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This chapter presents information on the social, economic, and demographic characteristics of the household population, focusing mainly on such background characteristics as age, sex, educational attendance and attainment, place of residence, and socio-economic conditions of households. The information provided is intended to facilitate interpretation of the key demographic, socioeconomic, and health indicators. It is further intended to assist in the assessment of the representativeness of the survey.

One of the background characteristics used throughout this report is an index of socioeconomic status. The economic index used here was recently developed and tested in a large number of countries in relation to inequities in household income, use of health services, and health outcomes (Rutstein et al., 2000). It is an indicator of the level of wealth that is consistent with expenditure and income measures (Rutstein, 1999). The economic index was constructed using household asset data with principal components analysis. The asset information was collected through the Household Questionnaire of the 2003 KDHS and covers information on household ownership of a number of consumer items ranging from a television to a bicycle or car, as well as dwelling characteristics, such as source of drinking water, sanitation facilities, and type of material used for flooring.

Each asset was assigned a weight (factor score) generated through principal components analysis, and the resulting asset scores were standardised in relation to a normal distribution with a mean of zero and standard deviation of one (Gwatkin et al., 2000). Each household was then assigned a score for each asset, and the scores were summed for each household; individuals were ranked according to the total score of the household in which they resided. The sample was then divided into quintiles from one (lowest) to five (highest). A single asset index was developed for the whole sample; separate indices were not prepared for the urban and rural population separately.

2.1 HOUSEHOLD POPULATION BY AGE AND SEX

The 2003 KDHS Household Questionnaire solicited information on key demographic and socioeconomic characteristics; parental survivorship and residence for people age 15 years and under; educational attendance/attainment; and housing characteristics. A household was defined as a person or group of people, related or unrelated to each other, who live together in the same dwelling unit and share a common source of food.

Table 2.1 presents the distribution of the 2003 KDHS household population by five-year age groups, according to sex and urban-rural residence. The household population constitutes 37,128 persons, of which 49 percent are males and 51 percent are females. There are more persons in the younger age groups than in the older groups for both sexes.

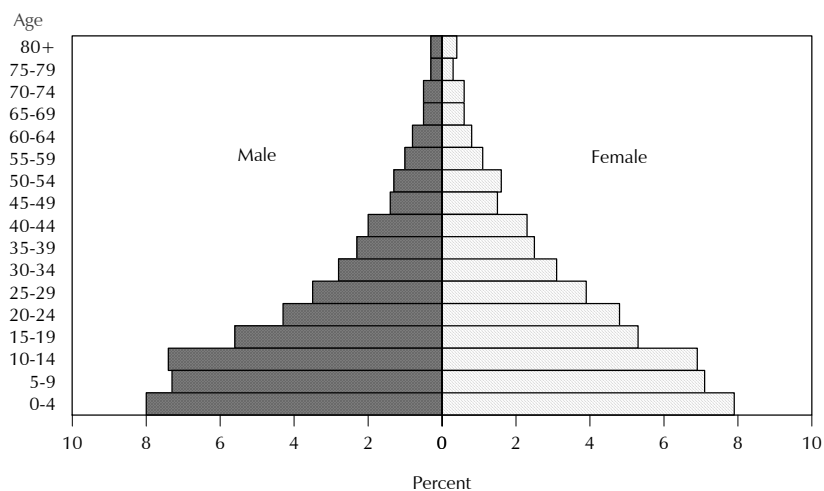
Figure 2.1 shows the age-sex structure of the Kenyan population. The household population age-sex structure is still wide based, as depicted by the population pyramid, despite evidence that the percentage share of the younger population has been falling while the percentage of those age 15-64 has been increasing. The KDHS household population has a median age of 17.5, a slight increase from the previous

Table 2.1 Household population by age, sex, and residence

Percent distribution of the de facto household population by five-year age groups, according to sex and residence, Kenya 2003

Age	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<5	14.6	13.9	14.2	16.6	16.1	16.4	16.2	15.7	15.9
5-9	10.9	11.2	11.0	15.7	14.7	15.2	14.7	14.0	14.4
10-14	9.6	10.4	10.0	16.3	14.4	15.4	15.0	13.6	14.3
15-19	9.2	11.2	10.2	12.0	10.3	11.1	11.4	10.5	10.9
20-24	12.5	15.1	13.8	7.8	8.2	8.0	8.7	9.5	9.1
25-29	11.9	11.2	11.5	5.8	6.9	6.4	7.0	7.8	7.4
30-34	8.6	8.3	8.5	5.1	5.6	5.3	5.8	6.2	6.0
35-39	7.0	6.0	6.5	4.0	4.6	4.3	4.6	4.9	4.7
40-44	4.9	4.4	4.6	3.9	4.5	4.2	4.1	4.4	4.3
45-49	3.7	2.9	3.3	2.6	2.9	2.8	2.9	2.9	2.9
50-54	2.9	2.3	2.6	2.5	3.3	2.9	2.6	3.1	2.9
55-59	1.9	1.3	1.6	2.1	2.4	2.2	2.0	2.2	2.1
60-64	1.0	0.9	1.0	1.7	1.8	1.8	1.6	1.6	1.6
65-69	0.6	0.3	0.4	1.2	1.3	1.2	1.0	1.1	1.1
70-74	0.4	0.2	0.3	1.1	1.3	1.2	1.0	1.1	1.0
75-79	0.1	0.3	0.2	0.7	0.6	0.7	0.6	0.6	0.6
80+	0.2	0.1	0.2	0.8	0.9	0.9	0.7	0.8	0.7
Don't know/missing	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	3,663	3,680	7,344	14,627	15,157	29,784	18,291	18,837	37,128

