect of persons who were said to have worked in the past 7 days.

Valid range: 001-168

*Hours usually worked (Q3\_4BUSU)*

(@25 3.)

Q3.4b How many hours per week does ... usually work?

Valid range: 001-168

*Like more work (Q3\_5MORE)* (@28 1.)

Q3.5 Would ... like to work more hours?

Valid range: 1-3

*Type of employment (Q3\_6WRKF)* (@29 1.)

Q3.6 Who does ... work for?

Valid range: 1-3

*How many employers (Q3\_7NREM)* (@30 1.)

Q3.7 Does ... work for? (options provided)

Note: This question and those which follow were asked in respect of persons who were working for someone else, whether or not they also worked for themselves.

Valid range: 1-2

*Industry of employee (Q3\_9FIRM)* (@31 3.)

Q3.8 What is the name of ...'s employer (firm, institution or private individual)?

Q3.9 What is the main activity of ...'s employer (firm, institution or private employer)?

Note: These questions were both write-in. The responses were post-coded to three digits on the basis of the International Standard Industrial Classification of all Economic Activities (ISIC) 1993 (see elsewhere in documentation for codes).

Valid range: 010-990

*Occupation of employee (Q3\_10OCC)* (@34 4.)

Q3.10 What kind of work is ... doing at his/her main job?

Note: This question was write-in and post-coded to four digits on the basis of the International Standard Classification of Occupations (ISCO 88) (see elsewhere in documentation for codes).

Valid range: 1110-9390 and 0810-0850

*Employment start year (Q3\_11YEA)* (@38 4.)

*Employment start month (Q3\_11MON)* (@42 2.)

Q3.11 When did ... start working with the employer mentioned above (firm, institution or private individual) State year and month

Valid range:

Employment start year: 1906-1999

Employment start month: 01-12

*Nature of contract (Q3\_12WRK)* (@44 1.)

Q3.12 Is ...'s work (options provided)

Valid range: 1-6

*Written contract (Q3\_13CON)* (@45 1.)

Q3.13 Does ... have any written contract with the employer?

Valid range: 1-3

*Payer (Q3\_14WHO)* (@46 1.)

Q3.14 Who pays ....?

Valid range: 1-5

*Pension contribution (Q3\_15PEN)* (@47 1.)

Q3.15 Does ...'s employer contribute to a medical aid or health insurance scheme?

Valid range: 1-3

*Medical aid contribution (Q3\_16MED)* (@48 1.)

Q3.16 Does ...'s employer contribute to a medical aid or health insurance scheme?

Valid range: 1-3

*Paid leave (Q3\_17PAI)* (@49 1.)

Q3.17 Does ... get any paid leave?

Valid range: 1-3

*Union membership (Q3\_18TRA)* (@50 1.)

Q3.18 Is ... a member of a trade union?

Valid range: 1-3

*Employment sector (Q3\_19EMP)* (@51 1.)

Q3.19 Is this employment in: (options provided)

Valid range: 1-2

*Income of employee (Q3\_20AEM)* (@52 6.)

*Time period of payment (Q3\_20BEM)* (@58 1.)

*Income bracket (Q3\_20CEM)* (@59 2.)

Q3.20 What is ...'s total salary/pay at the main job?

Note 1: This question asked for the actual amount, for the period of payment and in which of 14 brackets the amount fell. The first variables records the amount, the second the period and the third the bracket.

Note 2: The question was write-in for the amount.

Valid range for amount: 000001-920920

Valid range for period: 1-3

Valid range for bracket: 01-15

*Additional work (Q3\_21WRK)* (@61 1.)

Q3.21 In the past seven days, did ...do any work for him/herself, such as making things for sale, selling things or providing a service?

Note: This question was asked in respect of all persons who were said to have worked in the past 7 days.

Valid range: 1-2

*Industry of self-employed (Q3\_22EMP)* (@62 3.)

Q3.22 What is the main activity of ... or his/her business?

Note 1: This and the following questions were only asked in respect of people who were said to have done work for themselves in the past seven days.

Note 2: The question was write-in. Industry was post-coded to three digits on the basis of the International Standard Industrial Classification of all Economic Activities (ISIC) 1993 (see elsewhere in documentation for codes).

