

## Pre-analysis plan

### “The Economic and Social Impacts of Electrification: Evidence from Kenya”<sup>1</sup>

**AEA RCT Title:** “Evaluation of Mass Electricity Connections in Kenya”

**RCT ID:** AEARCTR-0000350

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**Summary:** This document outlines the plan for analyzing a dataset consisting of information on the living standards of roughly 2,500 households in Western Kenya, including nearly 500 households that previously benefited from a randomized household electrification program. The goal of this study is to estimate the economic and social impacts of household electricity connections. This document lays out the main regression specifications and outcome variable definitions that we intend to follow. However, we anticipate that we will carry out additional analyses beyond those included in this document. Therefore, this document is not meant to be comprehensive or to preclude additional analyses.

#### Appendices:

- A. Living Standards Kenya (LSK) Survey – Baseline (2014)
- B. Living Standards Kenya (LSK) Survey – Follow-up Round 1 (2016)
- C. Living Standards Kenya (LSK) Survey – Follow-up Round 2 (2017)
- D. Note on data management/access and pre-analysis plan (uploaded in October 2017)

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## 1. Introduction

### 1.1 Summary

Universal access to modern energy has become a top priority for policymakers, nongovernmental organizations, and international donors across Sub-Saharan Africa. In Kenya, nearly US\$600 million has been invested in extending the grid to rural areas since 2008. While there is now widespread grid coverage, the national household electrification rate remains relatively low. Kenya is currently pursuing a strategy of last-mile connections for “under grid” households in order to reach universal access to electricity by 2020. Given the high cost of subsidizing mass connections, however, there is a need for better understanding of the impacts of rural electrification. *In this study, we will provide experimental evidence on the impacts of household electrification across a range of economic and social outcomes in Western Kenya.*

Between 2013 and 2015, we implemented a field experiment in which electricity connection vouchers (worth varying amounts) were randomly assigned to clusters of rural households in Western Kenya. Households accepting these vouchers were then connected to the national grid, in cooperation with Kenya’s Rural Electrification Authority (REA) and Kenya Power, the main electricity distribution company. As a result of this experiment, it is possible to perform a randomized evaluation of the impact of household grid connections. The study focuses on household survey data from a baseline survey and two follow-up surveys of roughly 2,294 households that were observed to be unconnected at baseline.

### 1.2 Experimental design and steps

In this section, we describe the experimental design. For further details, see Lee et al. (2016) at <http://dx.doi.org/10.1016/j.deveng.2015.12.001>, Lee, Miguel, and Wolfram (2016) at <http://dx.doi.org/10.1257/aer.p20161097>, and Lee, Miguel, and Wolfram (2018) at <http://www.nber.org/papers/w22292>. (This third paper has been submitted for journal publication, and the final published version will differ somewhat from the earlier NBER working paper version that we link to here.)

Step 1: In July 2013, we collaborated with REA to identify a list of 150 rural “transformer communities” that would form a representative sample of communities recently connected to the

electrical grid in Busia and Siaya, two counties in Western Kenya. Each community is defined as all of the structures that were located within 600 meters of a central transformer.

Step 2: Between September 2013 and December 2013, we visited each community and geo-tagged over 13,000 structures, capturing the universe of un-electrified households that could potentially be connected to the national grid.

Step 3: Using these data as a sampling frame, we randomly sampled 2,504 households, consisting of 2,294 households that were unconnected at baseline and 210 households that were connected to the grid at baseline. The regressions described in Sections 2.2 to 2.4 focus on the group of 2,294 households. We use data from the sample of 210 connected households mainly for descriptive purposes, for example, to compare characteristics of households that had already connected without our subsidy to households that later connected with a subsidy. Between February and August 2014, we administered a detailed survey of each household, capturing baseline measures of living standards. See “Living Standards Kenya (LSK) Survey – Baseline (2014)” in Appendix A.

Step 4: In April 2014, we randomly assigned the 150 communities into four groups: (1) “High-subsidy” (or 100% discount) arm with 25 communities, resulting in an effective price of \$0; (2) “Medium-subsidy” (or 57% discount) arm with 25 communities, resulting in an effective price of \$171; (3) “Low-subsidy” (or 29% discount) arm with 25 communities, resulting in an effective price of \$284, and (4) “No subsidy” or control group (effective status quo price of \$398 plus wiring) with 75 communities.

Step 5: After distributing the electricity connection subsidies, we facilitated the construction of grid infrastructure to connect the 478 unconnected households that accepted the randomized offer. The first household was metered in September 2014, the average connection time was seven months, and the final household was metered over a year later, in October 2015.

Step 6: Between May and September 2016, we administered a follow-up survey (“Follow-up Round 1”) and successfully surveyed 2,217 study households, or 96.6 percent of baseline sample. We surveyed an additional 1,345 households—or six to eleven households per community—as part of a “spillover” or “secondary sample,” randomly sampling households that were observed to be unconnected at the time of the census but were not enrolled during the baseline survey.

Data from this secondary sample is used to study within-village externality impacts to local households. We also collected follow-up survey data from 208 of the 210 households that had already been connected at the time of the baseline census. As part of the Follow-up Round 1 survey, we administered short English and Math tests to all 12 to 15 year olds in the sample households, or 2,317 children in total. See “Living Standards Kenya (LSK) Survey – Follow-up Round 1 (2016)” in Appendix B.

Step 7: In October 2017, we launched a second follow-up survey (“Follow-up Round 2”) to capture various measures of living standards and other outcomes targeting the 2,504 households sampled during the baseline round. See “Living Standards Kenya (LSK) Survey – Follow-up Round 2 (2016)” in Appendix C. The Follow-up Round 2 survey was carried out between October and December 2017.

### *1.3 Main and secondary samples*

To summarize, our study will focus on two sets of households. The first set of households—which we refer to as “main sample” households—consists of the 2,294 households that were unconnected to electricity at the time of the baseline survey. The second set of households—which we refer to as “spillover” or “secondary sample” households—consists of the 1,345 households that were enrolled into the data collection during the 2016 follow-up survey round. The analyses described in this pre-analysis plan focus only on main sample households, and the Follow-up Round 2 survey data.

### *1.4 Analysis and data examined to date*

At the time of registering this pre-analysis plan, we had completed data collection for the Follow-up Round 2 surveys. Note that we did not examine the data or perform any data analysis before registering this plan. As described in the document titled, “Note on data management/access and pre-analysis plan,” which was uploaded to the AEA RCT Registry in October 2017 and is included in Appendix D of this document, the authors of this pre-analysis plan were provided with access to de-identified survey data for roughly 250 surveys, at the very beginning of the survey round. These data were stripped of any indicators that could expose the treatment status of households, and were provided in order to (1) allow the authors to identify and correct any coding errors in the survey instrument, (2) make improvements to the choice sets

for multiple-choice questions, (3) identify and amend questions that were taking excessive time to administer, (4) address any other technical issues with the survey instrument (for instance, with the SurveyCTO data entry software coding), and (5) make any final additions to the survey instrument to address minor questions that came up in the field. Each member of the research team agreed to follow the data management/access plan.

The remainder of this pre-analysis plan is organized as follows. Section 2 describes the main regression specifications, heterogeneity analysis, and planned methods of multiple hypothesis correction, in addition to other topics. Section 3 describes the major outcomes of interest. This document captures our current plan to analyze these data. However, we anticipate carrying out additional tests. In other words, this plan is not meant to be an exhaustive set of all analyses, but rather a core set of important initial estimates that will hopefully inspire further analyses.

## 2. Analysis

### 2.1 General notes

Randomly lowering the price of an electricity connection at the community-level by 29, 57, and 100 percent, resulted in increases in take-up of 6%, 22%, and 95%, over the baseline, respectively.<sup>2</sup> Take up in the low and medium subsidy treatment arms was relatively low. In our analysis, we will estimate both treatment-on-treated (TOT) and intention-to-treat (ITT) impacts of electrification. ITT estimates will be obtained from specifications in which various outcomes of interest are regressed on a set of binary variables indicating the treatment status of the community. TOT estimates will be obtained from two-stage least squares specifications in which the household's electrification status is instrumented with the set of treatment indicators.

Throughout this document, we refer to our subject population as "households." In our setting, residential structures are typically located in compounds that can sometimes consist of multiple households. Our subject population consists of households that were considered to be the "main household" in the residential compound at the time of the baseline survey. To construct our sample, we randomly sampled compounds from each transformer community and enrolled

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<sup>2</sup> See Lee, Miguel, and Wolfram (2018) for details.

the primary household in the compound. All other households in each compound are referred to as “minor households.”

In the majority of our analysis, we will focus on the family of the respondent that was interviewed at baseline, regardless of whether the family is still living in the same location at the time of the follow-up survey. In practice, residential out-migration rates were low during the study period. For certain outcomes, however, we will focus on the family (if any) that is currently living at the physical location where the baseline survey took place. This will allow us to examine an additional set of questions including, for example, whether locations that were electrified are more likely to remain inhabited, compared to locations that were not electrified.

In Sections 2.2 to 2.4, we describe three analytical approaches. First, focusing on Round 2 cross-sectional data, we will estimate the impacts of grid electrification. Second, pooling together Round 1 and Round 2 data, we will perform largely the same analyses; using both rounds of follow-up data leads to improved statistical power. Finally, wherever we have equivalent outcome measures collected across the Baseline, Follow-up Round 1, and Follow-up Round 2 datasets, we will estimate the panel regressions described below.

## *2.2 Cross-sectional results*

Using only the most recent Follow-up Round 2 survey data, we will test the hypothesis that households connected to the electricity grid enjoy higher levels of living standards. Specifically, we will estimate ITT results using the following equation:

$$y_{ic} = \beta_0 + \beta_1 T_{Lc} + \beta_2 T_{Mc} + \beta_3 T_{Hc} + X'_c \Lambda + Z'_{ic} \Gamma + \epsilon_{ic} \quad (1)$$

where  $y_{ic}$  represents the outcome of interest for main sample household  $i$  in community  $c$ , and  $T_{Lc}$ ,  $T_{Mc}$ , and  $T_{Hc}$  are binary variables indicating whether community  $c$  was randomly assigned into the low-value, medium-value, and high-value subsidy treatment arms, respectively. Following Bruhn and McKenzie (2009), we include a vector of community-level characteristics,  $X_c$ , containing the variables used for stratification during randomization. In addition, we include  $Z_{ic}$ , a vector of household-level characteristics. Further details on the components of the covariate vectors are presented in Section 2.8. The variables in  $Z_{ic}$  will sometimes be used in analyses of treatment effect heterogeneity, which is discussed in further detail in Section 2.9. In Section 2.12,

we discuss the possibility of ANCOVA specifications for certain outcome variables. In all cases, standard errors will be clustered at the community level.

The issue of limited statistical power may be more severe in ITT specifications due to the relatively low take-up rates in the low and medium subsidy treatment groups. To address this issue, we will focus attention on the coefficient on the high subsidy treatment indicator. This test will not only shed light on the impacts of near universal electrification (compared to the control group, were very few households become connected), but also is likely to have greater statistical power.

We will also estimate TOT results using the following equations:

$$E_{ic} = \delta_0 + \delta_1 T_{Lc} + \delta_2 T_{Mc} + \delta_3 T_{Hc} + X_c' \Lambda_1 + Z_{ic}' \Gamma_1 + \eta_{ic} \quad (2)$$

$$y_{ic} = \beta_0 + \beta_1 E_{ic} + X_c' \Lambda_2 + Z_{ic}' \Gamma_2 + \epsilon_{ic} \quad (3)$$

where the first-stage equation 2 estimates the effects of the treatment indicators on household electrification status,  $E_{ic}$ , and the second-stage equation 3 estimates the effect of household electrification status on the various outcomes of interest. As in equation 1, errors will be clustered at the community level.

Lee, Miguel, and Wolfram (2018) document systematic differences in the baseline living conditions of households taking up the experimental offers in the low and medium subsidy groups, compared to the high subsidy group. Households that paid more for an electricity connection (i.e., lower subsidy arm households) were wealthier and more educated on average than those who paid nothing (i.e., high subsidy arm households). This suggests that the average treatment effect may vary across treatment arms. For example, electrification may be more impactful for the relatively wealthier households that are able to invest in complementary assets such as electrical appliances. In order to examine these types of heterogeneous treatment effects, we will explore the methods described in Kowalski (2016) to first recover bounds on average treatment effects for “always taker” and “never taker” households, and then decompose group average treated outcomes into selection and treatment effects. However, due to relatively low take-up rates in the low and medium subsidy groups, some of these analyses may be statistically underpowered.

In our analyses of Follow-up Round 1 data, some of which are described in Lee, Miguel, and Wolfram (2018), we find little to no evidence of spillovers accruing to local households. We

can therefore interpret the TOT results largely without concern about violations of the stable unit treatment value assumption (SUTVA).

