

UWEZO-KENYA

Sampling paper for the Uwezo Kenya National Assessment

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This paper discusses the sampling rationalization for the Uwezo Kenya national assessment. It details the selection process of the 122 districts (out of 158 district nationally) and sampling of the villages and accompanying 600 households per district. The paper further discusses the different approach necessitated in sampling villages in 3 urban districts.

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Introduction

Kenya as a republic had a total eight provinces (8), and several districts, divisions, location and sub-locations administratively. The sub-locations are further divided into smaller units referred to as Villages. This was the situation before the approval of the new constitution which did away with the provinces and gave birth to forty seven (47) Counties but retained districts divisions, locations, sub-locations and constituencies.

Sampling Process

The sampling process comprises several stages:

- Defining the population of concern
- Specifying a sampling frame, a set of items or events possible to measure
- Specifying a sampling method for selecting items or events from the frame
- Determining the sample size
- Implementing the sampling plan
- Sampling and data collecting

Population definition

Successful statistical practice is based on focused problem definition. In sampling, this includes defining the population from which our sample is drawn. For UWEZO Kenya, the districts and the villages were considered as the best entry point for the population.

Sampling frame

In the most straightforward case, such as the sentencing of a batch of material from production (acceptance sampling by lots), it is possible to identify and measure every single item in the population and to include any one of them in our sample. However, in the more general case this is not possible. There is no way to identify all rats in the set of all rats. Where voting is not compulsory, there is no way to identify which people will actually vote at a forthcoming election (in advance of the election).

Not all frames explicitly list population elements. For example, a street map can be used as a frame for a door-to-door survey; although it doesn't show individual houses, we can select streets from the map and then visit all houses on those streets. (One advantage of such a frame is that it would include people who have recently moved and are not yet on the list frames discussed above.)

The sampling frame must be representative of the population and this is a question outside the scope of statistical theory demanding the judgment of experts in the particular subject matter

being studied. All the above frames omit some people who will vote at the next election and contain some people who will not; some frames will contain multiple records for the same person. People not in the frame have no prospect of being sampled. Statistical theory tells us about the uncertainties in extrapolating from a sample to the frame. In extrapolating from frame to population, its role is motivational and suggestive.

To the scientist, however, representative sampling is the only justified procedure for choosing individual objects for use as the basis of generalization, and is therefore usually the only acceptable basis for ascertaining truth.

In defining the frame for UWEZO Kenya care has been taken to ensure the selected areas are, practically, economically, ethically and technically viable. Since there is need to obtain timely results the former frame has not been extended but has been revised from the 72 districts originally used in the first phase to 122 districts. The original districts also had certain changes effected in some of the 72 districts where ten villages were dropped and 10 new villages randomly selected from the remaining villages in the district.

Probability for Uwezo Kenya

A **probability sampling** scheme is one in which every village in the district had a chance (greater than zero) of being selected in the sample, and this probability can be accurately determined. The combination of these traits makes it possible to produce unbiased estimates of population totals, by weighting sampled units according to their probability of selection.

In the above example, not every village had the same probability of selection. What makes it a probability sample is the fact that each village's probability is known. When every element in the population *does* have the same probability of selection, this is known as an 'equal probability of selection' (EPS) design. Such designs are also referred to as 'self-weighting' because all sampled units are given the same weight.

Probability sampling includes: Simple Random Sampling, Systematic Sampling, Stratified Sampling, Probability Proportional to Size Sampling, and Cluster or Multistage Sampling. These various ways of probability sampling have two things in common:

1. Every element has a known nonzero probability of being sampled and
2. Involves random selection at some point.

Sampling methods

Within any of the types of frame identified above, a variety of sampling methods can be employed, individually or in combination. Factors commonly influencing the choice between these designs include:

- Nature and quality of the frame
- Availability of auxiliary information about units on the frame
- Accuracy requirements, and the need to measure accuracy
- Whether detailed analysis of the sample is expected
- Cost/operational concerns

Simple random sampling

In a Simple Random Sample ('SRS') of a given size, all such subsets of the frame are given an equal probability. Each element of the frame thus has an equal probability of selection: the frame is not subdivided or partitioned. Furthermore, any given *pair* of elements has the same chance of selection as any other such pair (and similarly for triples, and so on). This minimizes bias and simplifies analysis of results. In particular, the variance between individual results within the sample is a good indicator of variance in the overall population, which makes it relatively easy to estimate the accuracy of results.

