

OBJECTIVE 3: HOUSEHOLD DATA RE-COLLECTION

OVERVIEW

The data re-collection exercise was for the 10% sample of the original data collected for the targeted counties and locations. Data analysis was done at the location level using the methodology described in table 9 above.

The table below summarizes the mean variability scores per county across the 19 variables assessed. In the MLSP Counties, the lowest variability scores were recorded in Taita Taveta county at 15.4% while Narok had the highest variability scores with a mean of 22.9%.

In the HSNP counties, the variability scores were marginally higher, with Garissa County recording a mean variability of 29%. Tana River had the lowest variability scores among the 4 HSNP counties with a mean variability of just under 25%.

Table 13: Mean Variability Scores per County

TOTAL MEAN VARIANCE PER COUNTY	
County	% Mean Variance
MLSP Counties	
Kisumu	19.9
Narok	22.9
Muranga	16.0
Kilifi	20.4
Taita Taveta	15.4
Baringo	19.4
Kisii	16.7
Lamu	19.1
Kwale	21.0
Kitui	21.2
Laikipia	21.7
Migori	22.3
Tharaka Nithi	15.7
West Pokot	19.0
HSNP Counties	
Garissa	29.1
Tana River	24.9
Isiolo	26.0
Samburu	27.4

Below is a discussion of the detailed variability scores for each of the 18 counties

KISUMU COUNTY VARIABILITY ANALYSIS

SAMPLE SIZE

In Kisumu County a total of 13,998 Households were targeted for recollection as part of the Third-Party Quality Assurance exercise. This makes 10% of the total Households registered during the original Household registration process. During the data recollection, a total of 14,158 households were visited, representing approximately 101% of the target. Out of these households, 1,898 households were recorded as “Declined Consents”.