Valid range: 010-990

*Occupation of self-employed (Q3\_23EMP)* (@65 4.)

Q3.23 Describe the work ... does/did for him/herself or for his/her business?

Note: This question was write-in. Occupation was post-coded to four digits on the basis of the International Standard Classification of Occupations (ISCO 88).

(see elsewhere in documentation for codes).

Valid range: 1110-9390 and 0810-0850

*Sector (Q3\_24BUS)* (@69 1.)

Q3.24 Now I would like to determine whether ...'s job/business is/was formal (registered) or informal (unregistered)... Do you consider ...'s work/business to be formal or informal?

Note: The ellipsis indicates a paragraph which the interviewer was required to read out, explaining different types of registration and nothing that "Many small businesses do not register at any of the above offices."

Valid range: 1-2

*VAT number (Q3\_25VAT)* (@70 1.)

Q3.25 Does/did ... have a VAT number:

Valid range: 1-3

*Income of self-employed (Q3\_26AEM)* (@71 6.)

*Time period of payment (Q3\_26BSE)* (@77 1.)

*Income bracket (Q3\_26CSE)* (@78 2.)

Note: This question was write-in.

Q3.26 What is/was ...'s total income (before deducting expenses) from his/her own activities/business?

Note: This question asked for the actual amount, for the period of payment and in which of 16 brackets the amount fell. The first variable records the amount, the second records the period and the third records the bracket.

Valid range for amount: 000001-500010

Valid range for period: 1-3

Valid range for bracket: 01-15

*Unpaid employees (Q3\_27ANR)* (@80 3.)

*Paid employees (Q3\_27BNR)* (@83 3.)

Q3.27 How many people are/were working for ... (including unpaid and family workers) during the last month that he/she worked?

Valid range for unpaid employees: 000-011

Valid range for paid employees: 000-600

*Payment method (Q3\_28HOW)* (@86 1.)

Q3.28 How is ... being paid for the service/work that he/she provides or for the product that he/she sells?

Valid range: 1-3

*Acceptance of job (Q3\_29ACC)* (@87 1.)

Q3.29 If a suitable job is offered, will ... accept it?

Note: This and the following questions were only asked in respect of persons who were said not to have worked in the past seven days and did not have a job to return to.

Valid range: 1-3

*When can start work (Q3\_30STA)* (@88 1.)

Q3.30 How soon can ... start work?

Note: This and the following two questions were only asked in respect of persons who were said to be willing to accept a job.

Valid range: 1-5

*Time seeking work (Q3\_31TIM)* (@89 1.)

Q3.31 How long has ... been seeking work?

Valid range: 1-7

*Work seeking first action (Q3\_32AWH)* (@90 2.)

*Work seeking second action (Q3\_32BWH)* (@92 2.)

*Work seeking third action (Q3\_32CWH)* (@94 2.)

Q3.32 In the past four weeks, what has ... done to find work?

Note: Up to three workseeking activities were recorded in respect of any one individual.

Valid range: 01-10

*Odd jobs (Q3\_33ODD)* (@96 1.)

Q3.33 Did ... do any odd jobs during the past seven days?

Valid range: 1-2

*Any previous work (Q3\_34WRK)* (@97 1.)

Q3.34 Has ... ever worked for pay, profit or family gain, for example

- Formal work for a salary, wage or profit

- Informal work such as making things for sale, selling things or providing a service
- Work on a farm or land, whether for a wage or as part of the household's farming activities
- Casual/seasonal work

Valid range: 1-2

*Time since last worked (Q3\_35LST)* (@98 1.)

Q3.35 How long ago was it since ... last worked?

Note: This and the following question were only asked in respect of persons who were said to have worked previously.

Valid range: 1-7

*Duration of last job (Q3\_36WOR)* (@99 1.)

Q3.36 How long did ... work in his/her last job?

Valid range: 1-9

*Reason not worked (Q3\_37NOT)* (@100 2.)

Q3.37 Why did ... not work during the past seven days?

Valid range: 01-11

*Means of support (Q3\_38SUP)* (@102 1.)