However, SRS can be vulnerable to sampling error because the randomness of the selection may result in a sample that doesn't reflect the makeup of the population.

SRS may also be cumbersome and tedious when sampling from an unusually large target population. In some cases, investigators are interested in research questions specific to subgroups of the population. For example, researchers might be interested in examining whether cognitive ability as a predictor of job performance is equally applicable across racial groups. SRS cannot accommodate the needs of researchers in this situation because it does not provide subsamples of the population. Stratified sampling, which is discussed below, addresses this weakness of SRS.

Simple random sampling is always an EPS design, but not all EPS designs are simple random sampling.

Systematic sampling

Systematic sampling relies on arranging the target population according to some ordering scheme and then selecting elements at regular intervals through that ordered list. Systematic sampling involves a random start and then proceeds with the selection of every k th element from then onwards. In this case, $k = (\text{population size}/\text{sample size})$. It is important that the starting point is not automatically the first in the list, but is instead randomly chosen from within the first to the k th element in the list. A simple example would be to select every 10th name from the telephone directory (an 'every 10th' sample, also referred to as 'sampling with a skip of 10').

As long as the starting point is randomized, systematic sampling is a type of probability sampling. It is easy to implement and the stratification induced can make it efficient, *if* the variable by which the list is ordered is correlated with the variable of interest. 'Every 10th' sampling is especially useful for efficient sampling from databases.

However, systematic sampling is especially vulnerable to periodicities in the list. If periodicity is present and the period is a multiple or factor of the interval used, the sample is especially likely to be *unrepresentative* of the overall population, making the scheme less accurate than simple random sampling.

Another drawback of systematic sampling is that even in scenarios where it is more accurate than SRS, its theoretical properties make it difficult to *quantify* that accuracy. (In the two examples of systematic sampling that are given above, much of the potential sampling error is due to variation between neighbouring houses - but because this method never selects two neighbouring houses, the sample will not give us any information on that variation.)

As described above, systematic sampling is an EPS method, because all elements have the same probability of selection (in the example given, one in ten). It is *not* 'simple random sampling' because different subsets of the same size have different selection probabilities - e.g. the set {4, 14, 24,..., 994} has a one-in-ten probability of selection, but the set {4, 13,24,34,...} has zero probability of selection.

This process was adopted by UWEZO Kenya after the villages have been identified and the boundaries established on the ground with the help of the administrators (the Assistant chief and village elders) on the ground. Since twenty households were to be selected from each village then they were to select every $(N/20)^{\text{th}}$ household where N is the total number of households in the village and 20 is the number of household that are to be covered during the survey.

The Table below shows the districts that have been selected for the next survey. The table gives the population by gender of the targeted districts together with the total number of households in each district. These figures are based on the 2009 Population and Housing Census.

Table01: Districts selected for 2011 National Assessment by population and total households