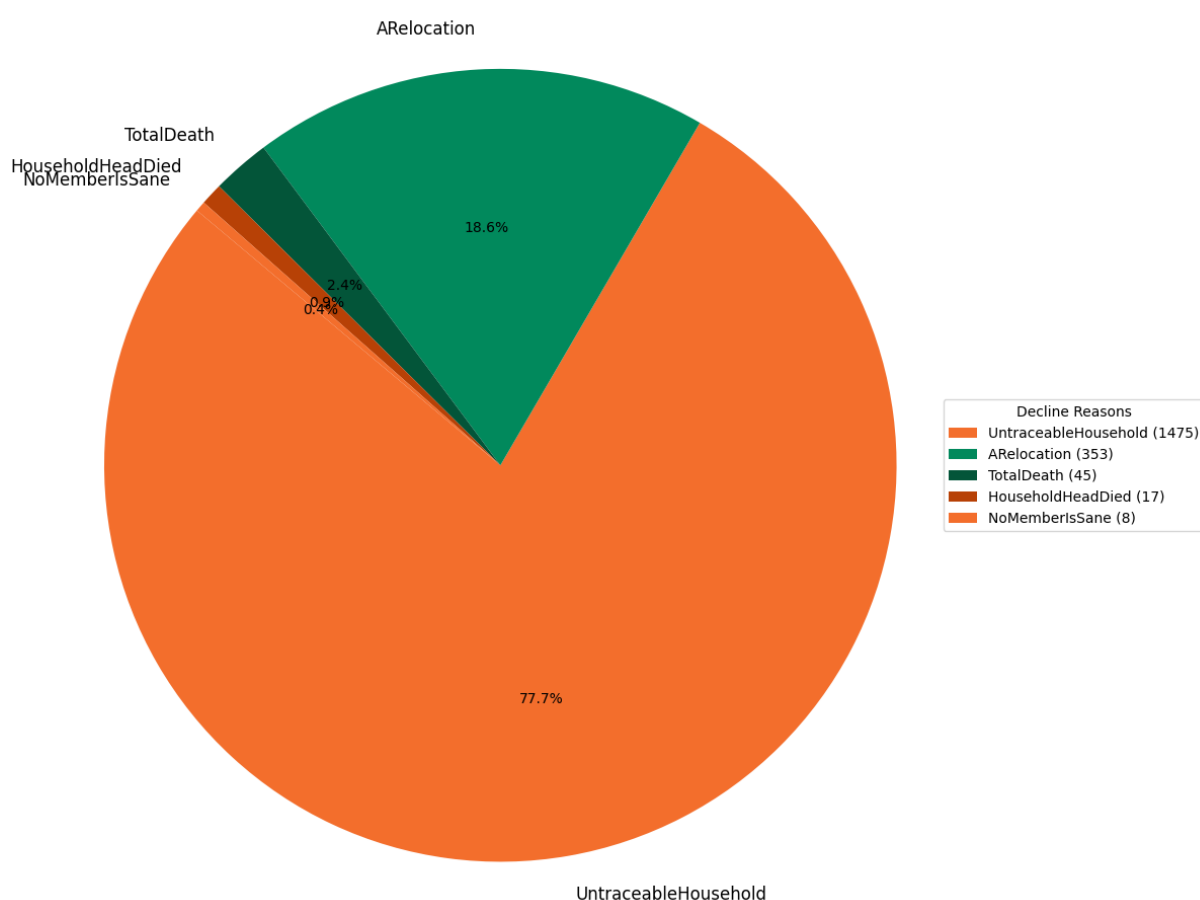


Figure 2: Distribution of declined consents

Untraceable households accounted for the highest number of “Declined Consents” at 77.7% with Town and Kisumu East locations representing the highest distribution. The two locations are in an urban set up with significant informal settlements and hence household mobility would be frequent. Kajulu West location accounts for the highest number of total deaths (9/45). At the subcounty level, Kisumu East (908) and Nyando (736) Sub-Counties had the highest number of the “Declined Consents”. The table below shows the variance computation for the 19 variables considered during the TPQA data analysis. The mean variance for Kisumu County across the 19 variables was at 19.9%.

Table 14: Variability Scores for Kisumu County

Variables	n	%
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Mismatch of HH Head ID Number	1092/12590	8.7%
Mismatch of HH Head Date of Birth	1431/12591	11.4%
Mismatch of Spouse ID Number	274/2184	12.5%
Mismatch of Spouse Date of Birth	364/2188	16.6%
Mismatch of household size	1829/13314	13.7%
Mismatch of household member names	13/6330	0.2%
Mismatch of education levels of HH Head	3956/12591	31.4%
Mismatch of education levels of Spouse	614/2188	28.1%
Mismatch of HHs with orphan members	139/1879	7.4%
Mismatch of relationships to household head	2726/7299	37.3%
Mismatch of number of main rooms	2159/13735	15.7%
Mismatch of floor	3725/13314	28.0%
Mismatch of wall	4538/13314	34.1%
Mismatch of roof	590/13314	4.4%
Mismatch of source of water	7207/13314	54.1%
Mismatch of source of lighting	5631/13314	42.3%
Mismatch of toilet type	1928/13314	14.5%
Mismatch of cooking fuel	2399/13314	18.0%
Mismatch of any disabled	0/23872	0.0%
SUMMARY		19.9%

There was a 100% match in the number of disabled members and only 0.2% variance in the names of household members. The highest variability scores were recorded on the Source of Water and Source of Lighting at 54.1% and 42.3% respectively, followed closely by the relationships to the household head at 37.3%. There was a 100% match in the number of disabled members and only 0.2% variance in the names of household members. The highest variability scores were recorded on the Source of Water and Source of Lighting at 54.1% and 42.3% respectively, followed closely by the relationships to the household head at 37.3%. The mismatched ID Numbers for the HHH were 1002, accounting for 8.7% variance of the sample size considered.

A further test to the degree of mismatch in the ID numbers was conducted using Levenshtein Distance Test and the Jaro-Winkler Distance Algorithm at 1 to 3 match distance and 70%-100% degree of correctness respectively. 65% of near perfect match ID numbers in Levenshtein test and 69% near perfect match ID Numbers in Jaro Winkler test was observed. The results of the two tests suggest that up to 67% of the mismatched ID numbers, which is approximately 671 ID numbers were due to minor typing errors when entering the ID numbers. The remaining 30% would represent a total mismatch which could be partly due to the HH head using different identification documents in the two data collection cycles. The mismatch in HH Spouse ID numbers was subjected to the same distance tests. The results showed that only 19% of the mismatch could be attributed to typing errors. This could be partly explained by fact that the spouse ID is not being a mandatory field during data collection hence there is a tendency not to key in the correct ID numbers. It could also be due to the use of different identification documents during the various data collection cycles.