Figure 2.1 Population Pyramid



KDHS 2003

observed population samples (15.3 in 1993 and 16.9 in 1998). This is an indication that the Kenyan population is aging, most probably because of the decline in fertility in the 1980s and 1990s. The share of the Kenyan population under 15 years of age is 45 percent, those age 15-64 constitute 52 percent, and those age 65 years and above make up 3 percent of the total Kenyan household population. This means that the age dependency ratio in Kenya has declined from 127 in 1989, to 98 in 1998, and to 92 in 2003.¹

2.2 HOUSEHOLD COMPOSITION

Table 2.2 shows the distribution of households by sex of the head of household and by household size, according to rural-urban residence and province. At the national level, women head 32 percent of Kenyan households, a pattern that has remained more or less constant since the 1993 KDHS but is lower than the 37 percent from the 1999 population census (Central Bureau of Statistics, 2002g :11). There are modest differences in female-headed households between urban (26 percent) and rural areas (34 percent). Regional differentials are relatively modest, with Western, Nyanza, and Eastern provinces registering the highest proportions of female-headed households (38, 37, and 36 percent, respectively), while Nairobi Province has the lowest (20 percent).

Table 2.2 Household composition

Percent distribution of households by sex of head of household and by household size, according to residence and province, Kenya 2003

Characteristic	Residence		Province								Total
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	
Sex of head of household											
Male	74.4	66.2	79.9	65.8	71.9	64.2	63.4	72.4	62.2	70.2	68.3
Female	25.6	33.8	20.1	34.2	28.1	35.8	36.6	27.6	37.8	29.8	31.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of usual members											
1	22.6	11.1	22.0	18.0	16.2	11.3	12.0	11.9	12.4	3.7	14.0
2	18.1	9.9	20.2	12.6	12.9	10.6	11.7	10.8	8.7	8.3	12.0
3	16.3	13.8	17.2	17.5	14.6	13.1	14.4	12.9	13.5	10.0	14.4
4	14.9	15.7	15.0	18.4	13.5	15.0	15.9	13.9	17.1	10.8	15.5
5	11.2	15.3	11.3	15.4	11.2	13.9	14.4	15.9	14.4	14.1	14.3
6	7.0	12.4	6.7	8.1	10.5	12.0	12.4	12.4	12.7	16.0	11.1
7	4.4	9.4	4.3	5.2	6.7	10.6	8.9	9.3	9.1	14.5	8.2
8	2.5	5.7	1.6	2.6	5.4	5.7	4.7	6.5	5.9	9.6	4.9
9+	3.0	6.6	1.7	2.2	8.9	7.8	5.6	6.4	6.4	13.1	5.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	2,136	6,405	837	1,350	683	1,313	1,278	1,927	966	187	8,542
Mean size	3.5	4.7	3.3	3.8	4.4	4.7	4.5	4.6	4.6	5.7	4.4

Note: Table is based on de jure members, i.e., usual residents.

Table 2.2 also shows that the mean size of a Kenyan household is 4.4 persons, identical to the mean household size of 4.4 found in the 1999 population census (Central Bureau of Statistics, 2002g: 15). When the northern areas of Kenya are excluded for comparison with previous surveys, the mean household size is 4.3 in 2003, a drop from the 4.8 persons per household reported in the 1993 KDHS, but identical to the 1998 KDHS level of 4.3.

¹ The dependency ratio is defined as the sum of all persons under 15 years or over 64 years of age, divided by the number of persons age 15-64, multiplied by 100.

As expected, urban households have, on average, much smaller household sizes (3.5 persons) than rural households (4.7 persons). Wide variations in the average household sizes are also observed across provinces, with the largest household sizes occurring in North Eastern Province (5.7 persons) and the smallest in Nairobi (3.3 persons).

2.3 EDUCATIONAL ATTAINMENT OF HOUSEHOLD MEMBERS

Tables 2.3.1 and 2.3.2 show the percent distribution of the female and male household population age six years and over by highest level of education attended, according to background characteristics. Twenty-three percent of females and 16 percent of males have no education at all, while about three in five women and men have some primary education or complete primary only. Among males, 22 percent have attained at least some secondary education, compared with only 17 percent of females.

Table 2.3.1 Educational attainment of household population: females

Percent distribution of the de facto female household population age six and over by highest level of education attended or completed, according to background characteristics, Kenya 2003