CODE	District	Males	Females	Total	Households	Select
102	NAIROBI EAST	582,554	561,862	1,144,416	369,866	New
104	WESTLANDS	124,748	122,354	247,102	75,427	New
201	NYANDARUA NORTH	151,511	157,040	308,551	76,597	Old
202	NYANDARUASOUTH	140,644	147,073	287,717	67,282	New
204	NYERI SOUTH	179,604	189,295	368,899	106,095	Old
205	KIRINYAGA	260,630	267,424	528,054	154,220	New
206	MURANGA NORTH	166,522	179,761	346,283	97,701	Old
208	KIAMBU	125,796	127,955	253,751	75,343	New
209	KIKUYU	130,370	135,459	265,829	77,045	Old
210	KIAMBU WEST(LIMURU)	65,193	65,939	131,132	36,542	Old
211	LARI	60,632	63,263	123,895	30,779	Old
212	GITHUNGURI	72,845	74,918	147,763	39,350	New
214	THIKA WEST	109,914	108,630	218,544	72,051	Old
215	RUIRU	120,550	120,457	241,007	75,184	Old
216	GATANGA	55,796	57,298	113,094	30,211	Old
217	GATUNDU	103,722	111,069	214,791	55,716	New
301	MOMBASA	268,038	255,145	523,183	140,535	New
305	MSAMBWENI	142,305	146,088	288,393	59,484	New
306	KILIFI	218,486	237,811	456,297	83,742	Old
307	KALOLENI	120,359	132,565	252,924	42,692	Old
308	MALINDI	196,681	203,833	400,514	73,330	New
309	TANA -RIVER	71,153	72,258	143,411	28,624	Old
310	TANA DELTA	48,700	47,964	96,664	18,790	Old
311	LAMU	53,045	48,494	101,539	22,184	Old
312	TAITA	110,315	106,677	216,992	54,732	Old
313	TAVETA	35,019	32,646	67,665	16,358	Old
401	MARSABIT	23,305	23,197	46,502	10,005	New
404	MOYALE	54,291	49,508	103,799	16,608	Old
405	ISIOLO	50,380	49,796	100,176	22,463	New
408	IMENTI NORTH	129,915	129,032	258,947	73,300	Old
409	IMENTI SOUTH	90,291	89,313	179,604	47,197	Old
410	MERU SOUTH	62,177	65,930	128,107	33,259	Old
412	IGEMBE	238,958	243,798	482,756	99,290	Old
413	TIGANIA	141,177	152,049	293,226	62,620	New
414	THARAKA	62,887	67,211	130,098	27,393	Old
415	EMBU	146,043	150,949	296,992	80,138	New
416	MBEERE	108,260	110,960	219,220	51,545	Old
417	KITUI	214,254	233,359	447,613	94,780	Old
418	MUTOMO	86,170	93,978	180,148	32,896	New
419	MWINGI	115,671	129,310	244,981	50,967	New
420	KYUSO	65,187	74,780	139,967	26,848	Old
422	MWALA	78,942	84,090	163,032	35,593	Old
423	YATTA	132,444	141,075	273,519	60,212	New

424	KANGUNDO	108,232	110,871	219,103	50,822	New
425	MAKUENI	122,443	130,873	253,316	52,004	Old
426	MBOONI	84,788	93,044	177,832	37,302	New
427	KIBWEZI	123,069	125,635	248,704	52,979	Old
502	LAGDERA **	133,164	111,959	2,545,123	37,383	Old
504	IJARA	50,165	42,498	92,663	13,180	Old
506	WAJIR NORTH	73,628	61,877	135,505	17,592	Old
507	WAJIR EAST **	122,083	102,335	224,418	31,103	Old
508	WAJIR WEST	96,619	75,329	171,948	21,375	New
509	MANDERA CENTRAL **	225,579	191,715	417,294	50,226	Old
510	MANDERA EAST **	159,557	129,130	288,687	38,472	New
511	MANDERA WEST **	174,807	144,968	319,775	36,799	New
602	BONDO	76,468	81,054	157,522	37,296	New
603	RARIEDA	64,473	70,085	134,558	31,033	New
605	KISUMU WEST	68,814	76,093	144,907	32,992	Old
606	NYANDO	170,270	180,083	350,353	78,225	New
608	SUBA	105,181	109,282	214,463	45,320	Old
609	RACHUONYO	182,967	199,744	382,711	81,393	Old
610	MIGORI	161,083	174,790	335,873	70,516	Old
611	RONGO	157,335	167,876	325,211	67,895	New
613	KURIA EAST	40,248	41,585	81,833	13,513	Old
614	KISII CENTRAL	175,403	190,342	365,745	81,426	New
615	KISII SOUTH	54,582	60,033	114,615	24,049	Old
616	MASABA	110,136	123,211	233,347	50,786	Old
617	GUCHA	186,260	204,543	390,803	81,576	Old
618	GUCHA SOUTH	76,566	82,483	159,049	31,846	New
620	MANGA	41,678	46,181	87,859	19,295	Old
701	TURKANA CENTRAL **	126,539	128,067	254,606	41,120	New
703	TURKANA SOUTH **	121,022	105,357	226,379	28,437	New
704	WEST POKOT	89,669	91,394	181,063	35,263	Old
705	POKOT NORTH	77,959	78,052	156,011	25,966	Old
706	POKOT CENTRAL	87,199	88,417	175,616	32,548	New
707	SAMBURU CENTRAL	51,525	53,527	105,052	22,820	Old
708	SAMBURU EAST	29,011	30,083	59,094	12,835	Old
709	SAMBURU NORTH	31,471	28,330	59,801	11,699	Old
710	TRANS NZOIA WEST	192,538	194,828	387,366	84,277	New
711	TRANS NZOIA EAST	96,596	98,577	195,173	39,119	Old
712	KWANZA	118,038	118,180	236,218	46,721	New
713	BARINGO CENTRAL	79,912	82,439	162,351	34,938	New
714	BARINGO NORTH	46,228	47,561	93,789	19,734	New
716	KOIBATEK	83,052	83,180	166,232	34,686	Old
718	ELDORET EAST	120,852	120,599	241,451	51,469	Old
719	WARENG	131,910	129,163	261,073	61,866	Old
720	MARAKWET	92,889	94,234	187,123	39,497	Old
721	KEIYO	90,849	92,026	182,875	38,058	Old
722	NANDI NORTH	82,084	82,346	164,430	32,086	Old
723	NANDI CENTRAL	114,393	116,661	231,054	48,359	Old
724	NANDI EAST	62,693	59,766	122,459	28,371	Old