Q3.38 How does ... support him/herself?

Valid range: 2-8

*Gender (B\_GENDER)* (@103 1.)

FLAP B. Is ... (options provided)

Valid range: 1-2

*Age (C1\_AGE)* (@104 3.)

FLAP C. Age in completed years

Valid range: 015-106

*Population group (D\_RACE)* (@107 1.)

FLAP D. What population group does ... belong to?

Valid range: 1-5

*Highest education level (Q1\_4AHIG)* (@108 2.)

Q1.10 What is the highest level of education that ... has completed?

**Valid range: 00-22**

*Field of training (Q1\_7TRAI)* (@110 2.)

Q1.7 In what field was the training?

Valid range: 01-13

*Economic sector (INDUST)* (@112 2.)

Derived variable: Derived from Industry of employee or, if this is missing or not applicable, Industry of self-employed.

Valid range: 01-11, 66 and 90

Values:

01=Industry codes 100-199 (Agriculture)

02=Mining codes 200-299 (Mining)

03=Industry codes 300-399 (Manufacturing)

04=Industry codes 400-499 (Utilities)

05=Industry codes 500-599 (Construction)

06=Industry codes 600-699 (Trade)  
 07=Industry codes 700-799 (Transport)  
 08=Industry codes 800-899 (Finance)  
 09=Industry codes 900-999 (Services)  
 10=Industry code 010 (Domestic Services)  
 11=Industry codes 020 and 030 extra-territorial organisations and foreign governments  
 66=Industry codes 060 not elsewhere classified  
 90= Industry code 090 not adequately defined

*Occupation (OCCUP)*

(@114 2.)

Derived variable: Derived from Occupation of employee or, if this is missing or not applicable, Occupation of self-employed.

Valid range: 00-11

Values:

01=Occupation codes 1000-1999 (Managers)  
 02=Occupation codes 2000-2999 (Professionals)  
 03=Occupation codes 3000-3999 (Semi-professionals Technicians)  
 04=Occupation codes 4000-4999 (Clerks)  
 05=Occupation codes 5000-5999 (Salesperson and skilled service workers)  
 06=Occupation codes 6000-6999 (Skilled agricultural workers)  
 07=Occupation codes 7000-7999 (Artisans)  
 08=Occupation codes 8000-8999 (Operators)  
 09=Occupation codes 9000-9999 excluding code 9131 (Elementary, routine workers)  
 11=Occupation code 9131 (Domestic worker)

**Official employment status (STATUS1)**

(@116 1.)

Derived variable: Derived from a logical series of steps involving Worked past 7 days, Job although absent, Work category, Reason absent from work, Acceptance of job, Time to start work, Work seeking action.

Note: The difference between this and the following variable is that, to qualify as unemployed, a person needs to be willing to accept work within a week and have taken action to find work during the past month. If these conditions are not satisfied, the person is classified as not economically active.

Valid range: 0-2

Values:

1=Employed  
 2=Unemployed  
 0=Not economically active

*Expanded employment status (STATUS2)*

(@117 1.)

Derived variable: Derived from a logical series of steps involving Worked past 7 days, Job although absent, Work category, Reason absent from work, Acceptance of job, Time to start work.

Note: See official employment status

Valid range: 0-2

Values:

1=Employed  
 2=Unemployed  
 0=Not economically active

*Province (PROV)*

(@118 1.)

Derived variable: First digit of unique household identifier.

Valid range: 1-9

1. Western Cape  
 2. Eastern Cape  
 3. Northern Cape

- 4 Free State
- 5 KwaZulu-Natal
- 6 North West
- 7 Gauteng
- 8 Mpumalanga
- 9 Northern Province

*Rural/urban (EATYPE)*

(@119 1.)

Valid range: 1-2 : 1=urban; 2=rural

Enumeration area type is a classification of EAs according to (human) settlement. There were two principles guiding the assignment of an EA to a particular class or type. The first one was the EAs specific geographical location. The second principle was the kind of dwellings that were most common within the EA. These two principles led to locational and settlement types as follows:

Urban - EAs within municipal or local authority boundaries. These can be further classified as:

- \* Ordinary town or city area as well as vacant areas. Various formal structures can be found, e.g. houses, blocks of flats and businesses.
- \* Area with mainly informal dwellings (so-called 'squatter areas').
- \* Area with mainly hostels, e.g. mine, factory and municipal hostels.
- \* Area with mainly institutions e.g. prisons and hospitals.