### 2.3 Pooled results

In order to improve statistical power, we will pool together Follow-up Round 1 and Round 2 data, and estimate ITT results using the following equation:

$$y_{ict} = \beta_0 + \beta_1 T_{Lc} + \beta_2 T_{Mc} + \beta_3 T_{Hc} + X'_c \Lambda + Z'_{ict} \Gamma + \mu_{R2} + \epsilon_{ict} \quad (4)$$

In addition, we will estimate TOT results using the following equations:

$$E_{ict} = \delta_0 + \delta_1 T_{Lc} + \delta_2 T_{Mc} + \delta_3 T_{Hc} + X'_c \Lambda_1 + Z'_{ict} \Gamma_1 + \mu_{R2} + \eta_{ict} \quad (5)$$

$$y_{ict} = \beta_0 + \beta_1 E_{ict} + X'_c \Lambda_2 + Z'_{ict} \Gamma_2 + \mu_{R2} + \epsilon_{ict} \quad (6)$$

In the above equations,  $\mu_{R2}$  denotes Follow-up Round 2 data. Equation 5 will effectively estimate the average take-up effects over both follow-up rounds, and Equation 4 and Equation 6 will similarly estimate the average electrification treatment effects on the outcomes of interest over both rounds, for those outcome measures that were collected in both Follow-up Round 1 and Round 2.

### 2.4 Panel results

Finally, we will combine Follow-up Round 1 and Follow-up Round 2 data into a panel and focus on the set of outcome measures that are available across all rounds. Specifically, we will estimate ITT results using the following equation:

$$\begin{aligned} y_{ict} = & \beta_{01} D_t^{R1} + \beta_{02} D_t^{R2} + \beta_{11} T_{Lct} D_t^{R1} + \beta_{21} T_{Mct} D_t^{R1} + \beta_{31} T_{Hct} D_t^{R1} + \\ & \beta_{12} T_{Lct} D_t^{R2} + \beta_{22} T_{Mct} D_t^{R2} + \beta_{32} T_{Hct} D_t^{R2} + D_t^{R1} X'_c \Lambda_1 + \\ & D_t^{R1} Z'_{ict} \Gamma_1 + D_t^{R2} X'_c \Lambda_2 + D_t^{R2} Z'_{ict} \Gamma_2 + \epsilon_{ict} \end{aligned} \quad (7)$$

In addition, we will estimate TOT results using the following equations:

$$\begin{aligned} E_{ict} = & \delta_{01} D_t^{R1} + \delta_{02} D_t^{R2} + \delta_{11} T_{Lct} D_t^{R1} + \delta_{21} T_{Mct} D_t^{R1} + \delta_{31} T_{Hct} D_t^{R1} + \\ & \delta_{12} T_{Lct} D_t^{R2} + \delta_{22} T_{Mct} D_t^{R2} + \delta_{32} T_{Hct} D_t^{R2} + D_t^{R1} X'_c \Lambda_{1,1} + \\ & D_t^{R1} Z'_{ict} \Gamma_{1,1} + D_t^{R2} X'_c \Lambda_{2,1} + D_t^{R2} Z'_{ict} \Gamma_{2,1} + \eta_{ict} \end{aligned} \quad (8)$$

$$y_{ict} = \beta_{01}D_t^{R1} + \beta_{02}D_t^{R2} + \beta_1 E_{ict}D_t^{R1} + \beta_2 E_{ict}D_t^{R2} + D_t^{R1}X_c'\Lambda_1 + \\ D_t^{R1}Z_{ict}'\Gamma_1 + D_t^{R2}X_c'\Lambda_2 + D_t^{R2}Z_{ict}'\Gamma_2 + \epsilon_{ict} \quad (9)$$

In the above equations,  $D_t^{R1}$  is an indicator variable that equals one for Follow-up Round 1 observations and zero otherwise. Similarly,  $D_t^{R2}$  equals one for Follow-up Round 2 observations and zero otherwise. In the ITT specification, we will focus attention on the two coefficients on the high subsidy treatment indicators ( $\beta_{31}$  and  $\beta_{32}$ ). We will test the null hypothesis that both coefficients are equal to zero to assess whether electrification had impacts in any period. We will also test the null hypothesis that the two coefficients are equal to each other to assess whether the effects of electrification differed over time. Similarly, in the TOT specification (equation 9), we will focus on  $\beta_1$  and  $\beta_2$ , and will both test the null hypothesis that both coefficients are equal to zero to assess whether electrification had impacts in any period, and we will also test the hypothesis that the two coefficients are equal to each other.

## 2.5 Community-level outcomes

For community-level outcomes (which are specified in Section 3.12), we will estimate equations that are similar in form to those specified in Sections 2.2 to 2.4. Since the unit of observation is the community, we will exclude household-level covariates. When using the Follow-up Round 2 data on community outcomes in the TOT specification, we will replace the  $E_{ic}$  term in equations 2 and 3 with  $R_c$ , the estimated local transformer community total electrification rate.

Note that for each transformer community, we have data on the universe of households (as well as their grid connection status) at the time of our baseline census. In addition, we have Round 1 follow-up household survey data for the main and secondary sample households and Round 2 follow-up survey data for the main sample households. Since we do not have updated census data for each transformer community, we will need to estimate the current electrification rate. For each of the treatment arms, we will calculate the average take-up rate at the time of the Round 1 follow-up for the portion of secondary sample households that were observed to be unconnected at the time of the baseline census. We will estimate  $R_c$  by combining actual follow-up take-up (connection) data among the main sample households surveyed in Round 2 with estimated connection data for the non-surveyed households in the relevant treatment group.

Specifically, for each treatment arm, we will assume that all of the remaining, non-surveyed households connected to the grid at the treatment arm-level average take-up rate for non-surveyed households (i.e., the households that did not receive connection subsidies even in the subsidy treatment arms). We will estimate the average take-up rate using Round 1 follow-up data for the spillover sample. Due to concerns that the TOT specification may be statistically underpowered, for the community-level outcomes we will focus primarily on the ITT results. See Section 3.12 for additional details on how we plan to construct community-level outcome variables.

## 2.6 Educational impacts

Another objective of this study is to understand the extent to which household electrification impacts the educational outcomes of schoolchildren. As part of the Follow-up Round 2 survey, we collected student scores on the Kenya Certificate of Primary Education (KCPE) exam, a standardized national exam administered at the end of primary school and required for admission to secondary school. Using these data, we will estimate regressions that are similar in form to those specified in Sections 2.2 to 2.4 but will focus on individual children as the unit of observation. In these regressions, the covariate vector  $Z_{ic}$  will be complemented with the covariate vector  $C_{jic}$ , which includes additional information on child  $j$  in household  $i$  in community  $c$  (e.g., child demographic characteristics). The outcomes of interest in these specifications will therefore be denoted with the subscript  $jic$ . The covariate vector  $C_{jic}$  is described in more detail in Section 2.8.

## 2.7 Stated willingness to pay (WTP) for electricity

In the Round 2 follow-up survey, we first ask respondents whether they would be hypothetically willing to connect to the national grid at a randomly selected price (i.e., in a *time unlimited* offer) (f6g in the Round 2 survey). The randomly selected price,  $p$ , was drawn from the following set of prices (in Kenyan shillings):

$$\{0, 5000, 10000, 15000, 20000, 25000, 35000, 75000\}$$

This question was followed by an additional hypothetical question (f3h) asking the respondent whether they would accept an offer at this price if they were given only six weeks to complete the payment (i.e., *time limited* offer). Finally, respondents were asked whether they

would be willing to pay a monthly amount over a period of three years, where the cumulative total is equal to the randomly selected price ( $f3i$ ) (i.e., *financed offer*, with terms similar to those offered under the current Kenya LMCP). Respondents from connected households were asked a similar set of questions with somewhat different wording to reflect the fact that they are already connected (see  $f4d$ ,  $f4e$ , and  $f4f$ ).

We are interested in understanding how stated WTP responds to price levels. Specifically, we will estimate the following equation:

$$h_{ic} = \alpha_0 + \alpha_1 T_{Lc} + \alpha_2 T_{Mc} + \alpha_3 T_{Hc} + \sum_p \beta_p W_{pic} + \sum_p \gamma_{1p} (W_{pic} \times T_{Lc}) + \\ + \sum_p \gamma_{2p} (W_{pic} \times T_{Mc}) + \sum_p \gamma_{3p} (W_{pic} \times T_{Hc}) + X'_c \Lambda + Z_{ic} \Gamma + \epsilon_{ic} \quad (10)$$

where  $h_{ic}$  is a binary variable indicating the stated (i.e., hypothetical) take-up decision for household  $i$ ,  $W_{pic}$  is a binary variable indicating whether household  $i$  in community  $c$  received the hypothetical price  $p$ , and  $Z_{ic}$  is the household covariate vector. We are especially interested both in the direct effects of the treatment indicators, as well as the coefficients on the full set of interactions between the treatment indicators and the  $W_{pic}$  terms. These interactions will shed light on how stated WTP may differ for households that were recently connected to the grid (e.g., using the main sample data), and thus may have direct experience with household electrification, or for unconnected households that recently observed neighboring households become connected to the grid (e.g., using the secondary sample data), although this second analysis is only possible using the Follow-up Round 1 data. Standard errors will be clustered at the community level.<sup>3</sup> We will also test for heterogeneous effects, which are generally described in Section 2.9.

As in Lee, Miguel, and Wolfram (2018), we will plot the stated WTP results graphically. For example, we may plot and compare demand curves for (1) time unlimited, time limited, and financed offers, (2) control households at baseline versus at each follow-up round, and (3) main sample households in the various subsidy arms versus the control group at baseline and at each follow-up round, as well as other comparisons.

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<sup>3</sup> Based on the results of Lee, Miguel, and Wolfram (2018), we do not expect the relationship between take-up and price to be linear. However, we may still test for linearity, and if we cannot reject linearity in an F-test, we will also estimate an equation in which  $y_{ic}$  is regressed on  $p_{ic}$ , controlling for the treatment indicators and other covariates.

## 2.8 Covariate vectors $X_c$ , $Z_{ic}$ , and $C_{jc}$

In this section, we describe each of the sets of covariates that we plan to utilize in the analysis.

The vector  $X_c$  will primarily include the stratification variables that were used during randomization. These include:

- County: Binary variable indicating whether community  $c$  is in Busia county or Siaya county.
- Market status: Binary variable indicating whether the total number of businesses in community  $c$  is strictly greater than the community-level mean across the entire sample at baseline. We use this definition to define which communities could reasonably be classified as “markets” relative to others.
- Transformer funding year: Binary variable indicating whether the electricity transformer in community  $c$  was funded “early” (i.e. in either 2008-09 or 2009-10).
- Electrification rate: Residential electrification rate in community  $c$  at the time of census (roughly 2013).
- Community population: Estimated number of people living in community  $c$  at the time of census (roughly 2013).

The vector  $Z_{ic}$  will include the set of household-level variables listed below, taking advantage of the baseline survey data.

- Gender of respondent: Binary variable indicating whether the baseline respondent was female.<sup>4</sup>
- Age: Age of the baseline respondent in 2014.
- Education of respondent at baseline: Binary variable indicating whether the household respondent at baseline has completed secondary school.<sup>5</sup>
- Bank account at baseline: Binary variable indicating whether the household respondent at baseline had a bank account.

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<sup>4</sup> As a robustness check, we will also present a specification in which we control for the demographic characteristics of the respondent (e.g., gender and age) in the follow-up survey.

<sup>5</sup> The respondent during the baseline survey is not necessarily the same person as the respondent during the follow-up survey.

- Housing quality index at baseline: Index composed of whether the household had high-quality floors, roof, and walls at baseline.
- Asset value at baseline: Estimated value based on inventory of livestock, electrical appliances, and non-livestock assets at baseline, at current observed local prices.
- Energy spending at baseline: Estimated monthly expenditures on all energy sources at baseline.

The vector  $C_{jic}$  will include a set of individual-level characteristics that are relevant for the regression specifications estimating the impacts of electrification on educational performance.

- Gender of student: Binary variable indicating whether the student is female.
- Age: Age of student in 2017.
- Siblings: Number of children under 18 in the household.
- Grade attained at baseline: Grade attained by the end of the 2013 academic year.<sup>6</sup>

## *2.9 Heterogeneous effects*

In additional analyses, we will estimate heterogeneous treatment effects along a number of major dimensions, captured in the vectors  $X_c$ ,  $Z_{ic}$ , and  $C_{jic}$ , by adding interaction terms between each treatment indicator and these variables. For instance, in order to assess how treatment impacts may vary for households at different wealth levels, we will estimate specifications in which the treatment indicators are interacted with the housing quality index at baseline.

Furthermore, there are additional variables that are not included in the covariate vectors above but are of potential interest. One variable of interest is the frequency of transformer outages in the community—that is, the proportion of months (between September 2014 and June 2017) that the transformer was not working. Intuitively, it appears likely that any electrification impacts would be muted in communities without a functioning transformer.

We are uncertain whether our study design will have sufficient statistical power to generate precise estimates on many of these interaction terms and hence such analyses should be

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<sup>6</sup> We will infer this data by comparing the baseline and follow-up surveys for main sample households. It is possible that this data will be missing for some individuals. If there are relatively few such instances, we will include an additional binary variable as a covariate indicating that the data are missing. Alternatively, we will likely drop this covariate altogether if this data on grade attainment in 2013 is missing for over 30% of individuals in the data.

considered suggestive rather than definitive. The patterns that emerge will also likely stimulate further exploratory analysis using the dataset.