727	LAIKIPIA NORTH	16,928	15,834	32,762	6,733	Old
728	LAIKIPIA EAST	71,648	70,386	142,034	40,676	New
729	LAIKIPIA WEST	110,049	114,382	224,431	55,705	New
730	NAKURU	239,230	234,058	473,288	129,841	New
731	NAKURU NORTH	103,316	108,375	211,691	51,224	Old
732	NAIVASHA	190,082	186,161	376,243	105,318	Old
733	MOLO	271,954	270,149	542,103	123,453	Old
734	NAROK NORTH	132,911	125,633	258,544	55,885	Old
735	NAROK SOUTH	158,947	158,897	317,844	62,412	New
736	TRANS MARA	137,168	137,364	274,532	50,923	Old
738	LOITOKTOK	68,837	68,659	137,496	29,703	Old
739	KERICHO	195,008	189,092	384,100	85,271	Old
741	BURETI	155,186	151,577	306,763	63,656	Old
742	SOTIK	92,782	95,186	187,968	35,936	Old
743	BOMET	194,862	202,242	397,104	75,322	New
744	KAJIADO NORTH	195,955	191,583	387,538	108,358	New
801	KAKAMEGA CENTRAL	145,280	152,114	297,394	65,121	Old
802	KAKAMEGA NORTH	99,716	105,450	205,166	40,635	Old
802	KAKAMEGA SOUTH	49,260	55,409	104,669	23,144	New
807	EMUHAYA	87,136	97,933	185,069	43,030	New
808	HAMISI	70,469	77,790	148,259	32,096	Old
810	BUTERE	115,082	127,333	242,415	54,441	Old
811	BUNGOMA SOUTH	198,713	209,885	408,598	83,295	New
812	BUNGOMA NORTH	155,771	164,529	320,300	61,486	Old
813	BUNGOMA EAST	112,377	117,876	230,253	45,934	New
815	MT. ELGON	86,119	86,258	172,377	32,461	New
816	BUSIA	156,090	171,762	327,852	68,781	Old
817	TESO NORTH	57,418	60,529	117,947	23,432	New
818	SAMIA	44,267	49,233	93,500	19,395	New
819	BUNYALA	31,718	35,005	66,723	15,245	Old
820	TESO SOUTH	66,629	71,295	137,924	27,372	New
	Total	14,398,419	14,613,998	31,312,417	6,477,545	
	Kenya	19,192,458	19,417,639	38,610,097	8,767,954	

Expected Households to be covered by the Survey

The table below (Table 2) shows the expected number of villages expected per district and the total number of villages that will be covered in the survey. At this point it should be noted that Nairobi East, Westlands and Mombasa districts they have been sampled into Formal Villages and Non-formal Villages. In these districts the non-formal villages were coming out predominantly and thus there was need to separate the two types of villages.