Rural - EAs with population concentrations adjacent to a municipal border (an EA must have one common boundary with the municipal border) and EAs situated in rural areas (not sharing a common boundary with a proclaimed urban municipal area). These can be further classified as:

- \* Semi-town (i.e., a town without a local authority) with predominantly formal dwellings.
- \* Area with mainly informal dwellings.
- \* Area with mainly hostels.
- \* Area with mainly institutions.
- \* Semi-town (i.e. a town without a local authority) with predominantly formal dwellings such as mining, and industrial towns where housing for employees is provided by employers.
- \* Village/settlement without a local authority and which is not situated within a tribal area and with formal and semi-formal dwellings such as houses, huts and rondavels.
- \* Tribal authority area with villages.
- \* Area with mainly informal dwellings.
- \* Area with mainly hostels.
- \* Area with mainly institutions.
- \* Area with farms, agricultural holdings, holiday resorts, agricultural schools and colleges.
- \* Tribal authority area outside of villages.

*Individual weight (WGT4)*

(@120 8.)

Derived variable: Based on projected population estimates for October 1999 by population group, gender, age group and province.

## **SECTION 5 (MIGRANT WORKERS) Filename: MIGRANT**

### **NOTES:**

This file only includes data for households with response 1=Yes to:

Q5.1 Are there any persons who are regarded as members of this household, but who were away for a month or more because they are migrant workers?

For these households, there is one record for each migrant recorded for the household.

*Unique Number (UQNR)*

(@1 13.)



Unique household identifier (13 digits)

*Migrant no (MIGRANTN)* (@14 1.)

SECTION 5 Column heading

Valid range: 1-9

Note: This variable added to the unique household identifier (UQNR) creates a unique migrant identifier.

### SECTION 5:

*Gender (Q5\_3GEND)* (@15 1.)

Q5.3 Is ... (options provided)

Valid range: 1-2

*Age (Q5\_4AGE)* (@16 3.)

Q5.4 How old is ...?

Valid range: 008-081

*Occupation (Q5\_5OCCU)* (@19 4.)

Q5.5 What type of work is ... doing as a migrant worker?

Note: Note: This question was write-in and post-coded to four digits on the basis of the International Standard Classification of Occupations (ISCO 88).

Valid range: 0810-0850 and 1110-9390

*Industry (Q5\_6INDU)* (@23 3.)

Q5.6 What is the main activity of ...'s firm, institution or private employer?

Valid range: 010 – 990

*Home visits (Q5\_7COME)* (@26 1.)

Q5.7 How often does ... come home?

Valid range: 1-7

*Money for household (Q5\_8BRIN)* (@27 1.)

Q5.8 How often does ... send or bring money to the household?

Valid range: 1-5

*Weight (HHWGT)* (@28 8.)

Derived variable: The weight is the inclusion probability as described in the paragraph “Weights” under “Sample design”

### SECTION 6 (HOUSEHOLDS) Filename: HOUSE

*Unique Number (UQNR)* (@1 13.)

Unique household identifier (13 digits)

*PSU Number (PSUNR)* (@14 7.)

COVER: PSU number

These digits also constitute the first seven digits of the UQNR

*Dwelling Number (DWELLNR)* (@21 4.)

COVER: Dwelling unit number

Valid range: 0001-1465

These digits also constitute the 8<sup>th</sup>-11<sup>th</sup> digits of the UQNR

*Household Number (HHNR)* (@25 2.)

COVER: Household number

Valid range: 01-14

These digits also constitute the 12<sup>th</sup> and 13<sup>th</sup> digits of the UQNR

*Type of dwelling (Q6\_1AMAI)*

(@27 2.)

*Type of dwelling (Q6\_1BOTH)*

(@29 2.)

Q6.1 Indicate the type of main dwelling and other dwelling(s) that the household occupies?