### *2.10 Construction of indices*

When constructing indices, we will normalize each component variable to have mean zero and unit variance, and thereafter we will construct the index by summing each component variable and then re-normalizing (the mean effects approach). Note that we will exclude any variables with zero (or very close to zero) variance since these do not contribute any information to the analysis. Furthermore, if a pre-specified variable is missing for more than 30% of possible observations collected in the follow-up surveys, we will drop it from inclusion in the index. We cannot anticipate why a particular variable will be missing so frequently, and believe such cases will be rare, but in such events where it warrants exclusion, we shall also explore these reasons in the analysis. Finally, in the appendix we will also report results for all individual outcomes used to create indices.

### *2.11 Multiple Testing Adjustment*

In Section 3, we describe how the major outcomes of interest are categorized into eleven (11) broad “families”. For the main coefficient estimates of interest (for instance,  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  in equation 1) we will present two sets of p-values. First, we will present the standard “per-comparison”, or naïve, p-value, which is appropriate for a researcher with an a priori interest in a specific outcome. For instance, researchers interested in the effect of household electrification on non-agricultural earnings should focus directly on this p-value.

Second, since we test multiple hypotheses, it is also appropriate to control for the possibility that some true null hypotheses will be falsely rejected. Therefore, we will also present the false discovery rate (FDR)-adjusted q-value that limits the expected proportion of rejections within a hypothesis that are Type I errors (i.e., false positives). Thus, while a p-value is the unconditional probability of a Type I error, the analogous FDR q-value is the minimum proportion of false rejections within a family that one would need to tolerate in order to reject the

null hypothesis.<sup>7</sup> Specifically, we will follow the approach to FDR analysis adopted in Casey et al. (2012) and the references cited therein (e.g., Anderson 2008).

We will present FDR-adjusted q-values for each of the outcomes within the primary outcomes group (Table 1), as well as FDR-adjusted q-values for each outcome within each of the eleven outcome families (Tables 3 through 13). Section 3 below describes the primary outcomes and the outcome families that we will analyze. As noted in Section 1.4, we anticipate that we will examine additional outcomes beyond those included in this plan.

### *2.12 Additional analyses*

For a subset of outcomes in the main sample regressions, we will have comparable measures in the baseline survey as well as in both Follow-up Rounds (e.g., we have such data for household size, home solar system usage, energy consumption, etc.). In these cases, we are also able to estimate ANCOVA regression specifications in which the baseline value of the outcome of interest is included as an additional covariate, as the resulting estimates may have greater statistical power (McKenzie 2012). However, note that we lack equivalent baseline measures for most outcome variables described below (in Section 3). As a result, the ANCOVA estimates will be presented mostly as a supplement to the analyses already described, and our main focus will be on the results of the specifications described in Sections 2.2 and 2.4 above.

## **3. Major outcomes of interest**

### *3.1 Overview*

In this section, we specify 85 major economic and social outcomes of interest. These outcomes have been selected based on the judgment of the research team and are arranged into eleven broad families: (1) energy consumption, (2) household structure, (3) time use, (4) productivity, (5) wealth, (6) consumption, (7) health and wellbeing, (8) education, (9) social and political attitudes, (10) community outcomes, and (11) safety and crime outcomes. Based on this list, we also identify a group of eleven “primary” outcomes, as well as two “grouped” outcomes, drawn from a number of different outcome families. The estimated impacts on these primary

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<sup>7</sup> In this sense, false positives are driven not only by sampling variation for a single variable (the traditional interpretation of a p-value) but also by having multiple outcomes to test.

outcomes will serve as an overall summary of the impacts of household electrification in our setting.

Within each outcome family, there are outcomes at different levels of aggregation, ranging from specific variables to indices that combine data from multiple variables. Due to the novelty of many of these measures, some of the groupings are speculative. We will therefore report measures of index quality and coherence in the appendix, for example, by examining the correlation patterns of measures within each index. Depending on the index quality, we may also perform additional analyses, for example, presenting results with alternative groupings of outcomes. For completeness and transparency, in the appendix, we will also present estimated impacts for all specific outcomes individually, including those used to construct each of the indices.

### *3.2 Primary outcomes*

Table 1 summarizes the primary outcomes that will serve as an overall summary of living standards and life outcomes in our setting. For certain primary outcomes, we are able to use the existing literature to guide our expectations on the impacts of electrification in our setting. For example, in South Africa, Dinkelman (2011) finds that female employment rises by 9 to 9.5 percentage points and women work roughly 8.9 hours more per week. In Brazil, Lipscomb, Mobarak, and Barham (2013) find that the probability of employment increases by 17 to 18 percentage points, over the long run, in counties that are electrified. Taken together, we should expect to find substantial increases in the probability of employment (P.3a) and labor hours (P.4), particularly for women. Furthermore, in the Philippines, Chakravorty, Emerick, and Ravago (2016) estimate that village-level electrification leads to an increase in household expenditures by 38 percent, suggesting that there will be large gains in household consumption (P.6). In terms of test scores (P.9a, P.9b), Hassan and Lucchino (2016) examine the impacts of randomly distributing solar lanterns to 7<sup>th</sup> grade pupils in Kenya and find math grades to increase by 0.88 standard deviations for treatment pupils. In our analysis of each primary outcome, we will test the null hypothesis of no effect, and (wherever possible) the hypothesis that the treatment effect is the same as that found in the existing literature. Finally, we will compare the estimated impacts in our study to other outcomes in the broader development economics literature in order to assess the cost effectiveness of rural electrification as a development policy.

Table 2 presents two groupings of the primary outcomes in Table 1. The primary economic outcomes (P3-P6) are combined into an economic mean effect index. The primary non-economic outcomes (P7-P11) are combined into a non-economic mean effect index. We will use these indices to test whether electrification had an overall economic effect or non-economic effect on households.

### *3.3 Family #1 – Energy consumption major outcomes*

At the most basic level, electricity connections should impact the ways in which households consume energy. Family 1 outcomes are presented in Table 3.

### *3.4 Family #2 – Household structure major outcomes*

If there are changes in the patterns of energy consumption, there may also be changes in the structure of the household. For example, access to electricity may impact household structure by influencing incentives to migrate by making living in the household more attractive. Family 2 outcomes are presented in Table 4.

### *3.5 Family #3 – Time use major outcomes*

Household electrification may operate as a labor-saving technology shock to home production, releasing female time from home to market work (Dinkelman 2011; Grogan and Sadanand 2012). Family 3 outcomes are presented in Table 5. Note that we did not collect Family 3 outcomes in Follow-up Round 2.

### *3.6 Family #4 – Productivity major outcomes*

If electrification changes people's time use, and, for example, allows for more hours of work outside the home, there may be positive impacts on various measures of productivity and wealth.<sup>8</sup> The evidence on the impacts of electrification on productivity have been somewhat mixed. Dinkelman (2011), for example, finds evidence of increased female labor force participation in South Africa. Chakravorty, Emerick, and Ravago (2016) find large impacts of electrification on household income and expenditures in the Philippines, but attribute these

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<sup>8</sup> Grimm et al. (2015), for instance, present a theoretical model in which an increase in household electrification effectively reduces the price of energy faced by the household, which increases the productivity of domestic labor and the output of household production.

impacts to increases in agricultural income rather than increases in labor force participation. In contrast, Burlig and Preonas (2016) find little to no impacts of electrification on various employment outcomes in rural India. Family 4, shown in Table 6, includes various measures of household agricultural activities, employment, small businesses, and other outcomes. In Follow-up Round 2, it includes a measure of total household earnings, estimated by adding together net earnings for each household member from employment or self-employment as well as from agricultural activities.

### *3.7 Family #5 – Wealth major outcomes*

In terms of wealth, Lipscomb, Mobarak, and Barham (2013) find evidence of higher average housing values as a result of electrification in Brazil. Family 5, shown in Table 7, includes a housing quality index and estimated values of different types of household assets, based on current market prices.

### *3.8 Family #6 – Consumption major outcomes*

We are interested in estimating the impacts of electrification on various measures of household consumption. In our setting, we focus on 23 items, including staples, vegetables, meat, fruits, and other goods. These 23 items were identified using data from the Kenya Life Panel Survey (KLPS-3).<sup>9</sup> Based on the KLPS-3 data, the 23 items account for 26% of total household consumption and 52% of total food consumption. Family 6, shown in Table 8, summarizes the various consumption outcomes.

### *3.9 Family #7 – Health and wellbeing outcomes*

Electricity has been found to improve respiratory health by reducing indoor air pollution (Barron and Torero 2017). Some people may also be happier when they have access to electricity due to impacts on various channels. Family 7, shown in Table 9, includes various measures of respondent health and wellbeing. Note that Family 7 data was collected only during the Follow-up Round 1 survey.

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<sup>9</sup> The KLPS-3 project is located in the same study region as this project and is led by Edward Miguel and other researchers. In the full KLPS survey, respondents are asked in detail about their consumption of 153 items.

### *3.10 Family #8 – Education outcomes*

It is possible that electrification may improve educational outcomes for students, if better lighting allows for more evening study time, for instance. The evidence, however, has been somewhat mixed to date. Randomized trials, including Furukawa (2014) and Hassan and Lucchino (2016), have focused on measuring the impacts of decentralized power solutions, such as solar lanterns, and have documented results ranging from negative impacts to positive impacts with substantial spillovers. Studies on the impacts of grid connections have been mostly non-experimental and have found positive impacts of electrification on school enrollment, study time, and school completion (see, e.g., Khandker et al. 2014). Family 8 includes a variety of educational outcomes, including test scores from English and Math tests that were administered to students in the sample villages by our project field staff.

The data include two different measures of test scores. The first test scores come from English and Math tests administered by our project field staff as part of Follow-up Round 1 data collection. The second test scores come from the KCPE exam, normally administered to students in their final year of primary school education. If we do not find evidence that electrification affected likelihood of taking the KCPE (outcome 8.9), then we intend to pool data for the average of math and English test scores (outcome 8.3) and KCPE scores (outcome 8.10) to be used as a single outcome variable. If electricity connections affected the likelihood of a connection, then interpretation of the average differences in Round 2 KCPE test scores will be more difficult to interpret, due to possible selection into the test score sample. Family 8 outcomes are listed in Table 10.

### *3.11 Family #9 – Social and political attitudes outcomes*

Electrified households may consume more media content (via televisions, radios, and internet access), and as a result, could have greater knowledge of current affairs, or experience changes in social and political attitudes. Family 9 outcomes are listed in Table 11.

### *3.12 Family #10 – Community outcomes*

There are a number of community-level outcomes that are of interest in this study. It is possible that electricity can affect actual or perceived within-village inequality, in income, educational outcomes, and consumption. In order to estimate the impacts of electrification on

within-community inequality, we will take advantage of our random sample of households and calculate Gini coefficients, capturing within-community dispersion, using the productivity (Family 4), wealth (Family 5), education (Family 8), and consumption (Family 6) outcomes in our data. We will also match each transformer community to the nearest polling center from the August 2017 Kenyan national general elections. This will allow us to examine whether electrification affected local election vote share results.<sup>10</sup> Family 10 outcomes are listed in Table 12.

### *3.13 Family #11 – Safety and crime outcomes*

Access to electricity may help reduce local crime. For example, electric lights inside or outside the home may improve safety by making attempts to engage in criminal behavior more visible. Family 11 outcomes are listed in Table 13.

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<sup>10</sup> Note that for the analysis of voting outcomes, we plan to weight each community by the ratio of inhabitants living within 600 meters of the transformer to the total number of registered voters at the nearest polling center. In cases where only a small share of voters live near our sample transformer, the overall polling station data is less informative about the households we study.

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Table 1. Primary outcomes

ID	Outcome	Unit	Type	Description	Ref.	R1	R2
P.1	Grid connected	HH	Indicator	Indicator for main household connection	1.1	X	X
P.2	Grid electricity spending	HH	Total	Estimated prepaid top-up last month or amount of last postpaid bill	1.7	X	X
P.3a	Employed or own business – Household	HH	Proportion	Proportion of household members (18 and over) currently employed or running their own business	4.5	X	X
P.3b	Total household earnings	HH	Value	Sum of earnings for all household members that are employed or running their own business, as well as agricultural earnings.	4.12	-	X
P.4	Total hours worked	Resp.	Total	Total hours worked in agriculture, self-employment, employment, and household chores in last 7 days	4.11	X	X
P.5	Total asset value	HH	Estimated value	Estimated value of savings, livestock, electrical appliances, and other assets	5.6	X	X
P.6	Annual consumption	HH	Value	Estimated value of annual consumption of 23 goods	6.2	X	X
P.7	Recent symptoms index	Resp.	Index	Index of symptoms experienced by the respondent over the past 4 weeks	7.3	X	X
P.8	Life satisfaction	Resp.	Scale	Life satisfaction based on a scale of 1 to 10	7.8	X	X
P.9a	Average test score	Child	Z-score	Average of English reading test result and Math test result	8.3	X	-
P.9b	Average exam score	Child	Z-score	Average result on KCPE examination (taken during follow-up period)		-	X
P.10	Political and social awareness index	Resp.	Index	Index capturing the extent to which the respondent correctly answered a series of questions about current events	9.4	X	-
P.11	Crime index	Resp.	Index	Index of crime experienced by the respondent over the last 12 months	11.2	-	X

Table 2. Mean effect indices

	Outcome	Unit	Type	Description	Ref.	R1	R2
G.1	Economic index	HH	Index	Index of primary economic outcomes	P3-P6	X	X
G.2	Non-economic index	HH	Index	Index of primary non-economic outcomes	P7-P11	X	X

Table 3. Energy consumption major outcomes

ID	Outcome	Unit	Type	Component(s)	R1	R2	Survey no. (R1, R2)
1.1	Grid connected	HH	Indicator	Indicator for main household connection	X	X	F1a
1.2	Electric lighting	HH	Indicator	Indicator for electricity as main source of lighting	X	X	F1b
1.3	Lighting usage	HH	Total	Hours of lighting used (past 24 hours)	X	X	F18
1.4	Installation	HH	Total	Number of electrical outlets available Number of lighting sockets available Number of power strips in use	X X X	X X X	F6b F6c F6e
1.5	Appliances owned	HH	Total	Number of “high-wattage” appliances owned <sup>1</sup>	X	X	F19a to F19c
1.6	Appliances desired	HH	Total	Number of “high-wattage” appliances desired	X	X	F19d to F19g
1.7	Grid electricity spending	HH	Total	Estimated prepaid top-up last month Amount of last postpaid bill	X X	X X	F7a to F7e, F5h F8a to F8c, F5h
1.8	Kerosene spending	HH	Total	Kerosene spending last month <sup>2</sup>	X	X	F11
1.9	Other energy sources spending <sup>3</sup>	HH	Total	Solar power spending last month Battery spending last month Generator spending last month Purchased firewood spending last month Charcoal spending last month LPG spending last month Sawdust spending last month Mobile phone charging last month Other spending last month	X X X X X X X X	X X X X X X X X	F13d, F14d F15b, F15c F16c F17a F17b F17c F17d F17h F17e to F17g, F17i
1.10	Total energy spending	HH	Total	Total spending last month on grid electricity, kerosene, and other energy sources	X	X	See 1.7, 1.8, and 1.9 above

<sup>1</sup> In general, we follow Lee, Miguel, and Wolfram (2016a) in the definition of high and low wattage appliances. For instance, there we define mobile phones and radios as “low-wattage” appliances.