The Variances in the source of water and lighting could be attributed to the mobile nature of the two indicators over time, due to the economic trends and technological advancement. An analysis of the control questions

shows patterns of movements of various indicators in the households. The movement patterns are different for different locations in the county. For the source of lighting there is notable movement towards electricity and solar from kerosene. For the source of water, the pattern is from other sources of water to piped water in Kisumu East, towards rainwater in Nyando and towards boreholes in Kisumu West. There is a notable trend for education advancement in Kisumu East Sub-County which may partly explain the high variance in the level of education for the spouse and the HHH. The high variance in Walls and floors is explained by a trend of movement towards cement for flooring material and towards mud/cement and bricks/blocks for the walling material. This trend was predominant in Kisumu East Sub-County.

SUB COUNTY VARIANCES

The table below shows the mean variances in the three Sub-Counties in Kisumu. The Kisumu East Sub-County has the highest variance at 20.8% while Kisumu West has the lowest variability score at 17.9%

Table 15: Kisumu Household Variability by Sub- County

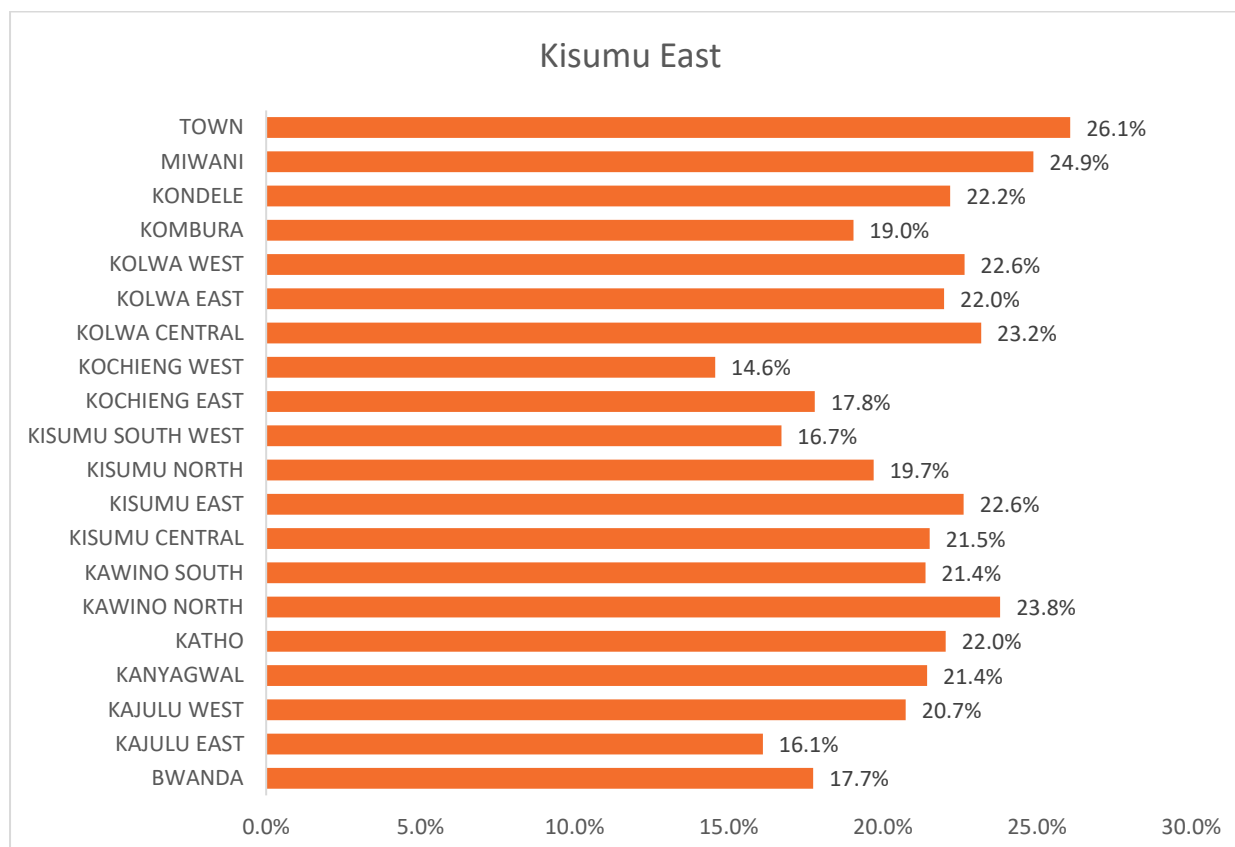
Sub-county	Mean Variances
Kisumu East	20.8%
Kisumu West	17.9%
Nyando	18.3%