Table 02: Expected number of households to be covered in the Survey

No.	District	Villages	Households	Total Households
1	NAIROBI EAST	30	20	600
2	WESTLANDS	30	20	600
3	NYANDARUA NORTH	30	20	600
4	NYANDARUA SOUTH	30	20	600
5	NYERI SOUTH	30	20	600
6	KIRINYAGA	30	20	600
7	MURANGA NORTH	30	20	600
8	KIAMBU	30	20	600
9	KIKUYU	30	20	600
10	KIAMBU WEST(LIMURU)	30	20	600
11	LARI	30	20	600
12	GITHUNGURI	30	20	600
13	THIKA WEST	30	20	600
14	RUIRU	30	20	600
15	GATANGA	30	20	600
16	GATUNDU	30	20	600
17	MOMBASA	30	20	600
18	MSAMBWENI	30	20	600
19	KILIFI	30	20	600
20	KALOLENI	30	20	600
21	MALINDI	30	20	600
22	TANA –RIVER	30	20	600
23	TANA DELTA	30	20	600
24	LAMU	30	20	600
25	TAITA	30	20	600
26	TAVETA	30	20	600
27	MARSABIT	30	20	600
28	MOYALE	30	20	600
29	ISIOLO	30	20	600
30	IMENTI NORTH	30	20	600
31	IMENTI SOUTH	30	20	600
32	MERU SOUTH	30	20	600
33	IGEMBE	30	20	600
34	TIGANIA	30	20	600
35	THARAKA	30	20	600
36	EMBU	30	20	600
37	MBEERE	30	20	600
38	KITUI	30	20	600
39	MUTOMO	30	20	600
40	MWINGI	30	20	600
41	KYUSO	30	20	600
42	MWALA	30	20	600
43	YATTA	30	20	600
44	KANGUNDO	30	20	600

45	MAKUENI	30	20	600
46	MBOONI	30	20	600
47	KIBWEZI	30	20	600
48	LAGDERA	30	20	600
49	IJARA	30	20	600
50	WAJIR NORTH	30	20	600
51	WAJIR EAST	30	20	600
52	WAJIR WEST	30	20	600
53	MANDERA CENTRAL	30	20	600
54	MANDERA EAST	30	20	600
55	MANDERA WEST	30	20	600
56	BONDO	30	20	600
57	RARIEDA	30	20	600
58	KISUMU WEST	30	20	600
59	NYANDO	30	20	600
60	SUBA	30	20	600
61	RACHUONYO	30	20	600
62	MIGORI	30	20	600
63	RONGO	30	20	600
64	KURIA EAST	30	20	600
65	KISII CENTRAL	30	20	600
66	KISII SOUTH	30	20	600
67	MASABA	30	20	600
68	GUCHA	30	20	600
69	GUCHA SOUTH	30	20	600
70	MANGA	30	20	600
71	TURKANA CENTRAL	30	20	600
72	TURKANA SOUTH	30	20	600
73	WEST POKOT	30	20	600
74	POKOT NORTH	30	20	600
75	POKOT CENTRAL	30	20	600
76	SAMBURU CENTRAL	30	20	600
77	SAMBURU EAST	30	20	600
78	SAMBURU NORTH	30	20	600
79	TRANS NZOIA WEST	30	20	600
80	TRANS NZOIA EAST	30	20	600
81	KWANZA	30	20	600
82	BARINGO CENTRAL	30	20	600
83	BARINGO NORTH	30	20	600
84	KOIBATEK	30	20	600
85	ELDORET EAST	30	20	600
86	WARENG	30	20	600
87	MARAKWET	30	20	600
88	KEIYO	30	20	600
89	NANDI NORTH	30	20	600
90	NANDI CENTRAL	30	20	600
91	NANDI EAST	30	20	600
92	LAIKIPIA NORTH	30	20	600