<sup>2</sup> For several energy spending categories (including kerosene), we recorded how much the household spent over the past seven days. In these cases, we will estimate spending over the past month by multiplying the weekly amount by a factor of approximately 4.3.

<sup>3</sup> This outcome will include all other energy-related expenditures recorded in the household survey, beyond grid electricity and kerosene.

1.11	Home solar usage	HH	Indicator	Indicator for usage of solar lantern or solar home system	X	X	F12a
1.12	Power sharing	HH	Indicator	Indicator for household is sharing its electricity connection (e.g., electricity connection shared with a minor household or a neighboring household)	X	X	A2 ( <i>R1 only</i> ), F5b, F5i, F5j, A18b ( <i>R2 only</i> )

Table 4. Household structure major outcomes

ID	Outcome	Unit	Type	Component(s)	R1	R2	Survey no. (R1, R2)
2.1	Household size	HH	Total	Total number of household members	X	X	Section A
2.2	Inhabited location	HH	Indicator	Baseline structure currently inhabited	X	X	Staff records
2.3	Household stayed	HH	Indicator	Household did not move to a new location	X	X	Staff records, AA9
2.4	Members living elsewhere	HH	Total	Household members documented at baseline that are now living elsewhere	X	X	Section A
2.5	Fertility	Resp.	Total	Number of times respondent (or sexual partner) has been pregnant since January 2014	X	X	sH3_3num_m, sH3_3num_f
2.6	Local social interactions	Resp.	Total	Number of times (over past week) neighboring respondents visited household and respondent visited neighboring households	X	-	Section K

Table 5. Time use major outcomes

ID	Outcome	Unit	Type	Component(s)	R1	R2	Survey no. (R1, R2)
3.1	Hours sleeping	Resp.	Hours	Sleeping (code 1)	X	-	L1 to L48
3.2	Hours studying	Resp.	Hours	Playing with children or helping with homework (code 13) Studying or attending class (code 16) <i>Note: All codes representing "studying" in survey</i>	X X	- -	L1 to L48
3.3	Hours working	Resp.	Hours	Light farm work (code 22) Heavy farm work (code 23) Fishing or hunting (code 24) Office/desk work (code 25) Light manual work (code 26) Heavy manual work (code 27) Other (work and travel) (code 32) <i>Note: All codes representing "work" in survey</i>	X X X X X X X	- - - - - - -	L1 to L48
3.4	Hours doing chores	Resp.	Hours	Cooking or preparing food (code 7) Shopping for family (code 8) Cleaning, dusting, sweeping, washing dishes or clothes, ironing, or doing other household chores (code 9) Taking care of others, such as bathing, feeding, or looking after children, the sick, or the elderly (code 12) Fetching water or firewood (code 10) Repairs in or around the home (code 11) Improving land or buildings (code 28) <i>Note: All codes representing "chores" in survey</i>	X X X X X X X	- - - - - - -	L1 to L48
3.5	Hours enjoying leisure	Resp.	Hours	Rest, watching TV, listening to the radio, reading a book, watching a movie, watching sports, or sewing (code 6) Visiting or entertaining friends (code 14) Playing sports (code 17) Spending time with spouse or partner (code 18) <i>Note: All codes representing "leisure" in survey</i>	X X X X	- - - -	L1 to L48

Table 6. Productivity major outcomes

ID	Outcome	Unit	Type	Component(s)	R1	R2	Survey no. (R1, R2)
4.1	Agriculture – Land use	HH	Proportion	Proportion of total land used for agricultural activities	X	-	C4a, C4b, D1c
4.2	Irrigation	HH	Indicator	Household used irrigation in last 12 months	X	X	D2e
4.3	Agriculture – Monthly revenue	HH	Total	Revenue from selling crops Revenue from selling livestock or livestock products Revenue from selling poultry or poultry products Revenue from selling fish Revenue from selling other agricultural produce <i>Note: Household revenue over past month</i>	X X X X X	X X X X X	D4a D4c D4e D4g D4i
4.4	Agriculture – Hours worked	Resp.	Total	Hours worked in agriculture in last 7 days	X	X	D3a
4.5	Employed or own business - Household	HH	Proportion	Proportion of household members (18 and over) currently employed or running their own business	X	X	A8
4.6	Business at household	HH	Indicator	Business operated out of household compound	X	-	sE1_15cdescpremis e, sE1_51otherbus
4.7	Employed or own business – Individual	Resp.	Indicator	Currently self-employed, running a business, employed, or working for pay	X	X	sE1_1selfemp, sE2_1employed
4.8	Employed or own business – Individual monthly compensation	Resp.	Total	Monthly compensation, sum of last month compensation across all jobs and businesses	X	X	sE2_11, sE1_9aprofit, sE1_56profit
4.9	Employed or own business – Individual hours worked	Resp.	Total	Hours worked in self-employment in last 7 days Hours worked in employment in last 7 days	X X	X X	sE1_5wrkhrs sE2_7hours_1
4.10	Household chores – Individual hours worked	Resp.	Total	Hours spent doing household chores in last 7 days	X	X	sL_49hhchores
4.11	Total hours worked	Resp.	Total	Total hours worked in agriculture, self-employment, employment, and household chores in last 7 days	X	X	See 4.3, 4.8, and 4.9 above
4.12	Total household earnings	HH	Value	Sum of earnings for all household members that are employed or running their own business, as well as agricultural earnings. (last 30 days)	-	X	A8, D4 ( <i>R2 only</i> )

Table 7. Wealth major outcomes

ID	Outcome	Unit	Type	Component(s)	R1	R2	Survey no. (R1, R2)
5.1	Savings	Resp.	Total	Savings in mobile bank account Savings in SACCO, merry-go-round, or ROSCA Savings in formal bank account	X X X	X X X	G2a G2b G2c
5.2	Housing quality	HH	Index	Indicator for high-quality floors Indicator for high-quality roof Indicator for high-quality walls	X X X	X X X	C1a C1b C1c
5.3	Value of livestock assets	HH	Estimated value	Value of chickens owned Value of cattle owned Value of goats owned Value of pigs owned Value of sheep owned	X X X X X	X X X X X	C8a C8b C8c C8d C8e
5.4	Value of appliance assets	HH	Estimated value	Value of listed electrical appliances	X	X	F19a to F19c
5.5	Value of other assets	HH	Estimated value	Value of beds owned Value of bednets owned Value of kerosene stoves owned Value of kerosene lamps owned Value of hoes owned Value of bicycles owned Value of motorcycles owned Value of cars or trucks owned Value of sofa piece seats owned	X X X X X X X X X	X X X X X X X X X	C7a C7b C7c C7d C7e C7f C7g C7h C7i
5.6	Total asset value	HH	Estimated value	Estimated value of savings, livestock, electrical appliances, and other assets	X	X	See 5.1, 5.3, 5.4, and 5.5 above

Table 8. Consumption major outcomes

ID	Outcome	Unit	Type	Component(s)	R1	R2	Survey no. (R1, R2)
6.1	Neediness index	HH	Index	Consumption of each of 23 goods over past twelve months, constructed according to the measure in Ligon (2015)	X	-	M5, M7, M8
6.2	Annual consumption	HH	Value	Estimated value of annual consumption of 23 goods <sup>4</sup>	X	X	M5, M7, M8 (for Round 1) sm_1staple, sm_2veg, sm_3meat, sm_4fruit, sm_5other (for Round 2)
6.3a	Consumption diversity	HH	Index	Indicators for whether household has consumed each of 23 goods over the past twelve months	X	-	M1
6.3b	Consumption diversity	HH	Index	Indicators for whether household has consumed each of 23 goods over the past week	-	X	M1
6.4	Meals	Resp.	Total	Total number of meals eaten yesterday	X	X	sH1_1meals
6.5	Protein meals	Resp.	Total	Total number of meals eaten yesterday including meat or fish	X	X	sH1_2ameat

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<sup>4</sup> Note that for Round 2, we will estimate annual consumption based on how the respondent reports consumption from the past seven days.

Table 9. Health and wellbeing major outcomes

ID	Outcome	Unit	Type	Component(s)	R1	R2	Survey no. (R1, R2)
7.1	Respiratory illness index	Resp.	Index	Persistent cough Asthma/breathlessness at night <i>Note: Experienced over past 4 weeks</i>	X X	- -	sH1_7bcough sH1_7sasthma
7.2	Respiratory illness index - Child	Child	Index	Frequent cough Itchy or stinging eyes Sore throat Runny nose Asthma or breathlessness <i>Note: Experienced over past 7 days</i>	X X X X X	- - - - -	T3.5
7.3	Recent symptoms index	Resp.	Index	Fever Persistent cough Persistent tiredness Stomach pain Blood in stool Rapid weight loss Frequent diarrhea Skin rash or irritation Open sores/boils Difficulty swallowing Sores or ulcers on the genitals Asthma/breathlessness at night Frequent and excessive urination Constant thirst/increased drinking of fluids Unusual discharge from the tip of penis ( <i>for men only</i> ) Other symptoms <i>Note: All symptoms experienced over past 4 weeks</i>	X X X X X X X X X X X X X X X X X	- - - - - - - - - - - - - - - - -	sH1_7afever sH1_7bcough sH1_7ctired sH1_7dstomach sH1_7fstool sH1_7gweightloss sH1_7hd diarrhoea sH1_7iskin sH1_7jboils sH1_7kswallow sH1_7pgenitalsore sH1_7sasthma sH1_7tfrequirine sH1_7uthirst sH1_7wdischarge sH1_7xother
7.4	Recent illnesses index	Resp.	Index	Worms	X	-	sH1_7eworms

				Malaria Typhoid Tuberculosis Diabetes Cholera Yellow fever <i>Note: All illnesses experienced over past 4 weeks</i>	X X X X X X X	-	sH1_7mmalaria sH1_7ntyphoid sH1_7otb sH1_7vdiabetes sH1_7qcholera sH1_7ryellow	
7.5	Recent illnesses index - Child	Child	Index	Malaria Fever Typhoid <i>Note: All symptoms experienced over past 7 days</i>	X X X	-	T3.5	
7.6	Subjective health	Resp.	Indicator	Self-described health is either “good” or “very good”	X	-	sH1_13healthgd	
7.7	Subjective health - Child	Child	Indicator	Self-described health is either “good” or “very good”	X	-	T3.4	
7.8	Life satisfaction	Resp.	Scale	Life satisfaction based on a scale of 1 to 10	X	-	J9b	

Table 10. Education major outcomes

ID	Outcome	Unit	Type	Component(s)	R1	R2	Survey no. (R1, R2)
8.1	English score	Child	Z-score <sup>5</sup>	English reading test result	X	-	T1
8.2	Math score	Child	Z-score	Math test result	X	-	T2
8.3	Average test score	Child	Z-score	Average of English reading test result and Math test result	X	-	T1, T2
8.4	Study hours - Total	Child	Total	Self-reported hours spent studying during the day Self-reported hours spent studying during the night	X X	- -	T3.1 T3.2
8.5	Study hours - Night	Child	Total	Self-reported hours spent studying during the night	X	-	T3.2
8.6	Attendance index	Child	Index	Fully completed first week of school last term Fully completed last week of school last term Completed end of term exams last term Fully completed first week of school this term	X X X X	- - - -	B2b B2c B2d B2e
8.7	Grades	Child	Score	Marks (scaled out of 100) earned last term	X	-	B2f
8.8	Ambitions	Child	Indicator	Student planning to attend post-secondary education	X	-	T3.7
8.9	KCPE	Child	Indicator	Child took KCPE exam	-	X	A100
8.10	KCPE score	Child	Z-score	KCPE score	-	X	A100
8.11	KCPE age	Child	Age	Age of child when took KCPE exam	-	X	Section A

<sup>5</sup> We will create Z-scores by subtracting the mean and dividing by the standard deviation in the control group within our own sample, using age-gender groups.