Background characteristic	No education	Primary incomplete	Primary complete ¹	Secondary incomplete	Secondary complete ²	More than secondary	Don't know/missing	Total	Number	Median number of years
Age										
6-9	41.8	57.9	0.0	0.0	0.0	0.0	0.3	100.0	2,166	0.0
10-14	9.6	88.1	1.2	0.8	0.0	0.0	0.2	100.0	2,566	3.1
15-19	7.8	51.9	18.5	16.7	4.5	0.6	0.0	100.0	1,981	6.5
20-24	8.1	27.4	30.9	9.6	17.4	6.4	0.2	100.0	1,797	7.5
25-29	10.3	29.4	28.6	7.6	14.6	9.2	0.2	100.0	1,462	7.4
30-34	13.0	32.0	22.9	9.2	14.4	7.9	0.5	100.0	1,159	7.2
35-39	14.7	25.3	26.4	11.3	14.3	7.3	0.7	100.0	915	6.5
40-44	25.7	24.5	20.1	9.6	12.0	7.8	0.3	100.0	837	5.9
45-49	33.2	27.5	18.0	7.4	8.1	4.9	0.8	100.0	543	4.0
50-54	40.6	29.4	18.1	2.5	4.5	3.7	1.2	100.0	587	2.4
55-59	57.8	26.5	8.6	1.1	1.5	2.6	1.9	100.0	414	0.0
60-64	73.9	20.9	3.7	0.3	0.5	0.5	0.3	100.0	305	0.0
65+	80.5	16.2	1.8	0.3	0.0	0.2	1.0	100.0	665	0.0
Residence										
Urban	13.9	30.3	20.3	9.0	15.2	10.7	0.5	100.0	3,099	7.1
Rural	25.2	48.2	13.6	5.7	5.0	1.7	0.4	100.0	12,316	3.5
Province										
Nairobi	10.0	22.9	20.4	8.9	21.8	15.4	0.6	100.0	1,157	7.8
Central	12.0	43.1	20.5	8.2	10.8	5.0	0.5	100.0	2,234	6.1
Coast	37.8	36.7	13.0	3.5	5.8	2.7	0.5	100.0	1,222	2.0
Eastern	21.2	49.2	17.1	4.5	5.6	2.3	0.2	100.0	2,632	3.9
Nyanza	18.3	54.9	12.2	8.7	4.0	1.8	0.2	100.0	2,393	4.0
Rift Valley	28.6	43.4	13.8	5.3	5.8	2.6	0.4	100.0	3,594	3.5
Western	18.2	55.1	12.1	7.9	4.2	1.6	1.0	100.0	1,794	4.0
North Eastern	86.8	11.9	0.5	0.3	0.1	0.2	0.2	100.0	389	0.0
Wealth quintile										
Lowest	43.7	44.9	7.6	2.2	1.0	0.1	0.5	100.0	2,833	0.6
Second	25.9	52.5	12.9	5.6	2.3	0.3	0.4	100.0	3,085	3.2
Middle	22.8	51.3	14.5	6.3	4.3	0.5	0.3	100.0	3,205	3.6
Fourth	14.7	45.0	18.6	8.0	9.9	3.2	0.5	100.0	3,161	5.6
Highest	9.5	29.3	20.5	9.5	17.3	13.3	0.6	100.0	3,131	7.4
Total	22.9	44.6	15.0	6.4	7.1	3.5	0.4	100.0	15,415	4.3

Note: Total includes 16 women whose age was not stated.

¹ Completed grade 8 at the primary level

² Completed form 4 at the secondary level

Table 2.3.2 Educational attainment of household population: males

Percent distribution of the de facto male household population age six and over by highest level of education attended or completed, according to background characteristics, Kenya 2003

Background characteristic	No education	Primary incomplete	Primary complete ¹	Secondary incomplete	Secondary complete ²	More than secondary	Don't know/missing	Total	Number	Median number of years
Age										
6-9	45.2	54.3	0.0	0.0	0.0	0.0	0.4	100.0	2,195	0.0
10-14	8.6	89.8	1.0	0.6	0.0	0.0	0.1	100.0	2,741	2.8
15-19	5.7	61.9	13.0	14.9	3.8	0.1	0.6	100.0	2,084	6.0
20-24	5.1	29.3	25.4	10.6	21.4	7.4	0.8	100.0	1,594	7.6
25-29	5.8	26.5	27.2	7.0	22.3	10.9	0.3	100.0	1,287	7.7
30-34	5.8	24.8	24.8	7.8	25.0	11.7	0.2	100.0	1,055	7.9
35-39	8.3	12.7	33.3	11.0	21.8	12.4	0.5	100.0	843	7.6
40-44	11.7	18.1	27.6	6.5	24.8	10.7	0.6	100.0	749	6.8
45-49	14.6	21.3	23.2	8.3	17.8	14.0	0.9	100.0	523	6.7
50-54	17.6	24.2	25.8	8.2	12.0	11.8	0.5	100.0	471	6.4
55-59	18.2	25.5	28.2	9.2	9.7	7.8	1.4	100.0	369	6.3
60-64	34.6	26.6	17.6	5.7	7.2	6.6	1.7	100.0	287	3.0
65+	47.9	34.6	9.9	2.8	2.1	1.6	1.1	100.0	611	0.3
Residence										
Urban	9.6	28.4	18.4	9.0	21.7	12.3	0.6	100.0	3,051	7.5
Rural	17.4	50.9	14.4	5.8	7.6	3.2	0.5	100.0	11,774	4.2
Province										
Nairobi	7.3	21.2	16.0	9.4	28.9	16.4	0.7	100.0	1,212	9.2
Central	6.8	44.6	20.8	8.3	12.4	6.4	0.6	100.0	2,123	6.4
Coast	23.5	39.4	17.9	5.3	10.2	3.0	0.7	100.0	1,190	4.0
Eastern	14.3	53.9	15.7	4.8	7.2	3.6	0.4	100.0	2,484	4.0
Nyanza	10.3	55.0	13.3	8.5	8.9	3.7	0.4	100.0	2,236	4.9
Rift Valley	22.7	44.4	14.4	4.6	9.1	4.3	0.5	100.0	3,465	4.2
Western	11.4	56.8	12.6	7.6	7.2	3.5	1.0	100.0	1,705	4.3
North Eastern	65.2	28.3	2.5	1.1	2.3	0.8	0.0	100.0	410	0.0
Wealth quintile										
Lowest	33.6	49.9	10.1	3.0	2.8	0.4	0.3	100.0	2,781	1.7
Second	16.9	56.4	14.1	5.4	5.2	1.3	0.7	100.0	2,900	3.7
Middle	14.5	53.8	15.5	6.9	7.3	1.4	0.5	100.0	2,910	4.5
Fourth	8.8	46.4	18.4	7.3	12.7	5.8	0.6	100.0	3,084	6.1
Highest	7.3	26.8	17.5	9.1	23.1	15.4	0.7	100.0	3,149	7.8
Total	15.8	46.3	15.2	6.5	10.5	5.1	0.6	100.0	14,825	5.0

Note: Total includes 15 men whose age was not stated.