Note: The questionnaire states that more than one type can be marked for “other” dwellings. However, only one “other” type was recorded in the data for each household.

Valid range: 01-11

*Main roof material (Q6\_2AROO)*

(@31 2.)

*Main wall material (Q6\_2BWAL)*

(@33 2.)

Q6.2 What is the main material used for the roof and the walls of the main dwelling?

Valid range: 01-12

*Ownership of dwelling (Q6\_3HHOW)*

(@35 1.)

Q6.3 Is the dwelling (options provided)

Valid range: 1-6

*Number of rooms (Q6\_4ROOM)*

(@36 2.)

Q6.4 What is the total number of rooms in the dwelling(s) that the household occupies?

Note: Rooms excludes bathrooms and toilets.

Valid range: 01-23

*Housing subsidy (Q6\_5SUBS)*

(@38 1.)

Q6.5 Did this household receive a government housing subsidy to obtain this dwelling to any other dwelling?

Valid range: 1-3

*Land grant (Q6\_6LAND)*

(@39 1.)

Q6.5 Did this household receive a government land grant to obtain a plot of land for residence or for farming?

Valid range: 1-3

*Main water source (Q6\_7WATE)*

(@40 2.)

Q6.7 What is this household’s main source of water?

Valid range: 01-12

*Distance from water source (Q6\_8FARW)*

(@42 1.)

Q6.8 How far is the water source from the dwelling?

Note: This question and the following two questions were asked of all households for which the response to the previous question was not 1.

Valid range: 1-6

*Payment for water (Q6\_9PAYW)*

(@43 1.)

Q6.9 Does the household pay for water?

Valid range: 1-2

*Main energy source for cooking (Q6\_10ACO)*

(@44 2.)

*Main energy source for heating (Q6\_10BHE)*

(@46 2.)

*Main energy source for lighting (Q6\_10CLI)* (@48 2.)

Q6.10 What is the main source of energy/fuel for this household?

Note: The questionnaire provided separate columns for recording the main fuel for each of cooking, heating and lighting.

Valid range for cooking: 01-06; 08-11

Valid range for heating: 01-06; 08-11

Valid range for lighting: 01-04, 07, 09-11

*Distance of fuel (Q6\_11FAR)* (@50 1.)

Q6.11 How far is the wood or dung if it has to be fetched?

Note: This question was only addressed to household's whose main source of fuel for cooking and/or heating was wood or animal dung.

Valid range: 1-5

*Toilet (Q6\_12TOI)* (@51 2.)

Q6.12 What type of toilet facility is available for this household?

Note: The first digit of the code is used to indicate whether the toilet is in the dwelling (1), on site (2), or off site (3). The second digit corresponds to the options on the questionnaire. Households with no toilet, or none of the specified types, are indicated by code 36 for no toilet off site.

Valid range:

Toilet in dwelling: 11

Toilet on site: 21-25

Toilet off site: 31-37

*Shared toilet (Q6\_13SHA)* (@53 1.)

Q6.13 Is the toilet facility shared with other households?

Valid range: 1-2

*Distance from toilet (Q6\_14FAR)* (@54 1.)

Q6.14 How far is the nearest toilet facility to which the household has access?

Note: This question was asked if the toilet was not in the dwelling.

Valid range: 1-4

*Removal of bucket toilet (Q6\_15REM)* (@55 1.)

Q6.15 How frequently is it removed?

Note: This question was asked if the household was using a bucket toilet.

Valid range: 1-4

*Refuse disposal (Q6\_16REF)* (@56 1.)

Q6.16 How is the refuse or rubbish of this household disposed of?

Valid range: 1-8

*Street lighting (Q6\_17STR)* (@57 1.)

Q6.17 Do you have any street lighting where you live?

Valid range: 1-2

*Telephone (Q6\_18TEL)* (@58 1.)

Q6.18 Does this household have a telephone, either in the dwelling or regular use of a cellular telephone?

Valid range: 1-2

*Distance from telephone (Q6\_19FAR)* (@59 1.)

Q6.19 How many minutes do you have to travel to the nearest telephone you can use (by your usual means of transport)?