Below is a detailed explanation of the observed variances at the location level by each Sub-County in Kisumu. Full data per subcounty is as shown in annex 7

KISUMU EAST SUB-COUNTY

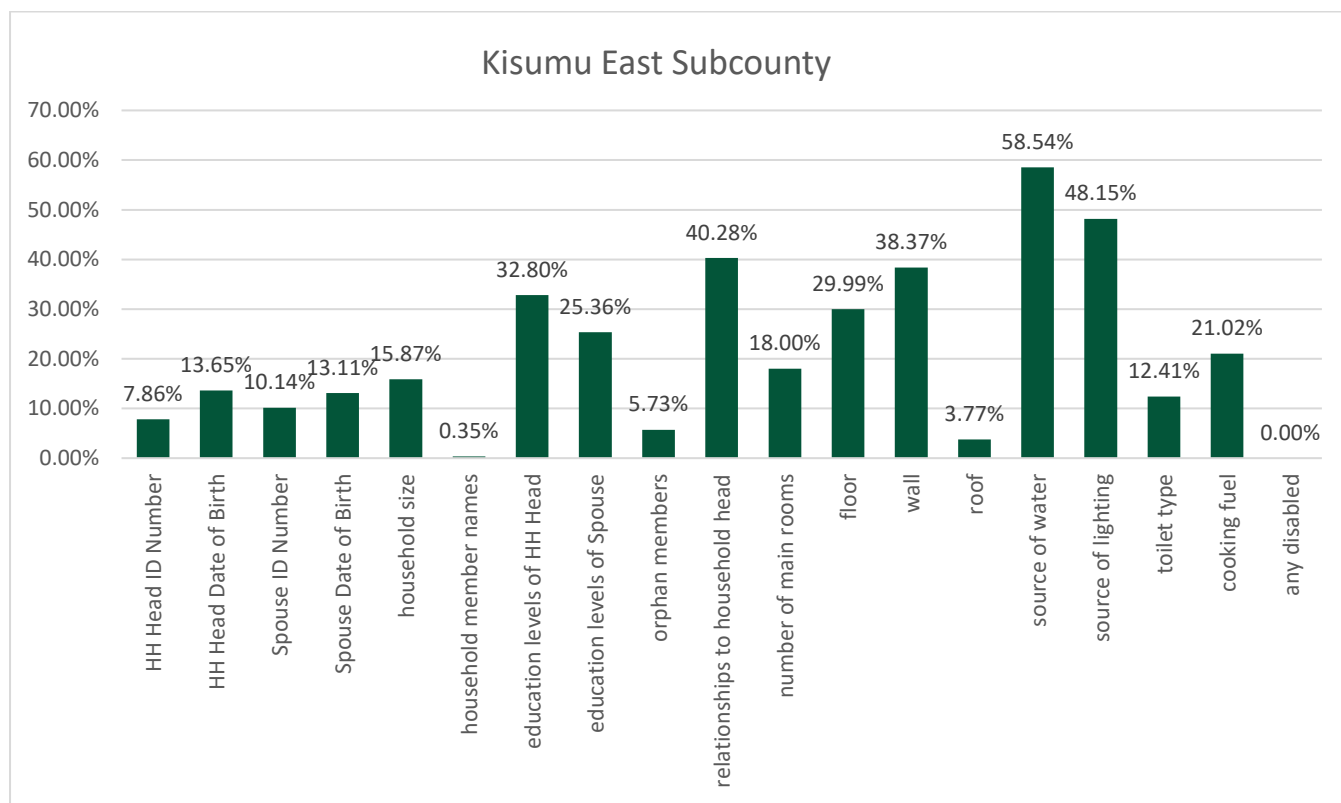
The figure below shows variability scores of the locations in Kisumu East Sub-County. Town location recorded the highest variance at 26.1% while Kochieng West recorded the lowest variability scores at 14.6%.