¹ Completed grade 8 at the primary level

² Completed form 4 at the secondary level

There has been a slight increase in the proportion of children and young adults who have never attended school between the 1998 KDHS and the 2003 KDHS, most notably among those age 6-9 years. Differences are diminished, however, when the northern areas of the country are excluded from the 2003 data so as to be comparable to the preceding surveys. Differences in the youngest age group (6-9) may be due to the addition of a code "0" in the 2003 survey to allow for preschool, such as nursery school and kindergarten. It is possible that children in Standard 1 were erroneously coded as having reached only level "0," instead of level "1" for primary school.

The proportion of the household population age six years and above who have attended school is higher for males than females in most age groups. However, the gender gap in the proportions with no education is narrower in 2003 than in 1998. Whereas about 95 percent of children of both sexes have at least some schooling, only 25 to 30 percent of young adults are able to complete secondary school.

The median number of years of schooling completed by sex has increased slightly between 1998 and 2003 for both sexes when the northern areas of the country are excluded. Educational attainment is higher in urban areas than in rural areas. The median number of years of education is highest in Nairobi for both sexes and lowest in North Eastern Province. Almost two-thirds of males and 87 percent of females age six and over in North Eastern Province have no education.

Table 2.4 shows the percentage of the household population age 6-24 who are currently attending school, by age, sex, and residence. Eighty-nine percent of those age 6-15 are in school, with rural attendance identical to urban attendance and male attendance negligibly higher than female attendance (90 and 89 percent, respectively). However, at age group 16-20, attendance levels have dropped in half, and they are noticeably higher in rural than in urban areas and also considerably higher for males than females.

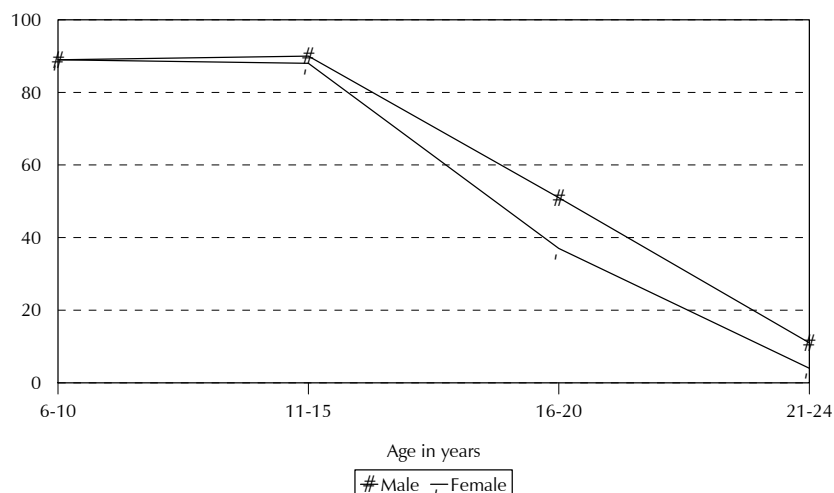
A comparison of data from the 2003 KDHS and the 1998 KDHS shows that there is some improvement in school attendance at all ages from 6 to 24 years. Excluding the north, the proportion of children age 6-15 attending school increased from 85 percent in 1998 to 93 percent in 2003.

Age	Male			Female			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
6-10	89.7	89.3	89.4	93.3	88.4	89.2	91.6	88.9	89.3
11-15	91.7	90.2	90.4	82.5	89.4	88.3	87.0	89.8	89.4
6-15	90.6	89.7	89.9	88.3	88.9	88.8	89.4	89.3	89.3
16-20	35.5	55.1	51.3	23.0	41.5	36.9	28.6	48.5	44.1
21-24	13.6	9.4	10.6	4.8	3.4	3.8	8.7	6.2	6.9

Note: Table includes children attending kindergarten/pre-school.

Figure 2.2 shows that attendance rates for both males and females are at par (89 percent) at age group 6-10. However, girls tend to drop out of school earlier than boys, such that at age group 11-15, 90 percent of boys and 88 percent of girls are attending school. After age 11-15, the gender gap begins to widen, such that by age 21-24, only 11 percent of males and 4 percent of females are in school. The largest drop in attendance for both sexes occurs at age 16-20 (51 and 37 percent for males and females, respectively).

Figure 2.2 Percentage of Males and Females Currently Attending School, by Age



KDHS 2003

Table 2.5 presents net attendance ratios (NARs) and gross attendance ratios (GARs) for the household population by level of schooling and sex, according to background characteristics. The NAR for primary school measures the proportion of children of primary school age who are attending primary school, while the GAR represents the total number of primary school students of any age from 5 to 24 as a percentage of children of primary school age. In the Kenyan context, the levels refer to 6 to 13 years for primary and 14 to 17 years for secondary. The GAR is usually higher than the NAR because the GAR includes participation of those who may be older or younger than the official age range for that level. Students who are over age for a given level of school may have started school late, may have repeated one or more grades in school, or may have dropped out of school and later returned.

The NAR indicates that 79 percent of children of primary school age are attending primary school. There is no gender gap among the children who are attending primary school; the NAR is 79 percent for both boys and girls. NARs for primary school are higher in urban (83 percent) than in rural areas (78 percent) and are highest in the Central (91 percent), Western (86 percent), Nairobi (85 percent) and Eastern (85 percent) provinces. Ratios are lowest in North Eastern Province (36 percent). The GAR indicates that there are children in primary school who are not of primary school age, with ratios of 113 for males and 106 for females.