Note: This question was only asked if the household did not have a telephone in the dwelling or regular use of a cellular telephone.

Valid range: 1-6

*Receiving mail (Q6\_20HOW)* (@60 1.)

Q6.20 How does this household receive most of its mail/post?

Valid range: 1-9

*Post office (Q6\_21POS)* (@61 1.)

Q6.21 Is there a post office or post office agent within a 30 minute (2km) walk of this dwelling?

Valid range: 1-2

*Radio (Q6\_22RAD)* (@62 1.)

Q6.22 Does this household have a radio?

Valid range: 1-2

*Television (Q6\_23TEL)* (@63 1.)

Q6.23 Does this household have a television?

Valid range: 1-2

*Motor vehicle (Q6\_24OWN)* (@64 1.)

Q6.24 Does this household own a motor vehicle (car, bakkie, van, station wagon, minibus) which is in running order?

Valid range: 1-2

*Train nearby (Q6\_25AIT)* (@65 1.)

*Bus nearby (Q6\_26A3B)* (@66 1.)

*Minibus nearby (Q6\_26A2T)* (@67 1.)

Q6.25a Are any of the following public transport services within a 15 minute (1 km) walk of this dwelling?

Note: This question was only asked if at least one of the three modes of transport was not within a 15 minute/1 km walk.

Valid range: 1-3

*Train distance (Q6\_25BIT)* (@68 1.)

*Bus distance (Q6\_26B3B)* (@69 1.)

*Minibus distance (Q6\_26B2T)* (@70 1.)

Q6.25b If they are not, are any of them within a 30 minute (2 km) walk of this dwelling?

Valid range: 1-3

*Primary school (Q6\_26PRI)* (@71 1.)

*Secondary school (Q6\_26SEC)* (@72 1.)

*Clinic (Q6\_26CLI)* (@73 1.)

*Shop (Q6\_26SHO)* (@74 1.)

Q6.26 Are any of the following facilities within a 30 minute (2 km) walk of this dwelling?

Valid range: 1-3

*Death (Q6\_27ADE)* (@75 1.)

*Injury (Q6\_27BIN)* (@76 1.)

*Job loss (Q6\_27CLO)* (@77 1.)

*Loss of remittance (Q6\_27DDE)* (@78 1.)

*Loss of grant (Q6\_27EDE)* (@79 1.)

*Abandonment (Q6\_27FDI)* (@80 1.)

*Theft (Q6\_27AGDE)* (@81 1.)

*Bankruptcy (Q6\_27HFA)* (@82 1.)

Q6.27 Has any of the following events or situations occurred in this household over the past twelve months?

Valid range: 1-2

*Sick with AIDS (Q6\_28AID)* (@83 1.)

Q6.28 Is there any member of this household who is sick with AIDS?

Valid range: 1-3

*HIV positive (Q6\_29HIV)* (@84 1.)

Q6.29 Is there any member of this household who you know is HIV positive but is not sick?

Valid range: 1-3

*AIDS death (Q6\_30AID)* (@85 1.)

Q6.30 Is there any member of this household who has died of AIDS?

Valid range: 1-3

*Total expenditure: (Q6\_31TOT)* (@86 2.)

Q6.31 What was the total household expenditure in the last month?

Valid range: 01-10

*Food expenditure: (Q6\_32FOO)* (@88 2.)

Q6.32 What was the household's expenditure on food (excluding non-food groceries) last month? Do not forget expenditures when people eat away from home e.g. at work or in a restaurant.

Valid range: 01-10

*Transport expenditure: (Q6\_33TRA)* (@90 2.)

Q6.33 What was the household's expenditure on public transport (train, bus or minibus taxi) last month?

Valid range: 01-10

*Afford to feed children (Q6\_34NOF)* (@92 1.)

Q6.34 In the past year, was there ever a time when children under 7 years of age went hungry because there was not enough money to buy food?

Note: This question was asked of households which included persons under 7 years of age.

Valid range: 1-2

*Hunger (Q6\_35NOF)* (@93 1.)

Q6.35 In the past year, was there ever a time when (other) member of the household went hungry because there was not enough money to buy food?