Table 11. Social and political attitudes major outcomes

ID	Outcome	Unit	Type	Details	R1	R2	Survey no. (R1, R2)
9.1	Radio	Resp.	Total	Days in the past week respondent listened to the radio	X	X	J2a
9.2	Television	Resp.	Total	Days in the past week respondent watched television	X	X	J2c
9.3	Internet	Resp.	Total	Days in the past week respondent used the internet	X	X	J2d
9.4	Political and social awareness index	Resp.	Index	Knows date of next election	X	-	J1a
				Knows name of the president of Tanzania	X	-	J1b
				Knows name of the president of Burundi	X	-	J1c
				Knows name of a candidate in the 2016 U.S. presidential election	X	-	J1d
				Knows name of the CEO of Safaricom	X	-	J1e
				Knows name of the Managing Director of Kenya Power	X	-	J1f
				Knows the intended recipients of the Kenyan national government's Free Laptop program	X	-	J1i
				Knows who was responsible for the 2015 terrorist attacks at Garissa University	X	-	J1j
				Knows which team won the 2015-2016 English Premier League	X	-	J1g
				Knows who sings the pop song "Sura Yako"	X	-	J1h
<i>Note: These are all binary variables</i>							
9.5	Approval of national government index	Resp.	Index	Trusts national government	X	-	J5g
				Uhuru Kenyatta is doing a good job as president	X	-	J7a
				Government is doing a good job fighting terrorism	X	-	J7b
				Government corruption is <u>not</u> a problem in Kenya	X	-	J7d
				Government is doing a good job ensuring that electricity is provided in Kenya	X	-	J7g
				<i>Note: Binary variable indicating "agree" or "strongly agree"</i>			
9.6	Gender equality index	Resp.	Index	It is acceptable for a woman to be a bus driver	X	-	J6a
				Important decisions of the family should <u>not only</u> be made by the man of the family	X	-	J6b
				If the wife is working outside the home, the husband should help her with household chores	X	-	J6c

				Women should have more opportunities to become political leaders <i>Note: Binary variable indicating “agree” or “strongly agree”</i>	X	-	J6d
9.7	Ethnic identity index	Resp.	Index	Ethnic identity is “important” or “very important” in respondent’s life Indicator for belongs first to ethnic group (over other dimensions of identity)	X	-	J4e
					X	-	J4f
9.8	Religiosity index	Resp.	Index	Religious identity is “important” or “very important” in respondent’s life Indicator for belongs first to religious group (over other dimensions of identity) Attends church/mosque regularly Attended church/mosque last week	X	-	J4d
					X	-	J4f
					X	-	J4a
					X	-	J4b
9.9	Social trust index	Resp.	Index	Trusts people, in general Trusts members of their own ethnic group Trusts members of other ethnic groups Trusts members of their own religion Trust members of other religions <i>Note: Indicator for “can be trusted” or “can be somewhat trusted”</i>	X	-	J5a
					X	-	J5b
					X	-	J5c
					X	-	J5d
					X	-	J5e

Table 12. Community primary outcomes

ID	Outcome	Unit	Type	Details	R1	R2	Survey no. (R1, R2)
10.1	Comm. electrification rate	Com.	Proportion	Estimated community electrification rate	X	X	See Section 2.3
10.2	Comm. electricity reliability index	Com.	Index	Proportion of connected households reporting power blackouts in past 7 days Proportion of connected households reporting regular blackouts	X X	X X	F10c, F10d F10e
10.3	Value of assets inequality	Com.	Index	Gini coefficient capturing within-community dispersion in total asset value	X	X	See 5.6 above
10.4	Education inequality	Com.	Index	Gini coefficient capturing within-community dispersion in student test score results (we use tests administered by the research team for Round 1 and KCPE scores for Round 2)	X	X	T1, T2 For R2, see 8.10 above
10.5	Consumption inequality	Com.	Index	Gini coefficient capturing within-community dispersion in total consumption of 23 consumption goods	X	-	M5, M7, M8
10.6	Gini coefficient for weekly consumption	Com.	Index	Gini coefficient capturing within-community dispersion in total consumption of 23 consumption goods	-	X	Section M
10.7	Perceived income inequality	Com.	Proportion	Proportion of respondents agreeing with statement that economic inequality is a problem in this village	X	-	J7e
10.8	Gini coefficient for total household earnings	Com.	Index	Gini coefficient capturing within-community dispersion in total household earnings	-	X	A8, D4
10.9	Voting	Com.	Proportion	Proportion of community that voted for Uhuru Kenyatta in the August 2017 general elections	-	X	Voting data from August 2017 national elections

Table 13. Safety and crime major outcomes

ID	Outcome	Unit	Type	Details	R1	R2	Survey no. (R1, R2)
11.1	Safety	Resp.	Indicator	Area is described as “very secure” or “secure”	-	X	J10
				Livestock stolen in last 12 months			J11
				Household items stolen in last 12 months			J12
				Cash stolen in last 12 months			J13
				Assaulted without weapon in last 12 months			J14
11.2	Crime	Resp.	Index	Assaulted with weapon in last 12 months	-	X	J15
				Victim of arson in last 12 months			J16
				Victim of witchcraft in last 12 months			J17
				Other crime in last 12 months			J18

## Appendix A - LSK Baseline (2014)

Survey information
Greetings! You are about to begin "Living Standards Kenya 2014". Please fill in the following questions before engaging the respondent.
1. Please select your name:
2. Please enter your IPA ID number:
3. Elder/ guide name:
4. Transformer ID:
5. Household ID:
Great! We are set to go. When you are ready, please approach the respondent, introduce yourself, and begin the interview. Good luck!
Informed consent
READ: Hello. How are you? I am [your name] from IPA, a research organization based in Busia town. We are conducting research on living standards in the rural parts of Kenya. We visited this area a while back, accompanied by village elder [village elder name] in order to know who lives in this area.
You have been randomly selected into our survey today. I trust that [village elder name] informed you of our visit today on [respondent contact/ tracking sheet]. I would like to ask you questions to help us understand the living standards of the people in this area.
I will keep everything that you tell me entirely private and will not talk to other people about what you say. I ask that you speak honestly, since we are only interested in collecting information at this point. There are no "right" or "wrong" answers. You can choose to stop this survey at any point in time or refuse to answer certain questions. If you have any questions, you can contact the person in charge of this survey at IPA.
Would you be willing to volunteer roughly 90 minutes of your time to speak with me?
NOTE: Please ensure that you give a copy of the consent form to the respondent.
Informed consent not obtained
READ: Thank you for your time and I hope that you have a wonderful day.
NOTE: Kindly exit the household so that you can take the GPS coordinates and finalize this survey.
Record your location.
Please enter any additional comments.

## Appendix A - LSK Baseline (2014)

Section A - Roster
Main household
READ: Thank you. To begin, I would like to understand how many people live with you in your household and in this wider compound. Let us begin by thinking of only the people who live in this particular household.
1a. How many people in total live in your household and eat from the same pot?
1b. How many other people usually sleep or eat in your household that you have not counted?
1c. How many people that you have already counted use another home as their primary residence?
READ: For the remainder of this survey, when I ask you about your household, I would like you to only think of the \${hhszie} people that we have just identified as living in your household.
Compound
READ: I would now like you to think about the wider compound (not just your household).
2a. How many people in total live in this compound (including yourself)?
2b. How many separate households (i.e. "pots") are in this compound (including your own)?
Paper section
READ: Can you please list the names of the \${hhszie} people that are the core members of this household?
NOTE: Please write down the names of each household member on the unique roster sheet, beginning with the respondent, followed by the spouse, and then other household members beginning with the eldest. Do not forget to record the Site ID and HH ID.
NOTE: For each of the roster names that you have written down, please enter the following information, beginning with the respondent.
Roster sheet number
Birth
4a. Gender:
4b. Month of birth:
4c. Year of birth:
4d. Is this an estimated date of birth?
READ: So this person is \${dob} years old? (Note: If this is incorrect, go back and correct the date.)
Occupation and education
5a. Relationship to respondent:
5b. Highest level of education completed:
5c. Primary occupation(s):
5d. If highest education completed is other, please specify.
5e. If primary occupation is other, please specify.
Contact details
READ: I would now like to ask you for some basic contact information.
6a. Do you have a phone number available so that we can contact you in future interview rounds?
6b. Respondent phone number:
6c. Who's phone number is this?
6d. Relationship to respondent:
6e. Do you have a spouse?
6f. Does your spouse live in this household?
6g. Even though your spouse does not live here, is he/she involved in your day-to-day household decisions?
6h. Please enter the roster number of the spouse.
6i. Contact phone number of spouse:
7a. Alternate contact common name:
7c. Alternate contact phone number:

## Appendix A - LSK Baseline (2014)

### Living Standards Kenya (LSK) - Paper Roster Sheet

Transformer ID: 

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 DD/MM/YY: 

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 / 

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 / 

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Household ID: 

--	--

Field Officer ID: 

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Please write down the names of each household member, beginning with the respondent.

ID	Name (FIRST MIDDLE LAST)
----	--------------------------

*Record name of respondent first:*

1	
---	--

*Now, record names of other household members:*

2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	

## Appendix A - LSK Baseline (2014)

<b>Section B - Children's education</b>
Introduction
READ: I would now like to ask you about the education levels of the children living in this household.
NOTE: The following section should be completed for up to two school-age child closest to Class 8. You should only record details for two children.
Child
School type
1a. Please enter the roster number for this child.
1b. What type of school does this child attend?
1c. Why doesn't this child attend school?
1d. If other, please specify.
Schooling participation
2a. During the current academic year, what class/ form is this student enrolled in?
2b. Last term, did this student fully complete the first week of school?
2c. Last term, did this student fully complete the last week of school?
2d. Last term, did this student sit for the end of term exams?
2e. Last term, how many total marks did this student earn?
2f. Did this student pass the last term?
2g. Are you planning to send this student to school during the next academic year?
2h. Why not?
Study habits
NOTE: For the following questions, please try to ask the student directly. Enter 12:34 if don't know.
3a. What time does this student go to sleep when there is class the following morning?
3b. What time does this student wake up when there is class in the morning?
3c. Over the past 3 days, how many hours has this student spent studying?
3d. Over the past 3 days, how many hours has this student spent doing household chores?
3e. Over the past 3 days, how many hours has this student spent playing?

## Appendix A - LSK Baseline (2014)

Section C - Household characteristics
<b>Building materials</b>
NOTE: Please observe the materials of the floors, roof and walls, and record your observations in the following
1a. What materials are the floors made of?
1b. What materials is the roof made of?
1c. What materials are the walls made of?
READ: I would now like to ask you a few questions about your home. Please think of your current residence only (i.e. the main house of the compound or the building where you eat). We are only interested in the current residence, not (necessarily) ancestral land (even if the current residence is a rental).
1d. How many separate rooms do you have in your household?
1e. What kind of toilet facilities does your household use most often?
1f. If floor material is other, please specify.
1g. If roof material is other, please specify.
1h. If wall material is other, please specify.
1i. If toilet is other, please specify.
<b>Sources of water</b>
2a. Over the past 7 days, what was your household's main source of drinking water?
2b. Over the past 7 days, what was your main source of water for other household activities?
2c. Have you ever done anything to your drinking water to make it safe to drink? If yes, what did you do?
2d. If drinking water is other, please specify.
2e. If other activities water is other, please specify.
2f. If treatment is other, please specify.
READ: How many of the following assets does your household own?
<b>Household assets</b>
3a. Bed
3b. Bednet
3c. Sofa pieces
3d. Kerosene stove
3e. Clock/watch
3f. Hoe
3g. Kerosene lamp
3h. Sewing machine
3i. Bicycle
3j. Motorcycle
3k. Car/truck

## Appendix A - LSK Baseline (2014)

Section D - Land and agriculture
Introduction
READ: Thank you. I would now like to ask you about your land and agricultural activities.
1a. Does your household own any land?
1b. Does your household rent-in any land?
1c. Does your household own or rent the house where you live?
1d. Over the past 7 days, have you or any member of your household performed any agricultural or pastoral activities for your household?
1e. Does your household own any livestock?
Landowner
READ: Thank you. I would now like to ask you a few details about the land that you own.
2a. How much land does your household own?
2b. How much of this land is used for agricultural purposes?
2c. Over the past 12 months, did you rent out any of your land to people outside your household?
2d. How much of your land did you rent out?
2e. How much money do you receive each month for renting out this land?
Land renter
READ: You mentioned that you rent land. I would like to learn more about your rental activities.
3a. Over the past 12 months, how much land did you rent from others?
3b. How much of this land is used for agricultural purposes?
3c. Over the past 12 months, for which months did you rent this land?
3d. On average, how much did you pay each month to rent this land?
Home renter
4a. How much must you pay each month to rent this house?
4b. What is the name of your landlord?
4c. Relationship to respondent:
Activities
5a. What are the agricultural or pastoralist activities that members of your household perform?
5b. If other, please specify.
5c. What is the total size of the land that you use for all of these activities?
5d. For which activities are you the main decision maker?
Agriculture
READ: Thank you. I would now like to ask you a few details about your agricultural activities.
6a. What crops do you grow?
6b. Over the past 12 months, did you use any of the following?
Agricultural labor
READ: Thank you. I would now like to ask you how much time you and members of your household spend on these agricultural activities. Over the past 7 days...
7a. ...how many hours did you work in total on these activities?
7b. ...how many hours did your spouse work in total on these activities?
READ: Over the past 6 months...
7c. ...how many members of your own household worked on these activities?
7d. ...how many workers from outside your household did you hire in total for these activities?
Income from land-related activities
READ: Over the past 12 months, how much did you receive in total sales from...
8a. ...selling crops?
8b. ...selling livestock/ livestock products?
8c. ...selling poultry/ poultry products?
8d. ...selling fish?
8e. ...selling your "other" activity?
Livestock
READ: How many of the following livestock does your household own?
9a. Chickens
9b. Cattle
9c. Goats
9d. Pigs
9e. Sheep