Figure 3: Kisumu East Sub-County Household Variability



The high variability score observed in Town location could be due to the urban set up where it is expected to have rapid changes within a short period of time due to economic improvement and mobility. This possibly led to the uniform variance in indicators affected by economic improvement e.g. source of water and light, flooring, and walling materials. The figure below shows the variances recorded for each indicator in the Sub-County. The source of water, source of light, relationships to the HHH, level of education, walls and the floor have an above average variability score.

Figure 4: Kisumu East Subcounty Variability by Household Indicators

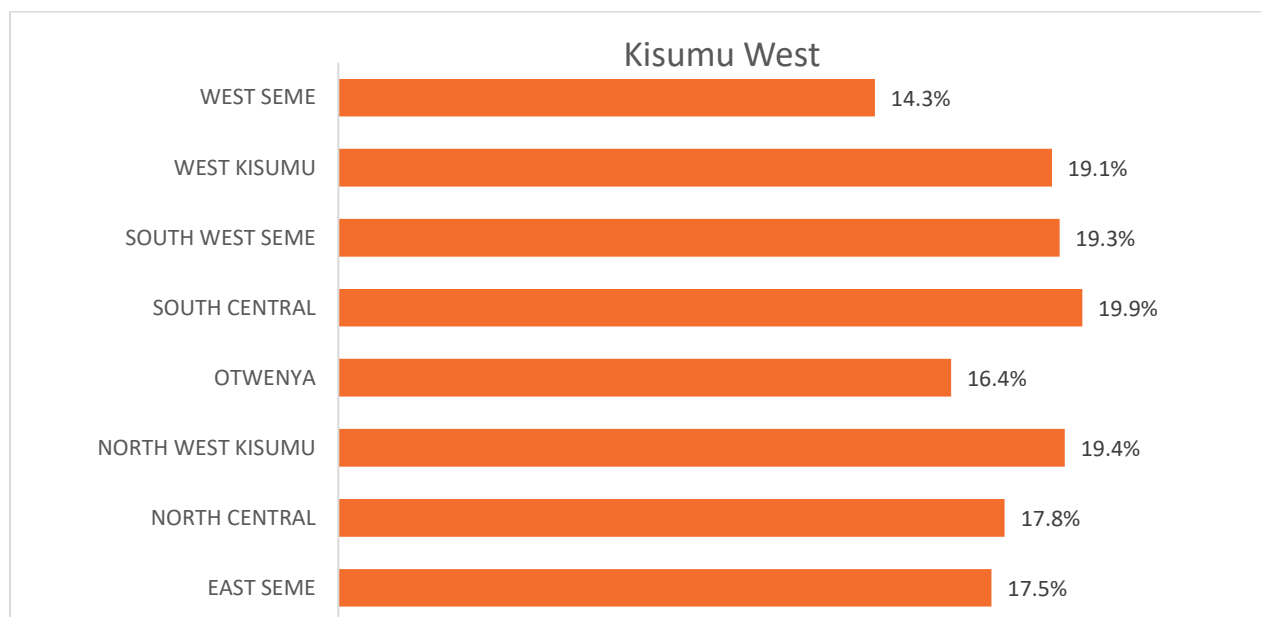


A review of responses to the control questions provided further insights to the variability scores. In Kondele and Kolowa West locations, there were changes in the flooring and the walling materials, recorded with a notable trend towards cement floor and bricks/Blocks walls from mud. For the source of water, the movement is towards piped and borehole water. Kolowa West, Kolowa Central and Town locations recorded high changes in the education levels towards advancement of education by the HHH heads and spouses. The variance in Kolowa West Location was caused by the increase in the number of habitable rooms. For the source of lighting, the movement is towards electricity and solar, possibly because of electrification programs and the access to affordable modern solar lighting devices and technology.

KISUMU WEST SUB COUNTY

The figure below shows variability scores of the locations in Kisumu West Sub-County. The Sub-County mean is below the county mean and the average mean for each of locations in the sub county are close to the Sub-County mean of 17.9%. South Central location had the highest mean at 19.9% and West Seme had the lowest Variance at 14.4%.