93	LAIKIPIA EAST	30	20	600
94	LAIKIPIA WEST	30	20	600
95	NAKURU	30	20	600
96	NAKURU NORTH	30	20	600
97	NAIVASHA	30	20	600
98	MOLO	30	20	600
99	NAROK NORTH	30	20	600
100	NAROK SOUTH	30	20	600
101	TRANS MARA	30	20	600
102	LOITOKTOK	30	20	600
103	KERICHO	30	20	600
104	BURETI	30	20	600
105	SOTIK	30	20	600
106	BOMET	30	20	600
107	KAJIADO NORTH	30	20	600
108	KAKAMEGA CENTRAL	30	20	600
109	KAKAMEGA NORTH	30	20	600
110	KAKAMEGA SOUTH	30	20	600
111	EMUHAYA	30	20	600
112	HAMISI	30	20	600
113	BUTERE	30	20	600
114	BUNGOMA SOUTH	30	20	600
115	BUNGOMA NORTH	30	20	600
116	BUNGOMA EAST	30	20	600
117	MT. ELGON	30	20	600
118	BUSIA	30	20	600
119	TESO NORTH	30	20	600
120	SAMIA	30	20	600
121	BUNYALA	30	20	600
122	TESO SOUTH	30	20	600
	Total	3,660	2,440	73,200

From the two tables above it can be noted that 73,200 household will be covered from the possible 6,477,545 in the selected districts. This constitutes about 1.13% of the households in the selected 122 districts. When we compare the total households in the selected districts against the total number of households in the country 8,767,954 then the selected districts constitutes 73.9% of the total household in Kenya. The districts selected are 122 against 158 districts that were covered during the 2009 Population and Housing Census. This is 77.23% of the districts in the country as per the last Census.

Table03: Selected districts by gender of population aged 03-16 years

District	Males	Females	Total
KENYA	7,425,725	7,208,549	14,634,274
<i>From Selected District</i>	<i>5,773,125</i>	<i>5,593,191</i>	<i>11,366,316</i>
NAIROBI EAST	140,109	148,488	288,597
WESTLANDS	26,627	27,689	54,316
NYANDARUA NORTH	60,907	58,206	119,113
NYANDARUA SOUTH	58,804	57,258	116,062
NYERI SOUTH	56,135	54,849	110,984
KIRINYAGA	79,335	78,277	157,612
MURANGA NORTH	57,968	56,264	114,232
KIAMBU EAST(KIAMBAA)	34,992	36,041	71,033
KIKUYU	37,303	37,922	75,225
KIAMBU WEST	21,473	21,429	42,902
LARI	22,611	22,185	44,796
GITHUNGURI	24,000	23,559	47,559
THIKA WEST	29,013	29,956	58,969
RUIRU	32,803	33,565	66,368
GATANGA	19,677	18,759	38,436
GATUNDU	38,121	37,172	75,293
MOMBASA	71,675	73,190	144,865
MSAMBWENI	56,609	55,923	112,532
KILIFI	96,001	95,118	191,119
KALOLENI	51,888	51,387	103,275
MALINDI	80,619	79,631	160,250
TANA RIVER	31,144	29,857	61,001
TANA DELTA	21,589	20,526	42,115
LAMU	18,980	18,200	37,180
TAITA	35,901	35,399	71,300
TAVETA	12,523	12,070	24,593
MARSABIT	9,710	9,822	19,532
MOYALE	25,737	23,418	49,155
ISIOLO	19,921	19,456	39,377
IMENTI NORTH	39,115	38,095	77,210
IMENTI SOUTH	27,349	27,061	54,410
MERU SOUTH	21,703	21,784	43,487
IGEMBE	95,246	95,707	190,953
TIGANIA	58,507	58,655	117,162
THARAKA	25,179	25,045	50,224
EMBU	46,823	46,473	93,296