## Appendix A - LSK Baseline (2014)

Section E - Employment and income-generating activities
Introduction
READ: Thank you. I'd now like to ask you about your employment and income-generating activities.
1a. Other than farming, are you currently self-employed or running a business to earn a living?
1b. What about your spouse?
1c. Are you currently employed with a business/ organization? If so, what is your position?
1d. What about your spouse?
Business or self-employment activity
READ: I'd now like to learn about each of the businesses (or the activities that are performed while self-employed) in this household. Let's start with the business/ self-employment position that is the most important to you. Afterwards, we will continue on to any others.
Note: Collect information about the businesses or self-employment activities of the spouse as well, if applicable.
History
2a. Who performs this business/ self-employment activity?
2b. What is this occupation/ business?
2c. Does this occupation/ business use electricity?
2d. If other, please specify.
2e. In what year was this business/ self-employment activity started?
2f. How much had to be invested in order to start, purchase or gain control of this business?
2g. What was the main source of investment funds for this business?
2h. If other, please specify.
Labor
3a. How many workers in total are currently employed in this activity?
READ: Over the past 7 days, how many hours in total...
3b. ...did you work in this business?
3c. ...did your spouse work in this business?
READ: Over the past year, in which months...
3d. ...did you work in this business?
3e. ...did your spouse work in this business?
Revenue and profit
READ: I'd like to ask you a few more details about this particular business/ self-employment activity. Please remember that any data we collect will be kept entirely confidential.
4a. Over the past month, what was your total revenue (money-in only)?
4b. Over the past month, what was your total profit?
Entrepreneurship aspirations
READ: I'd now like to ask you about your future business ambitions.
5a. Would your household want to start its own (or another) business in the next five years?
5b. What kind of business would you start?
5c. If other, please specify.
5d. Can you tell me why your household hasn't been able to start this business?
5e. If other, please specify.
5f. In your opinion, what is the biggest constraint(s) for people who own their own businesses?
5g. If other, please specify.
Employment activity
READ: Earlier, you mentioned that you were currently employed (for income) with a business/ organization. I'd now like to ask you some details about these positions.
Note: Be sure to collect information about the activities of the spouse as well, if applicable.
History and job description
6a. Who holds this position?
6b. What type of position is this?
6c. In what occupation/ business is this work?
6d. If other, please specify.
6e. In what year did this person start this position?
Working hours
7a. This position's working patterns could be best described as:

## Appendix A - LSK Baseline (2014)

7b. Over the past 12 months, in which months did this person work in this position?

7c. Over the past 7 days, how many hours did this person work in this position?

Compensation

READ: I'd like to ask you a few more details about this particular position. Please remember that any data we collect will be kept entirely confidential.

READ: In the last month that this person was working, what was the total value...

8a. ...of your gross cash salary?

8b. ...of your benefits?

## Appendix A - LSK Baseline (2014)

<b>Section F - Energy</b>
Sources of energy
READ: I would like to begin this section by asking you some questions about your energy use.
1a. Is this household connected to the national grid?
1b. What is your main source of lighting energy?
1c. What are your other (secondary) sources of lighting energy?
1d. What is your main source of cooking energy?
1e. What are your other (secondary) sources of cooking energy?
1f. Do you use any additional sources of energy?
1g. What are these sources of energy?
1h. If main source of lighting energy is other, please specify.
1i. If secondary source of lighting energy is other, please specify.
1j. If main source of cooking energy is other, please specify.
1k. If other source of cooking energy is other, please specify.
1l. If additional sources of energy is other, please specify.
Unconnected household
READ: Thank you. I would now like to ask you about your history with electricity. What are the reasons why your household does not have electricity?
NOTE: Allow respondent to respond naturally. When he/she has finished, select all of the reasons that apply.
2. Please select all that apply.
Past experience and history
3a. Have you ever lived in a building with electricity?
3b. For how many years of your life did you spend living in a building with electricity?
4a. Has anyone in this household ever applied for a connection with Kenya Power (KPLC) or Rural Electrification Authority (REA)?
4b. When did your household apply for this connection?
4c. What is the current status of your application?
4d. If other, please specify.
4e. Why was your application rejected?
Connected households
5a. Over the past 7 days, has this connection delivered any power to your home?
When was this household first connected to electricity?
5b. Month of connection:
5c. Year of connection:
5d. Did you experience any challenges obtaining wayleaves from your neighbors to connect your home?
5e. How many households within your compound are connected to electricity?
5f. Is there an electricity meter installed in your household?
5g. How many unique households (i.e. "pots"), including your own, are connected to your electricity meter?
5h. If you do not have an electricity meter in your household, from whom do you receive electricity service?
5i. Last month, how did you pay for your electricity service?
5j. Last month, how much did your household pay on its electricity bill?
5k. Do you use any devices to protect your appliances from power surges?
6a. Did you experience any power blackouts in the past three days?
Blackouts and power quality
6b. For roughly how many hours was the power not working in the past 3 days?
6c. At what point of the day was the power not working?
6d. Do these types of blackouts occur regularly?
6e. Do you expect that the reliability of your electricity supply will improve in the future?
READ: Thank you. I would now like to ask you details about your energy sources.
Kerosene usage

## Appendix A - LSK Baseline (2014)

7. In the past 7 days, how much money in total did your household spend on kerosene?
Solar lanterns
8a. How many solar lanterns does your household use?
READ: I'd like you to think only about the main solar lantern that you use.
8b. Do you own, rent or hire purchase this solar lantern?
8c. How much did you pay for this solar lantern?
8d. In the past month, how much did you pay to rent or hire purchase this solar lantern?
8f. Does your solar lantern allow you to charge mobile phones?
Solar home systems
9a. How many solar home systems does your household use?
READ: I'd like you to think only about the main solar home system that you use.
9b. Do you own, rent or hire purchase this solar home system?
9c. How much did you pay for this solar home system?
9d. In the past month, how much did you pay to rent or hire purchase this solar home system?
9e. Does your solar home system allow you to charge mobile phones?
Batteries (dry cells) & car batteries (wet cells)
10a. How much did you pay to purchase your wet cell (i.e. car) batteries?
10b. In the past 7 days, how much did you spend recharging your wet cell (i.e. car) batteries?
10c. In the past 7 days, how much did you spend on your dry cell batteries?
10d. Is this because your batteries are rechargeable?
Generator
11a. When did your household first begin using a generator?
11b. How much did you pay for this generator?
11c. In the past 7 days, how much did you spend on fuel for this generator?
11d. For what activities do you use this generator?
11e. If other, please specify.
Other sources of energy
12a. In the past 7 days, how much did you spend on purchased firewood?
12b. In the past 7 days, how much did you spend on charcoal?
12c. In the past 7 days, how much did you spend on LPG?
12d. In the past 7 days, how much did you spend on sawdust?
READ: Earlier, you mentioned that you use another source of energy. In the past 7 days, how much did you
12e. ...on this other source of lighting fuel?
12f. ...on this other source of cooking fuel?
12g. ...on this other source of additional energy?
Additional energy costs
13. In the past 7 days, how much money was spent to recharge all of your household's mobile phones?
READ: Thank you. Now I'd like to ask you about your indirect energy costs.
NOTE: Try naming the various energy sources to aid the respondent. For example, do you use a boda boda to pick up kerosene etc.? This should include the cost of associated with taking a phone to be recharged as well.
14a. In the past 7 days, have you spent any additional money in order to collect/ acquire your energy
14b. In the past 7 days, how much additional money did you spend to acquire all of your energy sources?
Lighting hours
READ: Thank you. I'd now like to ask you about your lighting hours. What time did you...
15a. ...Begin using your lighting last night?
15b. ...Stop using your lighting last night?
15c. Did you use your lighting this morning as well?

## Appendix A - LSK Baseline (2014)

What time did you...
15d. ...Begin using your lighting this morning?
15e. ...Stop using your lighting this morning?
Willingness to pay
READ: As you know, electricity requires two types of payments: First, you must pay for the connection cost. Second, you must pay for the monthly service fee (i.e. bill). I'd like you to first think about only the connection cost.
16a. How much do you think it costs to obtain an electricity connection?
READ: I would now like you to think about a situation that is not real. This is just a hypothetical situation. Imagine that you could pay a "lump sum" price for an electricity connection. In other words, you are offered a price and you have a period of time to decide whether to take this price. If you decide to take the price, you have to pay all at once, after which you are immediately connected.
16b. Would you be willing to pay \${aa6} Ksh for an electricity connection?
16c. Imagine that you were offered an electricity connection at this price today, and you were given 6 weeks to complete the payment. Would you accept the offer?
16d. Why not?
16e. If other, please specify.
READ: Now, I would like to ask you about another situation that is not real. Suppose that you are able to "hire purchase" an electricity connection. If you choose to accept this plan, you will have to pay a deposit at the beginning, after which you will be required to pay a fixed amount each month for a certain number of months.
16f. Suppose that the full price of an electricity connection is \${aa11}. Would you be willing to pay \${aa7} Ksh as a deposit, followed by monthly payments of \${aa8} Ksh for a period of \${aa9} years for an electricity connection? Note: In total, you would be paying \${aa10} Ksh over the lifetime of the plan.
16g. Imagine that you were offered an electricity connection under this plan today, and you were given 6 weeks to pay the deposit. Would you accept the offer?
16h. Why not?
16i. If other, please specify.
16j. Would a different payment frequency change your previous decision to refuse the hire purchase offer?
16k. In the plan that I have just described, you would be required to make payments on a monthly basis. If you could choose whether to make payments on a daily, weekly, or monthly basis, what would you choose?
16l. Please enter any additional comments.
READ: Now suppose that the full price of an electricity connection is 35,000 Ksh. You are still able to "hire purchase" an electricity connection. However, a deposit is no longer required. You will only have to pay a fixed amount each month until you have fully paid the 35,000 Ksh in total. Example: If the fixed amount is 1,000 Ksh, you would have to pay this amount for 35 months.
16m. How much would you be willing to pay each month for an electricity connection until the 35,000 Ksh has been fully paid?
16n. Imagine that you were offered an electricity connection under this plan today. Would you accept the offer?
16o. Why not?
16p. If other, please specify.
READ: Now, I would like you to think about only the monthly service fee (i.e. bill).
16q. How much of your income could you afford to pay per month for electricity service?
Electrical appliances
READ: Thank you. Now I'd like to ask you about electrical appliances.
17a. Does your household own any electrical appliances?
17b. What electrical appliances do you own?
17c. If other, please specify.
17d. What will be the next electrical appliance(s) that you will purchase?
17e. If other, please specify.
17f. If you had an electricity connection, what would be the next electrical appliance(s) that you would purchase?
17g. If other, please specify.

## Appendix A - LSK Baseline (2014)

Section G - Miscellaneous
Savings activities
READ: I would like to begin this section by asking you some questions about your savings activities.
1a. Do you have a bank account?
1b. Do you use any mobile banking services?
1c. Do you participate in a SACCO, merry-go-round, or ROSCA?
READ: In the past 12 months...
1d. ...have you ever borrowed money from a commercial bank/ lender, moneylender, or someone else outside your household?
1e. ...did you ever try to borrow money but were refused? If so, from who did you try to borrow money?
Awareness
READ: Thank you. Over the past 7 days, on how many days did you...
2a. ...listen to the radio?
2b. ...read the newspaper?
2c. ...watch the television?
Please name the...
3a. ...current President of Tanzania for me.
3b. ...current President of Uganda for me.
3c. ...immediate former President of the United States for me.
Safety
4. With regards to safety, would you describe this area as somewhat secure, very secure or insecure?