Figure 5: Variability Scores by Locations In Kisumu West Sub-County

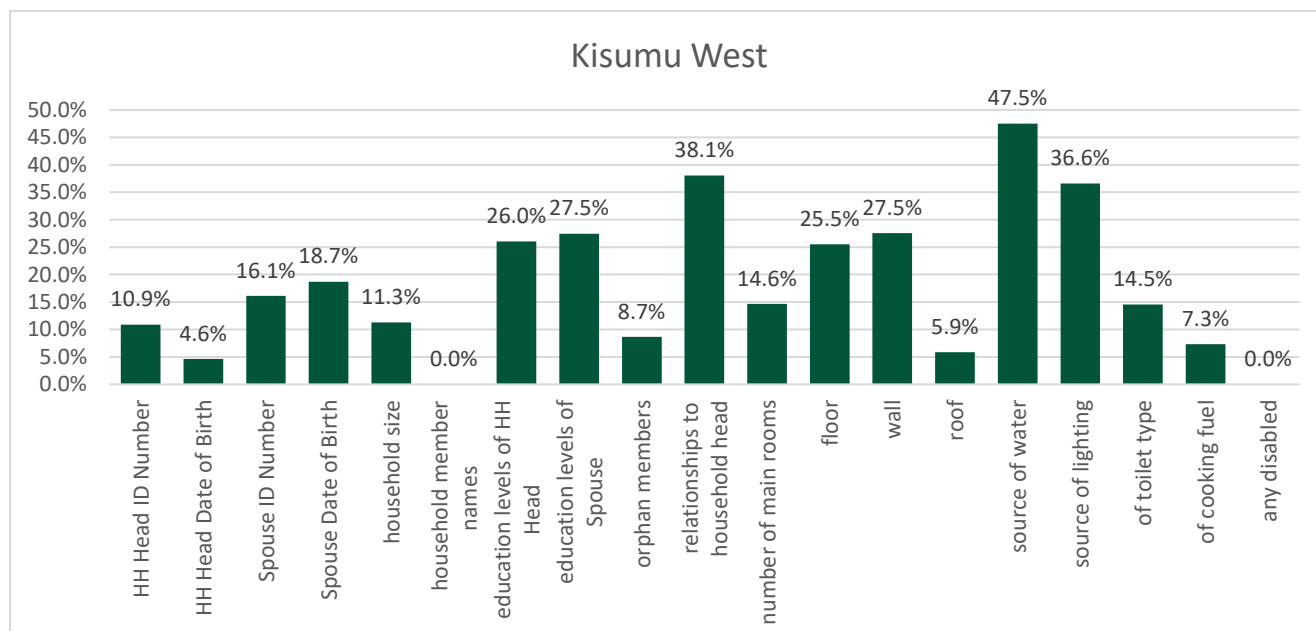


The main contributor to the high variance in South Central Location is the source of water, source of lighting, HHH and Spouse levels of education, HHH relationship, dominant materials in floors and walls.

The variance in Orphans members in a household was high in Northwest Kisumu location where there were notable deaths in the spouses, this also affected the HH size variance.

The figure below shows the variances recorded for each indicator in the Sub-County