Valid range: 1-2

*Total income (Q6\_36AMT)* (@94 2.)

Q6.36 What was the total household income in the last month, including wage, salaries, government grants, private pensions and all other sources of income?

Valid range: 01-10

*Savings account (Q6\_37ASA)* (@96 1.)

*Stokvel savings (Q6\_37BST)* (@97 1.)

*Pension savings (Q6\_37CPE)* (@98 1.)

*Unit trust (Q6\_37DST)* (@99 1.)

*Cash loans (Q6\_37ELO)* (@100 1.)

*Life insurance (Q6\_37FLI)* (@101 1.)

*Other savings (Q6\_37GOT)* (@102 1.)

Q6.37 Does this household, or a household member, own any of the following financial assets?

Valid range: 1-2

|                                     |           |
|-------------------------------------|-----------|
| <i>Family member (Q6_38AFA)</i>     | (@103 1.) |
| <i>Neighbour (Q6_38BNE)</i>         | (@104 1.) |
| <i>Dealer (Q6_38CSH)</i>            | (@105 1.) |
| <i>Cooperative (Q6_38ADCO)</i>      | (@106 1.) |
| <i>Bank (Q6_38ECO)</i>              | (@107 1.) |
| <i>Land Bank (Q6_38FLA)</i>         | (@108 1.) |
| <i>Government agency (Q6_38GGO)</i> | (@109 1.) |
| <i>Stokvel (Q6_38HST)</i>           | (@110 1.) |
| <i>NGO (Q6_38ING)</i>               | (@111 1.) |
| <i>Money lender (Q6_38JMO)</i>      | (@112 1.) |
| <i>Farmer (Q6_38KFA)</i>            | (@113 1.) |
| <i>Other lender (Q6_38LOT)</i>      | (@114 1.) |

Q6.38 Did the household, or a household member, receive cash loans or buy on credit from any of the following in the past 12 months?

Valid range: 1-2

|  |           |
|--|-----------|
| <i>Things compared with previous year (Q6_39LIF)</i> | (@115 1.) |
|--|-----------|

Q6.39 Thinking back, how do you feel about your life now compared to twelve months ago?

Valid range: 1-3

|                                    |           |
|------------------------------------|-----------|
| <i>Say in community (Q6_40COM)</i> | (@116 1.) |
|------------------------------------|-----------|

Q6.40 Do you think you have a say in decisions that affect your community?

Valid range: 1-2

|                                  |           |
|----------------------------------|-----------|
| <i>Say in country (Q6_41COU)</i> | (@117 1.) |
|----------------------------------|-----------|

Q6.41 Do you think you have a say in decisions that affect the country?

Valid range: 1-2

|                                |           |
|--------------------------------|-----------|
| <i>Grow produce (Q6_42GRO)</i> | (@118 1.) |
|--------------------------------|-----------|

Q6.42 Does your household grow any produce, e.g. maize or other crops, cereals, vegetables or fruit, or keep any stock, such as cattle, sheep, goats, horses, even chickens or for own use?

Valid range: 1-2

|  |           |
|--|-----------|
| <i>Member owner (Q6_43ALA)</i>           | (@119 1.) |
| <i>Traditional allocation (Q6_43BLA)</i> | (@120 1.) |
| <i>Allowed by owner (Q6_43CLA)</i>       | (@121 1.) |
| <i>Cash rent (Q6_43DLA)</i>              | (@122 1.) |
| <i>Provide worker (Q6_43ELA)</i>         | (@123 1.) |
| <i>Share cropping (Q6_43FLA)</i>         | (@124 1.) |
| <i>Right through work (Q6_43GLA)</i>     | (@125 1.) |
| <i>Free access (Q6_43HLA)</i>            | (@126 1.) |

Q6.43 What is the relationship between your household and the land or a member of the legal entity that owns the land?

Valid range: 1-2

|                                    |           |
|------------------------------------|-----------|
| <i>Why grow produce (Q6_44WHY)</i> | (@127 1.) |
|------------------------------------|-----------|

Q6.44 Why does your household grow farm produce or keep stock?