## Appendix A - LSK Baseline (2014)

Section H - Time use
READ: I would now like to ask about your activities during the past 24 hours starting with yesterday at 6am up until this morning at 6am. For each half hour, you should tell me what you did during that half hour. If you had several activities, please let me know the main activity.
A. Morning activities
6:00 - 6:30
6:30 - 7:00
7:00 - 7:30
7:30 - 8:00
8:00 - 8:30
8:30 - 9:00
9:00 - 9:30
9:30 - 10:00
10:00 - 10:30
10:30 - 11:00
11:00 - 11:30
11:30 - 12:00
B. Afternoon activities
12:00 - 12:30
12:30 - 13:00
13:00 - 13:30
13:30 - 14:00
14:00 - 14:30
14:30 - 15:00
15:00 - 15:30
15:30 - 16:00
C. Evening activities
16:00 - 16:30
16:30 - 17:00
17:00 - 17:30
17:30 - 18:00
18:00 - 18:30
18:30 - 19:00
D. Night activities
19:00 - 19:30
19:30 - 20:00
20:00 - 20:30
20:30 - 21:00
21:00 - 21:30
21:30 - 22:00
22:00 - 22:30
22:30 - 23:00
23:00 - 23:30
23:30 - 00:00
00:00 - 00:30
00:30 - 1:00
1:00 - 1:30
1:30 - 2:00
2:00 - 2:30
2:30 - 3:00
3:00 - 3:30
3:30 - 4:00
4:00 - 4:30
4:30 - 5:00
5:00 - 5:30
5:30 - 6:00

## Appendix A - LSK Baseline (2014)

Section I - Health
Consumption and habits
READ: I'd now like to ask you some questions about your own health and nutrition.
1a. How many meals did you eat yesterday?
1b. Over the past 7 days, have you smoked any cigarettes?
1c. Do you consume alcohol? If yes, over the past 7 days, how many alcoholic drinks have you had?
Over the past 4 weeks...
2a. ...have you slept under a mosquito net?
2b. ...have all of your children slept under a mosquito net?
Subjective health...
Over the past month...
3a. ...how much of the time have you been a very nervous person?
3b. ...how much of the time have you felt calm and peaceful?
3c. ...how much of the time have you been a happy person?
3d. ...how much of the time have you felt very sad?
3e. Would you describe your general health as somewhat good, very good or not good?
Illnesses and hospitals
4a. Over the past 4 weeks, which symptoms or illnesses have you experienced?
4b. If someone in the household were in labor, where would they go for services?
Over the past 4 weeks...
4c. ...how many days of work, housework, or school did you miss due to poor health?
4d. ...how many days of school did your child/ children miss due to a health related issue?
4e. ...how many days of work, housework or school did your spouse miss due to poor health?
4f. ...how many days of work, housework or school did other members of your household miss due to poor health?
Over the past 4 weeks, how much did your household spend in total (in cash or in-kind) on...
5a. ...hospital/ clinic medical care (not including medicine)?
5b. ...modern medicine to treat a health problem?
5c. ...traditional medicine to treat a health problem?

## Appendix A - LSK Baseline (2014)

Section K - Markets
<b>Posho mills</b>
READ: We have now come to the final section of this survey. In this section, I'd like to ask you about the grain and flour purchases in your household.
NOTE: In this section, "you" refers to the person in the respondent's household who typically visits a posho mill. For example, if it is the respondent's spouse who typically visits the posho mill, ask the respondent to try to remember the details about his/her spouse's last visit to a posho mill.
1a. Over the past 4 weeks, has anyone from your household visited a posho mill?
1b. Over the past 4 weeks, which grains were either purchased or ground at a posho mill?
1c. If nobody visited a posho mill, where do you obtain your grain and/or flour?
1d. If other, please specify.
1e. If other, please specify.
<b>Local posho mill</b>
READ: I'd like you to think about the posho mill that your household visits most often.
2a. Where is this posho mill?
2b. Is this an electric or diesel posho mill?
2c. What are the main reasons why your household frequents this posho mill?
2d. If other, please specify.
2e. How many times did members of your household visit this particular posho mill in the past month?
2f. Are there any other businesses/ shops located close to this posho mill?
<b>Last visit to local posho mill</b>
READ: I'd like you to now think about the last time your household visited this posho mill, regardless of the person who made the visit.
3a. When was this visit?
3b. Which member(s) of your household made this visit?
3c. Did you bring your own grains during this visit?
3d. How many minutes did it take you to travel there (one-way)?
3e. ...By what method?
3f. What did you purchase at the posho mill?
<b>Purchases during last visit</b>
READ: Thank you. I'd like you to continue thinking about the last time you visited this posho mill.
4a. How much did you spend in total on grinding services?
4b. For how many units?
4c. Specify unit.
4d. How much did you spend in total on vegetables and groceries?
4e. How much did you spend in total on grains?
4f. For how many units?
4g. Specify unit.
4h. How much did you spend in total on flour?
4i. For how many units?
4j. Specify unit.
4k. How much did you spend in total on livestock feed?
4l. How much did you spend in total on all other goods and services purchased from neighboring shops?
4m. Did you fetch any other basic, free necessities during this trip? If so, what did you fetch?
4n. How long did you wait at the posho mill?
<b>Grain/ flour consumption</b>
READ: I would now like you to think about the total amount of grains/ flour that your household has consumed over the past month.

## Appendix A - LSK Baseline (2014)

5a. How many units did your household consume in total?

5b. Specify unit.

5c. Of this amount, how many units were either purchased or milled at this particular posho mill?

5d. Specify unit.

## Appendix A - LSK Baseline (2014)

<b>Section Z</b>
Living Standards in Kenya (LSK) Survey - End time
READ: Thank you very much for your time, all of this information will be kept strictly confidential. We will follow up with you in a year or so. You will receive no direct benefits for having participated in this survey.
Comprehension and cooperation
NOTE: Thank you for your hard work! You have reached the end of the survey. Please fill in the remaining questions after you have exited the house.
1a. Rate the comprehension level of the respondent:
1b. Rate the cooperation level of the respondent:
Presence of others
2a. Was anyone else present during the interview?
2b. What is the name of this person?
2c. Did this person assist the respondent with his/her answers?
Location
3. Record your location.
Comments
4. Please enter any additional comments.

## Appendix B - LSK Follow-up Round 1 (2016)

Living Standards Kenya (LSK) Household Survey 2016	
<b>Informed consent</b>	
READ: Hello. How are you? I am [Name] from IPA, a research organization based in Busia town. We are conducting research on living standards in the rural parts of Kenya. As you may remember, we visited your household in 2014 and spoke with the household head. We would now like to follow-up to learn about your current standard of living.	
I will keep everything that you tell me entirely private and will not talk to other people about what you say. I ask that you speak honestly, since we are only interested in collecting information at this point. There are no "right" or "wrong" answers. You can choose to stop this survey at any point in time or refuse to answer certain questions. If you have any questions, you can contact the person in charge of this survey at IPA.	
Would you be willing to volunteer roughly 90 minutes of your time to speak with me?	
NOTE: Please ensure that you give a copy of the consent form to the respondent.	
<b>Informed consent not obtained</b>	
READ: Thank you for your time and I hope that you have a wonderful day.	
NOTE: Kindly exit the household so that you can take the GPS coordinates and finalize this survey.	
Record your location.	
Please enter any additional comments.	
<b>Section A - Roster</b>	
<b>Main household</b>	
READ: Thank you. To begin, I would like to understand how many people live with you in your household and in this wider compound. Let us begin by thinking of only the people who live in this particular household.	
1a. How many people in total live in your household and eat from the same pot?	
1b. How many other people usually sleep or eat in your household that you have not counted?	
1c. How many people that you have already counted use another home as their primary residence?	
READ: For the remainder of this survey, when I ask you about your household, I would like you to only think of the people that we have just identified as living in your household.	
<b>Compound</b>	
READ: I would now like you to think about the wider compound (not just your household).	
2a. How many people in total live in this compound (including yourself)?	
2b. How many separate households (i.e. "pots") are in this compound (including your own)?	
<b>Individual information</b>	
READ: Can you please list the names of the people that are the core members of this household?	
NOTE: Please write down the names of each household member on the unique roster sheet, beginning with the respondent, followed by the spouse, and then other household members beginning with the eldest. Do not forget to record the Site ID and Household ID.	
NOTE: For each of the roster names that you have written down, please enter the following information, beginning with the respondent.	
<b>Individual [#]</b>	
Birth	
4a. Name:	
4b. Gender:	
4c1. Month of birth:	
4c2. Year of birth:	
4d. Is this an estimated date of birth?	
<b>Occupation and education</b>	
5a. Relationship to respondent:	
5b. Highest level of education completed:	
5c. Primary occupation(s):	
5d. If highest education completed is other, please specify.	
5e. If primary occupation is other, please specify.	
<b>Contact details</b>	
READ: I would now like to ask you for some basic contact information.	
6a. Do you have a phone number available so that we can contact you in future interview rounds?	

## Appendix B - LSK Follow-up Round 1 (2016)

6b. Respondent phone number:
6c. Who's phone number is this?
6d. Relationship to respondent:
6e. Do you have a spouse?
6f. Does your spouse live in this household?
6g. Even though your spouse does not live here, is he/she involved in your day-to-day household decisions?
6h. Please enter the roster number of the spouse.
6i. Contact phone number of spouse:
7a. Alternate contact common name:
7c. Alternate contact phone number:

## Appendix B - LSK Follow-up Round 1 (2016)

Section B - Children's education
Introduction
READ: I would now like to ask you about the study habits for all of the children in your household born between 2004 (age 12) and 2001 (age 15).
NOTE: Please ensure that you have correctly identified all of the children born between 2001 and 2004 in Module A. If there are no children in this age group in this household, skip to next section.
Child
School type
READ: Let's begin with the child named [CHILD NAME].
1a. What type of school does this child attend?
1b. What is the name of this school?
1c. Why doesn't this child attend school?
1d. If other, please specify.
Schooling participation
2a. What class/ form is this student currently enrolled in?
LAST term (i.e., first term of 2016)...
2b. ...did this student fully complete the first week of school?
2c. ...did this student fully complete the last week of school?
2d. ...did this student complete the end of term exams?
THIS term (i.e., second term of 2016)...
2e. ...did this student fully complete the first week of school?
2f. Last term, how many total marks (out of 100) did this student earn?
2g. Did this student pass the last term?
2h. Has this student registered for the 2016 KCPE?
2i. What is the student's KCPE index (i.e., registration) number?
2j. Why not?
Study habits
NOTE: For the following questions, please try to ask the student directly. Enter 12:34 if don't know.
3a. What time does this student go to sleep when there is class the following morning?
3b. What time does this student wake up when there is class in the morning?
NOTE: Please try to ask the student the following questions directly.
Over the PAST 3 DAYS, how many hours has this student spent...
3c. ...studying?
3d. ...helping out with household chores?
3e. ...playing?
3f. ...helping out with farming activities?
3g. ...helping out with other labour/work activities outside the household?

## Appendix B - LSK Follow-up Round 1 (2016)

Section C - Household and land characteristics	
<b>Household</b>	
NOTE: Please observe the materials of the floors, roof and walls, and record your observations in the following questions.	
1a.	What materials are the floors made of?
1b.	What materials is the roof made of?
1c.	What materials are the walls made of?
1d.	What type of window coverings do you have?
READ: I would now like to ask you a few questions about your home. Please think of your current residence only (i.e. the main house of the compound or the building where you eat). We are only interested in the current residence, not (necessarily) ancestral land (even if the current residence is a rental).	
1e.	What kind of toilet facilities does your household use most often?
1f.	Over the past 7 days, what was your household's main source of drinking water?
1g.	If floor material is other, please specify.
1h.	If roof material is other, please specify.
1i.	If wall material is other, please specify.
1j.	If window coverings is other, please specify.
1k.	If toilet is other, please specify.
1l.	If drinking water is other, please specify.
<b>Land ownership</b>	
READ: Thank you. I would now like to ask you about your land.	
3a.	Does your household own any land?
3b.	Does your household rent-in any land?
3c.	Does your household own or rent this house?
<b>Landowner</b>	
4a.	How much land does your household own? In acres.
4b.	How much of this land is used for agricultural purposes? In acres.
4c.	Over the past 12 months, did you rent out any of your land to people outside your household?
4d.	How much of your land did you rent out? In acres.
4e.	How much money do you receive each month for renting out this land?
<b>Land renter</b>	
READ: You mentioned that you rent-in land. Over the past 12 months...	
5a.	...how much land did you rent from others? In acres.
5b.	...how much of this land was used for agricultural purposes?
5c.	...for which months did you rent this land?
5d.	...how much did you pay in total to rent this land?
<b>Home renter</b>	
READ: You mentioned that you rent this house.	
6a.	How much do you pay each month to rent this house?
When did you first begin renting this house?	
6b.	Select month.
6c.	Select year.
<b>Household assets</b>	
READ: How many of the following assets does your household own?	
7a.	Bed
7b.	Bednet
7c.	Kerosene stove
7d.	Kerosene lamp
7e.	Hoe
7f.	Bicycle
7g.	Motorcycle
7h.	Car/truck
<b>Livestock</b>	
8a.	Chickens

## Appendix B - LSK Follow-up Round 1 (2016)

8b. Cattle
8c. Goats
8d. Pigs
8e. Sheep

## Appendix B - LSK Follow-up Round 1 (2016)

Section D - Agriculture
Activities
1a. What are the agricultural or pastoralist activities that members of your household perform?
1b. If other, please specify.
1c. What is the total size of the land that you use for all of these activities?
1d. For which activities are you the main decision maker?
Agriculture
READ: Thank you. I would now like to ask you a few details about the agricultural activities of your household.
2a. What are all of the crops that you grow?
Based on this list of crops, please identify the three main crops that you grow.
2b. Crop #1.
2c. Crop #2.
2d. Crop #3.
2e. Over the past 12 months, did you use any of the following?
Agricultural labor
READ: Thank you. I would now like to ask you how much time you and members of your household spend on these agricultural activities. Over the past 7 days...
3a. ...how many hours did you work in total on these activities?
3b. ...how many hours did your spouse work in total on these activities?
READ: Over the past 6 months...
3c. ...how many members of your own household (including yourself) worked on these activities?
3d. ...how many workers from outside your household did you hire in total for these activities?
Income from agricultural activities
How much did your household receive in total in sales from selling crops...
4a. ...over the past month?
4b. ...over the past 12 months?
How much did your household receive in total in sales from selling livestock/ livestock products over the...
4c. ...over the past month?
4d. ...over the past 12 months?
How much did your household receive in total in sales from selling poultry/ poultry products over the...
4e. ...over the past month?
4f. ...over the past 12 months?
How much did your household receive in total in sales from selling fish over the...
4g. ...over the past month?
4h. ...over the past 12 months?
How much did your household receive in total in sales from selling your "other" activity over the...
4i. ...over the past month?
4j. ...over the past 12 months?