Figure 6: Kisumu West Sub-County Variances by Indicator



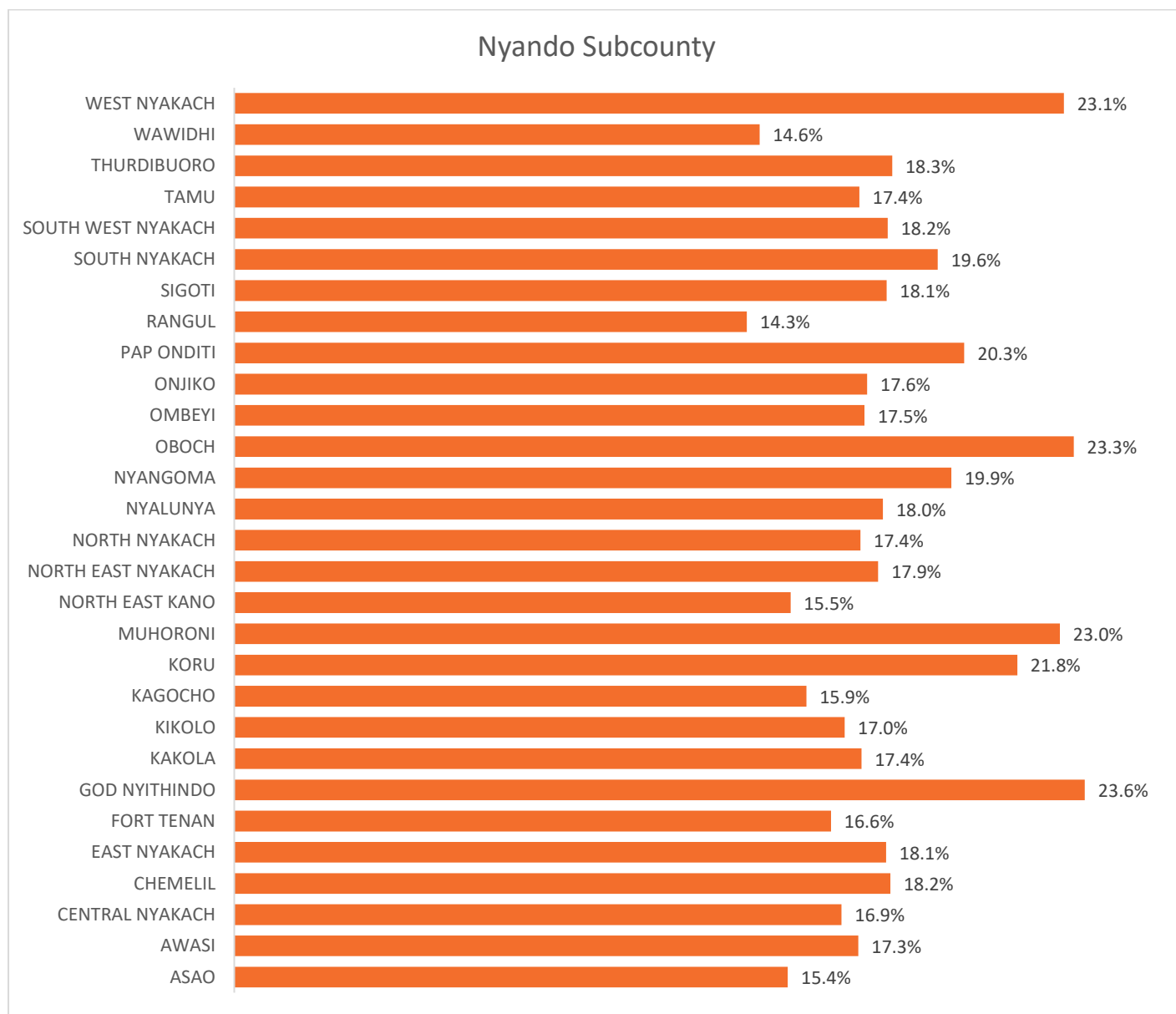
Human Waste disposal was affected by the noted movement from latrine to the Bush in South Central and East Seme locations. The Movement in dominant walling material is from mud/Wood to mud/Cement across all the locations in the Sub-County while that of dominant flooring material is from Earth to Cement across the locations. The high variability scores observed in the Education levels of the HHH, and the Spouse could be attributed to

varying understanding of the question either by the enumerator or the respondent. There are also many options provided to choose from rather than grouped options which could affect the accuracy of the answers given by the respondent in the two interviews. The variance in source of water is caused by the change in the source of water in the HHs, specifically in Otwenya location where the movement was from the river to borehole. Also, in the source of lighting there was a uniform change from tin lamp to solar and few cases of change to electricity. The probable changes in the predictable economic status in the Sub-County could have caused the variances recorded in the analysis.

NYANDO SUB COUNTY

The figure below shows variability scores for the locations in Nyando Sub-County. Nyando Sub-County had a mean variance of 18.3%. God Nyithindo location had the highest variance at 23.6% while the lowest variability score was recorded in Rangul Location at 14.3%.