As expected, both the NAR and GAR are lower at the secondary school level. The NAR indicates that only 13 percent of the secondary school age population are attending secondary school. Net secondary school attendance is higher for females (NAR of 13) than for males (NAR of 12). Nairobi, Central, and Nyanza provinces have the highest NARs at the secondary level of 32, 19, and 14 percent respectively, while North Eastern Province has the lowest (2 percent). The GAR shows that there are many secondary school students who are not of secondary school age. In fact, discrepancies between the NAR and GAR indicate that there are almost as many secondary school students who are either over age or under age as there are students of secondary school age.

Table 2.5 School attendance ratios

Net attendance ratios (NAR) and gross attendance ratios (GAR) for the de jure household population by level of schooling and sex, according to background characteristics, Kenya 2003

Background characteristic	Net attendance ratio ¹			Gross attendance ratio ²			Gender parity index ³
	Male	Female	Total	Male	Female	Total	
PRIMARY SCHOOL							
Residence							
Urban	82.4	82.5	82.5	103.2	99.9	101.5	0.97
Rural	78.0	78.1	78.0	114.2	107.2	110.8	0.94
Province							
Nairobi	85.9	84.1	85.0	101.4	97.0	99.2	0.96
Central	90.6	91.1	90.8	121.9	119.4	120.7	0.98
Coast	71.9	67.2	69.7	98.8	86.0	92.8	0.87
Eastern	85.2	84.2	84.7	125.6	117.4	121.5	0.93
Nyanza	78.5	81.7	80.1	122.3	111.4	116.9	0.91
Rift Valley	70.9	73.9	72.4	101.6	98.3	99.9	0.97
Western	86.5	86.1	86.3	123.4	123.4	123.4	1.00
North Eastern	44.6	26.5	36.3	66.6	34.1	51.7	0.51
Wealth quintile							
Lowest	63.0	59.4	61.3	95.5	84.1	90.1	0.88
Second	79.0	81.0	79.9	116.5	112.2	114.4	0.96
Middle	83.5	84.1	83.8	122.7	116.0	119.3	0.94
Fourth	88.4	87.9	88.1	126.3	119.4	123.0	0.95
Highest	85.5	86.4	86.0	103.0	99.8	101.4	0.97
Total	78.6	78.8	78.7	112.7	106.1	109.5	0.94
SECONDARY SCHOOL							
Residence							
Urban	26.8	21.8	24.2	42.1	29.9	35.7	0.71
Rural	9.1	11.6	10.3	20.9	19.6	20.3	0.94
Province							
Nairobi	35.5	28.9	32.1	52.6	37.7	44.8	0.72
Central	19.0	19.4	19.2	31.2	29.6	30.4	0.95
Coast	8.4	11.0	9.7	17.6	12.7	15.1	0.72
Eastern	5.9	8.1	6.9	15.1	12.8	14.0	0.85
Nyanza	12.2	16.5	14.2	31.2	28.9	30.2	0.93
Rift Valley	10.6	8.6	9.7	18.0	14.6	16.4	0.81
Western	9.8	15.9	12.9	28.6	28.8	28.7	1.00
North Eastern	2.8	1.4	2.2	6.6	1.6	4.4	0.25
Wealth quintile							
Lowest	2.7	5.4	4.0	9.1	8.6	8.9	0.94
Second	6.7	7.9	7.3	20.9	17.3	19.2	0.83
Middle	11.1	11.6	11.4	23.9	19.4	21.8	0.81
Fourth	13.6	19.1	16.2	26.9	29.4	28.1	1.09
Highest	31.9	25.0	28.2	48.1	34.2	40.8	0.71
Total	11.7	13.4	12.5	24.0	21.4	22.7	0.89

¹ The NAR for primary school is the percentage of the primary-school-age (6-13 years) population that is attending primary school. The NAR for secondary school is the percentage of the secondary-school-age (14-17 years) population that is attending secondary school. By definition the NAR cannot exceed 100 percent.

² The GAR for primary school is the total number of primary school students, expressed as a percentage of the official primary-school-age population. The GAR for secondary school is the total number of secondary school students, expressed as a percentage of the official secondary-school-age population. If there are significant numbers of over-age and underage students at a given level of schooling, the GAR can exceed 100 percent.

³ The Gender Parity Index for primary school is the ratio of the primary school GAR for females to the GAR for males. The Gender Parity Index for secondary school is the ratio of the secondary school GAR for females to the GAR for males.

The gender parity index shows the ratio of the female to male GARs. For the primary school level, the gender parity index is close to one (indicating parity between the sexes) for all groups except North Eastern Province, where the GAR for females is half that for males. For the secondary school level, the gender parity index is generally lower, especially for North Eastern Province.

2.4 HOUSING CHARACTERISTICS

Given that there is a strong relationship between household economic conditions and exposure to diseases, information on housing characteristics, such as access to electricity, source of drinking water, sanitary facilities, and flooring and roofing materials, is key to explaining the interrelationships between the social and economic conditions of the household and likely exposure to and prevalence of diseases. Table 2.6 presents the percent distribution of households by housing characteristics, according to residence and province.

The table shows that only 16 percent of Kenyan households have electricity, with large discrepancies by urban-rural residence. Half of urban households have electricity, compared with only 5 percent of rural households. Wide regional variations in the supply of electricity are evident, with Nairobi Province registering the highest proportion of households (71 percent) connected to electricity supply. Western Province is least supplied, with only 2 percent of households having electricity.

The predominant flooring materials used by Kenyan households are earth, mud, dung, and sand, with a share of 62 percent. Cement is the next most common flooring material, with a share of 34 percent. Seventy-one percent of urban households use cement for flooring their houses, while 77 percent of rural households use packed earth. These proportions are almost identical to those from the 1999 population census (Central Bureau of Statistics, 2002g: 30).