Valid range: 1-4

|   |           |
|---|-----------|
| <i>Person who brings the most money into household (Q1_22MOS)</i> | (@128 2.) |
|---|-----------|

Q1.22 Who is the person who usually brings the most money into the household?

Valid range: 01-34

*Total cash value of everything produced (Q7\_7AMOU)*

What was the total cash value in Rand over the past 12 months of everything that this Household produced, whether to eat or to sell? (@130 7.)

*Province (PROV)*

(@137 1.)

Derived variable: First digit of unique household identifier.

Valid range: 1-9

1. Western Cape
2. Eastern Cape
3. Northern Cape
4. Free State
5. KwaZulu-Natal
6. North West
7. Gauteng
8. Mpumalanga
9. Northern Province

*Rural/urban (EATYPE)*

(@138 1.)

Derived variable: Enumeration area types 1-29 recorded as urban and enumeration area types 30-39 coded as rural.

Values: 1=urban; 2=rural

*Population group (D\_RACE)*

(@139 1.)

FLAP D. How would (the person) describe himself/herself?

Note: The value is taken from the data for the Head of the household

Valid range: 1-6

*Individual weight (HHWGT)*

(@140 8.)

Derived variable: Weighted to (growth-adjusted) 1996 population Census on the basis of province and stratum.

**SECTION 7 (FARMING) Filename: FARMING**

**NOTES:**

This file contains a record for every member of each household where the response to Q6.44 was 1-3.

*Unique Number (UQNR)*

(@1 13.)

Unique household identifier (13 digits)

*Person no (PERSONNR)*

(@14 2.)

FLAP Column heading

Valid range: 01-34

Note: The first two variables (fifteen digits) together create a unique person identifier which can be used to link individual information in this file with individual information in other files.

*Farm last week (Q7\_1HELP)*

(@16 1.)

Q7.1 In the past seven days did ... help in growing farm produce or in looking after animals.

Valid range: 1-3

*Large livestock in week (Q7\_2AHEL)*

(@17 1.)

*Small livestock in week (Q7\_2BWEE)*

(@18 1.)

*Milking in week (Q7\_2CWEE)*

(@19 1.)

*Dairy products in week (Q7\_2DWEE)* (@20 1.)  
*Other animal products in week (Q7\_2EWEE)* (@21 1.)  
*Cereals in week (Q7\_2FWEE)* (@22 1.)  
*Vegetables in week (Q7\_2GWEE)* (@23 1.)  
*Fruit in week (Q7\_2HWEE)* (@24 1.)

Q7.2 What did ... help with?

Note: This question was only asked in respect of persons who were said to have done farm work in the past seven days.

Valid range: 1-2

*Hours farming (Q7\_3WEEK)* (@25 3.)

Q7.3 How many hours during the past seven days did ... actually spend on these activities?

Note: This question was only asked in respect of persons who were said to have done any of the eight activities in the previous question.

Valid range: 001-126

*Farm past year (Q7\_4HELP)* (@28 1.)

Q7.4 In the past 12 month did ... help in growing produce or look after animals?

Valid range: 1-3

*Large livestock in year (Q7\_5AYEA)* (@29 1.)

*Small livestock in year (Q7\_5BYEA)* (@30 1.)

*Milking in year (Q7\_5CYEA)* (@31 1.)

*Dairy products in year (Q7\_5DYEA)* (@32 1.)

*Other animal products in year (Q7\_5EYEA)* (@33 1.)

*Cereals in year (Q7\_5FYEA)* (@34 1.)

*Vegetables in year (Q7\_5GYEA)* (@35 1.)

*Fruit in year (Q7\_5HYEA)* (@36 1.)

Q7.2 What did ... help with?

Note: This question was only asked in respect of persons who were said to have done farm work in the past 12 months.

Valid range: 1-2

*Usual hours (Q7\_6YEAR)* (@37 3.)

Q7.6 How many hours per week did ... usually spend on these activities in the past 12 months on average?

Note: This question was only asked in respect of persons who were said to have done at least one of the eight activities in the previous question.

Valid range: 001-168

*Individual weight (WGT4)* (@40 8.)

Derived variable: Based on projected population estimates for October 1999 by population group, gender, age group and province.