MBEERE	41,538	40,537	82,075
KITUI	91,700	89,333	181,033
MUTOMO	39,855	38,315	78,170
MWINGI	52,793	51,111	103,904
KYUSO	30,915	30,759	61,674
MWALA	32,406	30,726	63,132
YATTA	55,950	53,637	109,587
KANGUNDO	39,531	37,844	77,375
MAKUENI	51,551	50,142	101,693
MBOONI	36,741	35,485	72,226
KIBWEZI	50,939	48,927	99,866
LAGDERA	44,225	34,251	78,476
IJARA	25,767	20,737	46,504
WAJIR NORTH	39,415	31,879	71,294
WAJIR EAST	61,879	49,687	111,566
WAJIR WEST	51,701	38,378	90,079
MANDERA CENTRAL	121,875	101,048	222,923
MANDERA EAST	82,048	63,409	145,457
MANDERA WEST	97,225	78,828	176,053
BONDO	30,434	30,159	60,593
RARIEDA	27,250	26,627	53,877
KISUMU WEST	29,256	28,731	57,987
NYANDO	72,118	70,866	142,984
SUBA	43,860	43,288	87,148
RACHUONYO	81,389	80,040	161,429
MIGORI	68,742	69,036	137,778
RONGO	67,465	67,377	134,842
KURIA EAST	19,014	18,568	37,582
KISII CENTRAL	69,663	69,791	139,454
KISII SOUTH	23,099	23,149	46,248
MASABA	46,829	46,692	93,521
GUCHA	79,491	78,685	158,176
GUCHA SOUTH	32,410	32,027	64,437
MANGA	17,083	16,584	33,667
BORABU	13,812	13,594	27,406
TURKANA CENTRAL	58,705	54,881	113,586
TURKANA SOUTH	58,149	49,111	107,260
WEST POKOT	39,661	38,783	78,444
POKOT NORTH	40,918	37,481	78,399
POKOT CENTRAL	39,873	38,737	78,610
SAMBURU CENTRAL	23,112	22,454	45,566

SAMBURU EAST	13,001	12,632	25,633
SAMBURU NORTH	14,694	13,088	27,782
TRANS NZOIA WEST	76,807	76,867	153,674
TRANS NZOIA EAST	41,924	41,285	83,209
KWANZA	50,528	49,752	100,280
BARINGO	34,590	34,002	68,592
BARINGO NORTH	21,004	20,117	41,121
KOIBATEK	34,028	33,708	67,736
ELDORET EAST	43,914	44,165	88,079
WARENG	45,666	45,567	91,233
MARAKWET	40,281	39,536	79,817
KEYIO	36,737	36,680	73,417
NANDI NORTH	32,501	31,632	64,133
NANDI CENTRAL	44,568	44,437	89,005
NANDI EAST	22,988	23,052	46,040
LAIKIPIA NORTH	7,810	7,118	14,928
LAIKIPIA EAST	24,709	23,831	48,540
LAIKIPIA WEST	43,810	42,943	86,753
NAKURU	78,066	77,315	155,381
NAKURU NORTH	40,566	39,703	80,269
NAIVASHA	64,751	63,493	128,244
MOLO	113,222	108,504	221,726
NAROK NORTH	54,355	51,443	105,798
NAROK SOUTH	70,746	67,599	138,345
TRANS MARA	60,061	58,193	118,254
LOITOKITOK	29,347	27,814	57,161
KERICHO	70,380	69,898	140,278
BURET	60,743	60,311	121,054
SOTIK	38,956	38,565	77,521
BOMET	83,711	82,102	165,813
KAJIADO NORTH	58,867	59,557	118,424
KAKAMEGA CENTRAL	56,868	58,120	114,988
KAKAMEGA SOUTH	20,997	21,309	42,306
KAKAMEGA NORTH	41,950	42,287	84,237
EMUHAYA	36,450	37,332	73,782
HAMISI	29,675	30,276	59,951
MUMIAS	73,826	74,483	148,309
BUTERE	49,753	49,488	99,241
BUNGOMA SOUTH	83,484	85,415	168,899
BUNGOMA NORTH	68,648	68,749	137,397
BUNGOMA EAST	47,989	47,494	95,483

MT. ELGON	37,907	36,439	74,346
BUSIA	69,306	69,720	139,026
TESO NORTH	24,068	24,634	48,702
SAMIA	20,002	19,806	39,808
BUNYALA	13,258	13,116	26,374
TESO SOUTH	29,129	29,484	58,613

From the table above, almost 78% of the populations aged between 03 to 16 years are within the selected districts. *(The number of households within the districts with the above given population is to be tabulated later and forwarded).*