About two-thirds of Kenyan households (69 percent) live in dwellings with corrugated iron (*mabati*) roofs, while almost all of the rest (22 percent) have grass or thatched roofs. Urban-rural differences in roofing material are not as strong as those for some of the other housing characteristics, with 73 percent of urban households having corrugated iron roofs, compared with 67 percent of rural households. Data from the 1999 population census show a slightly larger proportion of households with grass or thatched roofs (28 percent) and fewer with iron sheet roofs (64 percent), as compared with the 2003 KDHS (Central Bureau of Statistics, 2002g: 25).

The 2003 KDHS collected data on the number of rooms used by members of the households for sleeping. This information provides a rough measure of the degree and severity of household crowding. Most households in Kenya (77 percent) have 1 to 2 persons sleeping together in a single room, and the mean is 2.6.

For cooking fuel, two-thirds of Kenyan households depend on firewood. Urban households mostly use kerosene (51 percent) or charcoal (26 percent), while 85 percent of rural households use firewood.

The 2003 KDHS collected information on the source of drinking water (Table 2.6). Almost one in four (24 percent) Kenyan households draws its drinking water from either rivers or streams; 21 percent have piped water connected to their dwelling, compound, or plot; and 11 percent use a public tap. Almost one in five households uses wells as a source of drinking water, the majority of which are covered or protected wells. Less than 5 percent of households use other types of water supply sources. A majority of households (53 percent) are within 15 minutes of their water source.

Table 2.6 Housing characteristics

Percent distribution of households by housing characteristics, according to residence and province, Kenya 2003

Housing characteristic	Residence		Province								Total
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	
Electricity											
Yes	50.2	4.6	71.4	19.2	19.3	6.9	5.1	10.5	1.6	3.2	16.0
No	49.8	95.2	28.5	80.4	80.5	93.1	94.9	89.5	98.2	95.9	83.9
Missing	0.0	0.2	0.1	0.4	0.2	0.0	0.0	0.1	0.2	1.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Flooring material											
Earth, mud, dung, sand	18.8	76.5	10.9	60.7	54.7	62.5	73.8	66.3	83.1	93.7	62.1
Wood planks	0.9	0.3	1.7	0.3	0.0	0.5	0.0	0.7	0.0	0.0	0.5
Palm, bamboo	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1
Parquet, polished wood	1.2	0.1	3.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.4
Vinyl, asphalt strips	1.4	0.1	2.3	0.7	0.1	0.1	0.0	0.2	0.1	0.0	0.4
Ceramic tiles	2.1	0.3	4.4	0.8	0.4	0.1	0.3	0.5	0.1	0.1	0.8
Cement	71.4	22.1	70.7	36.2	41.8	35.6	25.8	31.4	16.5	6.0	34.4
Carpet	2.9	0.3	4.1	0.8	2.7	0.3	0.0	0.6	0.1	0.1	0.9
Other	1.2	0.0	2.7	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.3
Missing	0.2	0.2	0.1	0.3	0.1	0.6	0.0	0.0	0.1	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Roofing material											
Grass, thatch, makuti	4.0	28.4	0.1	2.7	39.4	18.4	30.0	24.7	34.1	89.6	22.3
Tin cans	0.3	0.4	0.7	1.1	0.3	0.2	0.0	0.3	0.0	0.0	0.4
Corrugated iron (mabati)	73.3	67.1	56.2	92.0	52.3	78.1	68.2	64.7	65.2	9.8	68.6
Asbestos sheets	3.4	0.7	4.2	0.7	2.8	2.2	0.5	0.5	0.5	0.2	1.3
Concrete	12.6	0.6	26.2	1.0	4.0	0.3	0.3	2.0	0.0	0.2	3.6
Tiles	5.9	0.6	12.2	2.2	1.3	0.3	0.7	0.4	0.0	0.1	1.9
Other	0.5	2.1	0.2	0.0	0.0	0.2	0.2	7.3	0.0	0.0	1.7
Missing	0.2	0.2	0.1	0.3	0.1	0.5	0.0	0.1	0.2	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Persons per sleeping room											
1-2 persons	64.1	60.8	65.7	80.4	60.0	67.3	63.4	46.0	62.7	16.1	61.6
3-4 persons	27.3	26.4	26.9	15.6	28.8	24.5	28.4	31.9	29.9	28.7	26.6
5-6 persons	6.9	8.6	6.2	3.3	8.1	5.5	6.3	14.9	5.9	27.9	8.2
7+ persons	1.7	4.2	1.1	0.8	3.1	2.6	2.0	7.1	1.6	27.3	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean number	2.4	2.7	2.3	1.9	2.6	2.4	2.5	3.2	2.5	5.0	2.6
Type of cooking fuel											
Electricity	1.0	0.1	1.8	0.2	0.4	0.4	0.1	0.1	0.0	0.0	0.3
LPG, natural gas	10.8	1.1	19.8	4.3	2.4	0.7	1.0	1.5	0.9	0.0	3.5
Biogas	0.3	0.0	0.6	0.0	0.3	0.0	0.0	0.1	0.1	0.0	0.1
Kerosene	50.8	2.8	68.3	14.5	22.5	6.8	4.2	8.8	3.3	0.4	14.8
Coal, lignite	0.2	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Charcoal	25.9	10.2	7.4	14.8	19.1	8.2	15.6	19.7	11.7	9.1	14.2
Firewood, straw	9.4	85.2	0.1	65.1	53.9	83.5	79.0	68.9	83.5	90.2	66.2
Dung	1.6	0.4	1.7	0.8	1.2	0.4	0.1	0.9	0.4	0.2	0.7
Other	0.1	0.1	0.1	0.4	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Continued...