Figure 7: Nyando Subcounty Variances by Location

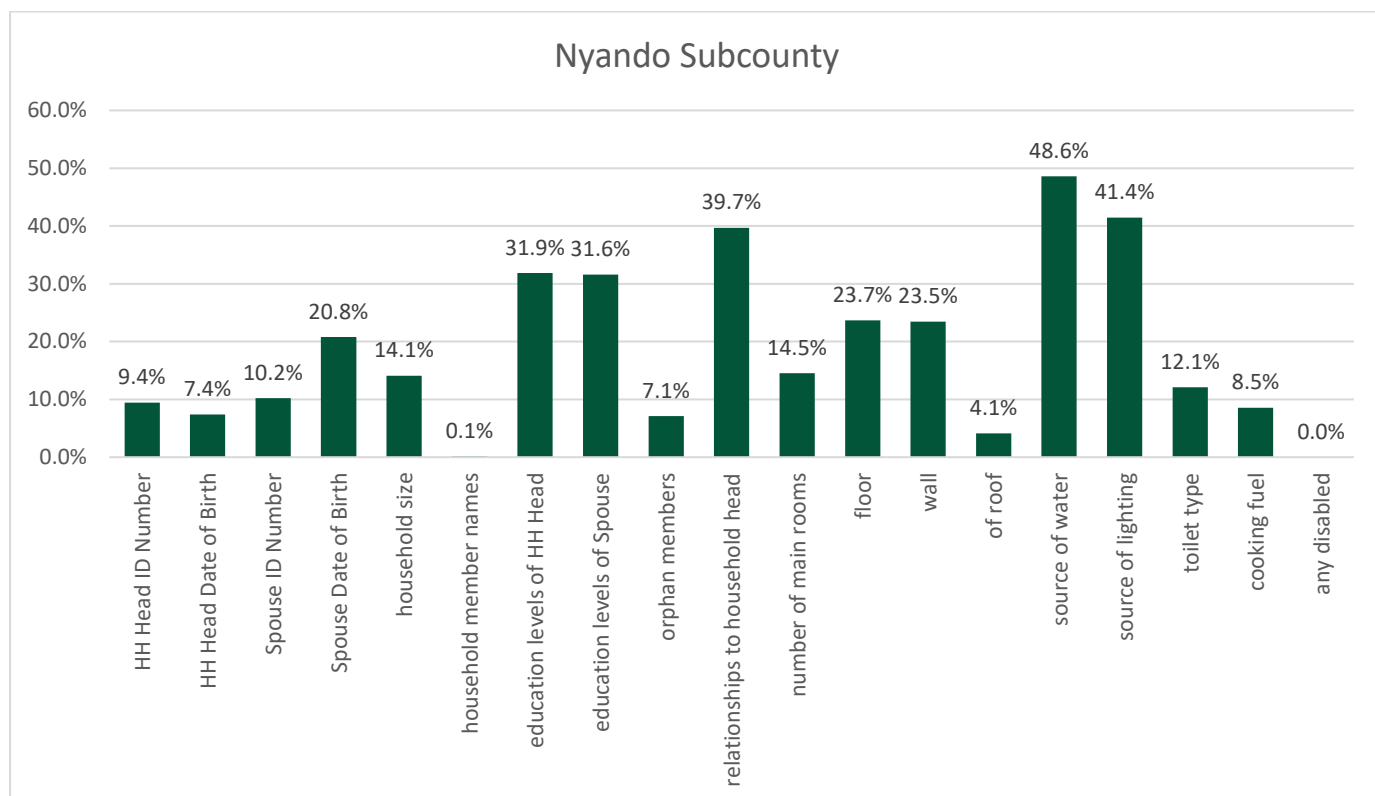


The level of education of the HHH and spouse were the main contributors to the high variance at God Nyithindo Location. There were low cases of educational advancement observed from the responses to the control questions. This means that the high variability recorded here could be because of differences in the understanding of the question by enumerators and/or respondents in either round of data collection.

Oboch location with 23.3% variance had the source of lighting as the highest contributor of the high variance at 58.8%. The control questions records movement towards rain, well and boreholes from the rivers and dams as the source of water.

The figure below shows the variances recorded for each indicator in the Sub-County

Figure 8: Nyando Subcounty Variances by Household Indicator



At West Nyakach location Education level for the HHH and the spouse and the source of lighting caused the high variance of 23.1%. There is a notable high variance in orphan members at Awasi location which is well recorded by the control questions in the high numbers of death in the spouses which also have affected the high variance in the HHH relationship. There is a general movement of the source of fuel in the Nyando Sub-County towards charcoal from firewood. The floor dominant material had a variance of 23.7% which is observable from the control questions trend where there is movement from earth to cement in Nyando.