Table 2.6—Continued

Housing characteristic	Residence		Province								Total
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	
Source of drinking water											
Piped into dwelling	19.2	3.8	33.2	11.8	8.1	4.1	0.6	4.5	1.3	0.6	7.6
Piped into compound/plot	30.2	7.8	43.4	19.3	9.7	18.4	2.3	8.2	2.6	1.6	13.4
Public tap	21.8	6.8	15.0	3.5	40.1	9.1	11.7	7.8	3.9	0.1	10.6
Open well in compound/plot	1.8	1.7	0.2	2.2	1.3	0.6	0.7	3.3	2.3	3.8	1.7
Open public well	4.1	6.0	0.1	3.5	9.7	6.6	5.5	6.3	3.5	25.0	5.5
Covered well in compound/plot	3.3	5.9	0.3	8.3	0.9	1.6	1.2	13.0	4.1	1.4	5.3
Covered public well	2.6	7.5	0.1	4.5	1.8	8.1	9.4	4.8	13.5	6.1	6.3
Spring	1.7	16.9	0.0	6.2	0.9	11.5	33.4	3.2	40.3	0.0	13.1
River, stream	2.5	31.1	0.0	24.8	11.7	29.9	25.0	32.4	26.2	21.1	23.9
Pond, lake	0.0	2.2	0.0	0.1	1.7	0.3	7.6	1.2	0.2	0.4	1.6
Dam	0.7	4.1	0.1	1.7	9.6	4.6	0.3	3.3	0.0	34.1	3.3
Rainwater	0.7	2.5	0.1	7.5	0.4	0.9	1.7	1.3	0.9	1.7	2.1
Bottled water	0.7	0.0	1.3	0.0	0.2	0.0	0.1	0.0	0.2	0.0	0.2
Other	10.6	3.5	6.2	6.4	3.9	4.4	0.5	10.7	1.0	4.1	5.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Time to water source											
Percentage <15 minutes	83.8	43.1	95.9	70.9	63.6	38.7	31.6	50.5	44.6	22.1	53.2
Median time to source	0.0	14.9	0.0	0.7	5.0	24.7	19.7	10.0	14.4	u	9.7
Water availability											
Usually available	70.0	82.0	64.8	85.7	77.3	77.0	90.7	67.7	95.3	67.1	79.0
Several hours per day	10.1	1.6	14.0	1.2	6.7	4.6	3.4	1.2	0.8	2.5	3.7
Once or twice per week	10.0	3.1	12.8	2.7	4.0	8.6	1.9	4.9	0.9	2.8	4.9
Infrequent	9.1	13.1	7.0	10.2	11.7	9.6	3.8	26.2	2.5	27.2	12.1
Drinks bottled water	0.7	0.0	1.3	0.0	0.2	0.0	0.1	0.0	0.2	0.0	0.2
Missing	0.1	0.2	0.2	0.3	0.1	0.3	0.0	0.0	0.3	0.4	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sanitation facility											
Flush toilet	39.0	1.7	66.5	9.5	12.3	4.9	2.1	3.4	1.9	0.3	11.0
Traditional pit toilet	44.2	70.3	26.5	84.3	39.2	74.2	66.1	58.8	87.3	14.3	63.8
Ventilated improved pit latrine	11.7	7.3	2.2	5.5	14.6	8.9	5.6	13.2	7.9	1.4	8.4
No facility, bush, field	3.7	20.4	2.7	0.2	33.5	11.8	26.2	24.1	2.8	80.9	16.2
Other	1.2	0.1	1.6	0.2	0.4	0.1	0.1	0.4	0.0	2.7	0.4
Missing	0.2	0.2	0.4	0.3	0.0	0.2	0.0	0.1	0.1	0.4	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Share toilet with other households											
No facilities	3.7	20.4	2.7	0.2	33.5	11.8	26.2	24.1	2.8	80.9	16.2
No	28.0	47.4	32.8	59.5	27.1	55.3	35.5	36.9	48.2	7.8	42.5
Yes	68.3	32.1	64.4	40.1	39.4	32.9	38.3	39.1	48.9	11.3	41.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Wealth quintile											
Lowest	1.3	21.2	0.0	0.9	22.7	12.3	23.7	22.1	20.3	71.6	16.3
Second	1.4	23.3	0.0	12.7	10.6	20.7	29.6	16.5	30.2	10.8	17.9
Middle	2.6	24.9	0.0	27.7	13.6	27.3	20.1	14.6	27.6	9.3	19.3
Fourth	12.2	22.8	2.9	36.0	15.7	27.2	12.9	22.7	14.2	4.6	20.2
Highest	82.5	7.7	97.1	22.7	37.4	12.4	13.6	24.1	7.7	3.7	26.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Continued...

Table 2.6—Continued

Housing characteristic	Residence		Province								Total
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	
Household owns structure											
Owns	19.3	87.6	10.4	73.3	63.8	85.3	84.6	66.4	89.6	87.3	70.5
Pays rent, lease	76.2	6.7	84.7	20.4	29.5	9.9	14.2	24.7	7.8	4.4	24.1
No rent, with consent of owner	4.3	4.9	4.6	5.7	5.9	4.8	1.2	7.1	2.2	6.3	4.7
No rent, squatting	0.1	0.7	0.1	0.3	0.8	0.1	0.0	1.7	0.1	1.9	0.6
Missing	0.1	0.1	0.2	0.3	0.1	0.0	0.0	0.1	0.1	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Household owns land on which structure sits											
Owns	15.6	80.5	8.3	58.1	54.5	78.6	83.9	60.0	89.3	75.8	64.3
Pays rent, lease	58.4	5.3	49.5	18.7	27.4	9.9	12.1	19.4	6.5	4.4	18.5
No rent with consent of owner	25.4	12.7	42.0	21.5	15.6	11.2	3.9	18.2	3.9	10.7	15.9
No rent, squatting	0.5	1.4	0.1	1.3	2.4	0.1	0.1	2.3	0.2	9.1	1.2
Missing	0.1	0.2	0.1	0.3	0.1	0.2	0.0	0.1	0.2	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
State of repair of dwelling											
Completely dilapidated, shack	2.1	2.1	3.2	0.2	9.1	1.2	1.4	2.0	0.5	4.6	2.1
Needs major repairs	17.3	22.4	17.8	13.9	17.6	19.7	25.5	28.2	13.6	48.1	21.2
Needs no or minor repairs	79.5	72.9	78.7	85.3	69.4	74.3	70.3	67.8	84.9	43.7	74.5
Being repaired	0.5	0.5	0.3	0.1	1.8	0.4	0.4	0.3	0.0	3.6	0.5
Under construction	0.4	2.0	0.1	0.2	1.8	3.8	2.5	1.6	0.7	0.0	1.6
Missing	0.3	0.2	0.1	0.3	0.4	0.6	0.0	0.0	0.2	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
How household disposes of kitchen waste and trash											
Regular collection by gov't.	2.5	0.2	2.9	0.3	2.3	0.2	0.4	0.6	0.1	0.0	0.8
Infrequent collection by gov't.	2.4	0.0	2.8	0.3	1.1	0.3	0.1	0.4	0.2	0.1	0.6
Pays for private collection	23.6	0.4	51.7	1.6	7.8	0.3	0.1	0.7	0.3	0.0	6.2
Composted	12.3	30.5	1.7	48.2	8.8	41.9	24.3	12.6	38.9	6.3	26.0
Dumps, buries, burns in compound	29.1	55.3	10.0	37.5	59.1	42.1	59.0	64.3	56.5	42.6	48.8
Dumps in street, empty plot	24.9	8.3	22.0	7.1	18.6	1.8	15.6	15.6	3.8	49.3	12.4
Other	4.9	5.0	8.4	4.7	2.2	12.7	0.4	5.5	0.0	0.2	5.0
Missing	0.4	0.3	0.5	0.5	0.1	0.6	0.0	0.3	0.2	1.5	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	2,138	6,423	837	1,351	684	1,316	1,282	1,937	967	187	8,561

u = Unknown (not available)

There are marked provincial differentials in the source of drinking water. More than three-quarters of the households in Nairobi have piped water in their dwelling, compound, or plot compared with only 2 to 4 percent of households in Western, Nyanza, and North Eastern provinces.

About 83 percent of the households in Kenya have access to some type of sanitary facility. Two-thirds of households in Kenya have traditional pit toilets, while only 11 percent have flush toilets. Sixteen percent of households have no toilet facilities. As expected, flush toilets are more widely used in urban areas and in Nairobi, although pit toilets are also very common. Traditional pit toilets are the predominant type of toilet in all the provinces, with the exception of Nairobi, where flush toilets are more common, and North Eastern Province, where toilet facilities are rare. The proportion of households with private toilets is almost identical to the proportion with shared toilets.

Interpretation of trends in housing and household characteristics over time is made slightly more difficult by the inclusion of areas in the northern part of Kenya in the 2003 KDHS. Excluding these areas shows that electricity coverage has increased from 15 percent of households in 1998 to 17 percent in 2003. The proportion of households with piped water has remained stable, as have the types of toilets that households have. There are also few notable differences in the types of flooring materials used in Kenya since the 1998 KDHS.

Table 2.6 provides information about household ownership of the structure and the land. Overall, 71 percent of Kenyan households own their own home, while 24 percent pay rent. As expected, in urban areas, renting is more common, with 76 percent of households renting. A similar pattern holds for ownership of the land. The table also shows that most homes in Kenya need only minor repairs or no repairs at all. With regard to trash disposal, almost half of Kenyan households bury or burn their trash themselves, while about one-quarter compost their trash. Urban households are almost equally likely to bury or burn their trash themselves, dump their trash in the street or an empty plot, or pay for private collection.

2.5 HOUSEHOLD DURABLE GOODS

Table 2.7 shows the percentage of households possessing various durable goods by urban-rural residence. This indicator provides a rough measure of the socioeconomic status of households. Of the ten selected durable household goods, radio, bicycle, and television stand out as the three most commonly owned by a household. Seventy-four percent of Kenyan households own a radio, 29 percent own a bicycle, and 19 percent own a television.

There is noticeable urban-rural variation in the proportion of households owning durable goods. Eighty-one percent of households in urban areas have a radio, compared with 71 percent of rural households. Similarly, 33 percent of urban households have a telephone, as opposed to 6 percent of rural households. Overall, 15 percent of urban households and 24 percent of rural households have none of the selected durable goods.

There has been an increase in the percentage of households owning radios, bicycles, and televisions since the 1998 KDHS. Those owning radios went up from 63 percent in 1998 to 76 percent in 2003 (excluding the northern parts of Kenya), while those owning television sets increased from 13 percent in 1998 to 20 percent in 2003. The percentage of households owning bicycles went up from 24 to 30 percent between the 1993 KDHS and the 2003 KDHS.

Durable consumer goods	Residence		Total
	Urban	Rural	
Radio	80.6	71.3	73.6
Television	40.6	12.4	19.4
Telephone/mobile	32.7	6.2	12.8
Refrigerator	13.4	1.2	4.3
Bicycle	17.7	33.1	29.3
Motorcycle	0.9	0.6	0.7
Car/truck	9.6	3.3	4.9
Solar power	1.1	4.0	3.3
None of the above	15.3	24.3	22.1
Number of households	2,138	6,423	8,561