<b>Section E1:</b> <b>SELF-EMPLOYMENT: CURRENT AND HISTORY</b>
1. Other than in farming, are you currently self-employed or running a business to earn a living?
READ: Now we would like to learn about each of the current businesses you are running or the activities you are performing while self-employed, starting with your current most important self-employment position.
READ: Now, let's talk about your next business.
2. In what industry is this business?
2. SPECIFY OTHER INDUSTRY.
2a. In what occupation is this business?
2a. SPECIFY OTHER OCCUPATION:
2b. Does this business use electricity?
4. Are you the main decision-maker for this business?
4a. What is your relationship to the main decision-maker?
4a. SPECIFY OTHER RELATIONSHIP.
5. How many hours did you work in total in this business in the last 7 days?
6. In the last 12 months, how many months did you work in this business?
7. How many workers are you currently employing, not including yourself?
7a. How many of these workers live in your household?
7b. In the last month, what was the total amount of salary or wages paid to all workers?
7bi. IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?
7bii. CURRENCY IF NOT KSH:
7bii. SPECIFY OTHER CURRENCY.
8a. What were your total earnings (money in only – do not subtract any expenses) from this business in the last month?
Here we mean the amount you received from this business for sales & services provided before subtracting any expenses for payment of workers, or purchase of inputs, personal, or family items.
8ai. IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?
8aii. CURRENCY IF NOT KSH:
8aii. SPECIFY OTHER CURRENCY.
8b. What were your total earnings (money in only – do not subtract any expenses) from this business in the last 12 months?
Here we mean the amount you received from this business for sales & services pro-vided before subtracting any expenses for payment of workers, or purchase of inputs, personal, or family items.
8bi. IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?
8bii. CURRENCY IF NOT KSH:
8bii. SPECIFY OTHER CURRENCY.

## Appendix B - LSK Follow-up Round 1 (2016)

9a. What was your total profit from this business in the last month?

Here we mean the amount you received after paying for expenses for this business, including hired workers, money for household members who helped, purchase of goods for sale or for inputs, such as raw materials, fuel, and electricity, but before purchasing personal items for yourself or your household.

9ai. IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?

9aii. CURRENCY IF NOT KSH:

9aiii. SPECIFY OTHER:

9b. What was your total profit from this business in the last 12 months?

Here we mean the amount you received after paying for expenses for this business, including hired workers, money for household members who helped, purchase of goods for sale or for inputs, such as raw materials, fuel, and electricity, but before purchasing personal items for yourself or your household.

9bi. IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?

9bii. CURRENCY IF NOT KSH:

9biii. SPECIFY OTHER CURRENCY:

10. To whom do you primarily sell your products/services? By this I mean, who are your main customers?

10. SPECIFY OTHER CUSTOMERS.

READ: I'd like to remind you that the data we collect here is entirely confidential, and will not be reported to the authorities.

11. Is the business licensed with the local authority?

12. In what month and year did you start, purchase, or gain control of this business?

Month:

Year:

13. How much did you have to invest in order to start, purchase or gain control of this business?

13i. IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?

13ii. CURRENCY IF NOT KSH:

13iii. SPECIFY OTHER CURRENCY:

13a. How did you obtain the resources you initially invested in this business?

13a. SPECIFY OTHER:

13b. SPECIFY RELATION:

13b. SPECIFY OTHER RELATION.

14. Have you made any new investments or expansions to your business in the past 12 months?

14a. What type of investment or expansion was this?

14a. SPECIFY OTHER TYPE:

15. Do you own the premises of your business?

15a. How much do you pay for rent per month?

15ai. IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?

15aii. CURRENCY IF NOT KSH:

## Appendix B - LSK Follow-up Round 1 (2016)

15aii. SPECIFY OTHER CURRENCY:
15c. Please describe the premises / location in which you do your business.
15c. SPECIFY OTHER PREMISES:
15d. Is this a permanent, non-movable structure?
22. Have you experienced any vandalism or theft from your business in the last 12 months?
22a. Please describe this vandalism or theft. What happened? What was lost or damaged?
25. Do you currently have an electricity connection at your shop or work site?
26. Do you currently have a generator at your shop or work site?
IF THERE IS ANOTHER BUSINESS OR ACTIVITY, SELECT "ADD GROUP."
IF YOU HAVE RECORDED 3 ACTIVITIES, SELECT "DO NOT ADD" ANOTHER GROUP.
37b. Since January 2014, have you ever closed, sold or transferred control of a business?
READ: We would like to learn about the history of businesses you have closed, sold or transferred control of since January 2014
38. In what year did you most recently close, sell or transfer control of a business?
39. Did you close, sell or transfer control of the business?
39a. For what amount did you sell the business?
39ai. IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?
39aii. CURRENCY IF NOT KSH:
39aii. SPECIFY OTHER CURRENCY:
39b. To whom did you transfer or sell the business?
39b. SPECIFY OTHER RELATIONSHIP:
40. Why did you choose to close, sell or transfer control of your business?
40. SPECIFY OTHER REASON:
41. In what industry is this business?
41. SPECIFY OTHER INDUSTRY.
42. In the typical month you had this business, what was the total profit, in shillings?
42i. IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?
42ii. CURRENCY IF NOT KSH:
42ii. SPECIFY OTHER CURRENCY:
43. What were your total earnings (money in only – do not subtract expenses) from this business in the typical month that you had it?
43i. IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?
43ii. CURRENCY IF NOT KSH:
43ii. SPECIFY OTHER CURRENCY:
45. In the typical month, how many employees did you have in the business at any one time?
46. In what month and year did you start, purchase or gain control of this business?
MONTH:
YEAR:
48. IS THIS RESPONDENT CURRENTLY RUNNING A SMALL BUSINESS?
49. Would you want to start your own (or another) business in the next five years?
49a. What kind of business would you start?

## Appendix B - LSK Follow-up Round 1 (2016)

<b>49a. SPECIFY OTHER REASON</b>
49b. Please tell me the main reasons why you have not yet started a business (or another business).
<b>49b. SPECIFY OTHER REASONS:</b>
49c. How much funding would you need to start your own (or another) business?
50a. What are the three biggest barriers to the growth and success of your business?
50b. In your opinion, what is the biggest constraint(s) for people who own their own businesses?
<b>50a. SPECIFY OTHER BARRIER.</b>
<b>50b. SPECIFY OTHER CONSTRAINT</b>

## Appendix B - LSK Follow-up Round 1 (2016)

<b>SECTION E2. EMPLOYMENT: CURRENT AND HISTORY</b>
1. Are you currently employed, working for pay?
1a. Are you currently working as a volunteer, intern or an attachment, with either no pay or only occasional pay?
READ: Now we would like to learn about what jobs you currently hold, including both paid and unpaid jobs (and internships and attachments), starting with your most important position.
Please do not include self-employment positions in your answer.
Now, let's talk about your next job.
2. In what month and year did you start this job?
YEAR:
MONTH:
3. In what occupation is this work?
3. SPECIFY OTHER OCCUPATION:
5. In this position, what is your employment status?
5. SPECIFY OTHER STATUS:
6. This position's working patterns could be best described as:
6. SPECIFY OTHER PATTERN:
6a. In which months did you work at this job during the last 12 months?
7. How many hours did you work at this job during the last 7 days?
8. What is the relationship between you and your employer?
8. SPECIFY OTHER RELATIONSHIP:
10. Approximately how many other employees work at this place / business where you work?
11. What is / was the amount of your cash salary for the last month?
You listed \${sE2_11cash_1}. Is that correct?
IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?
11. CURRENCY IF NOT KSH:
11. SPECIFY OTHER CURRENCY:
12a. For the last month at this job, what was the total value of your: Payment in kind in food?
You listed \${sE2_12afood_1}. Is that correct?
12b. For the last month at this job, what was the total value of your: NSSF / health insurance?
You listed \${sE2_12bhealth_1}. Is that correct?
12c. For the last month at this job, what was the total value of your: Housing benefits?
You listed \${sE2_12chousing_1}. Is that correct?
12d. For the last month at this job, what was the total value of your: Uniforms / clothing benefits?
You listed \${sE2_12dclothing_1}. Is that correct?
12e. For the last month at this job, what was the total value of your: Training allowance?
You listed \${sE2_12etraining_1}. Is that correct?
12f. For the last month at this job, what was the total value of your: Other allowances and benefits?

## Appendix B - LSK Follow-up Round 1 (2016)

You listed \${sE2_12fother_1}. Is that correct?
12i. ARE THESE AMOUNTS REPORTED IN KENYAN SHILLINGS?
12i. CURRENCY IF NOT KSH:
12i. SPECIFY OTHER CURRENCY:
15. For how many weeks were you actively looking for work before you were hired for this job?
15a. How did you come to learn about this job opportunity?
15a. SPECIFY OTHER WAY:
SPECIFY FRIEND/RELATIVE:
SPECIFY OTHER RELATIONSHIP:
18. On average, how many minutes does it take you to get to this job from where you normally stay?
IF THE FR HAS ANOTHER JOB, CHOOSE "ADD GROUP".
18a. At any time since January 2014, were you employed, working for pay?
18b. In which months did you work at any job for pay during the last 12 months? Include the current month.
19. Are you currently looking for a job, or another job?
20. Why not?
20. SPECIFY OTHER REASON.
21. During the last 7 days, how many hours did you spend actively searching for jobs, applying for jobs, or in interviews?
22. During the last 7 days, what did you do to try to get a job, or another job?
22. SPECIFY OTHER:
22. SPECIFY OTHER FRIEND/RELATIVE.
22. SPECIFY OTHER RELATIONSHIP.
34. Did you leave a job this month?
35. Why did you leave this work?
35. SPECIFY OTHER REASON:

## Appendix B - LSK Follow-up Round 1 (2016)

Section F - Energy
Main and secondary energy sources
READ: I would like to begin this section by asking you some questions about your energy use.
1a. Does this household have a connection to the national grid?
1b. What is your main source of lighting energy?
1c. What are your other (secondary) sources of lighting energy?
1d. What is your main source of cooking energy?
1e. What are your other (secondary) sources of cooking energy?
1f. Do you use any additional sources of energy?
Other sources of energy
1g. What are these sources of energy?
1h. If main source of lighting energy is other, please specify.
1i. If secondary source of lighting energy is other, please specify.
1j. If main source of cooking energy is other, please specify.
1k. If other source of cooking energy is other, please specify.
1l. If additional sources of energy is other, please specify.
No electricity connection
READ: What are the reasons why your household does not have electricity?
NOTE: Allow respondent to respond naturally. When he/she has finished, select all of the reasons that apply.
2. Please select all that apply.
3a. Has anyone in this household ever applied for an electricity connection?
3b. When did your household apply for this connection?
3c. What is the current status of your application?
READ: As you know, electricity requires two types of payments: First, you must pay for the connection cost. Second, you must pay for the monthly service fee (i.e. bill). I'd like you to think about only the connection cost.
READ: I would like you to think about a situation that is not real. Imagine that there was no Last Mile Connectivity Project (LMCP). In addition, in order to obtain an electricity connection, you must pay a "lump sum" price. In other words, you are offered a price and you have a period of time to decide whether to take this price. If you decide to take the price, you have to pay all at once, after which you are immediately connected.
3d. Would you be willing to pay [TOTAL AMOUNT] Ksh for an electricity connection?
3e. Imagine that you were offered an electricity connection at this price today, and you were given 6 weeks to complete the payment. Would you accept the offer?
READ: Now suppose that no upfront payment is required and you are allowed to pay for an electricity connection slowly over time. In other words, you are required to pay a fixed amount each month, for a period of three years, until you have fully paid for the electricity connection.
3f. Would you be willing to pay [MONTHLY AMOUNT] Ksh each month for a period of three years, so that you will pay [TOTAL AMOUNT] Ksh in total?
Electricity connection
READ: When was this household first connected to electricity? Record the approximate date that electricity first began to flow into this household.
4a. Month of connection:
4b. Year of connection:
4c. In total, how much did you pay to connect your household to the electricity grid?
READ: I would like you to think about a situation that is not real. Please keep in mind that this is simply a hypothetical question. Imagine that there was no Last Mile Connectivity Project (LMCP).
4d. Would you be willing to disconnect your electricity connection in exchange for [TOTAL AMOUNT] Ksh? In other words, if Kenya Power offered to pay you [TOTAL AMOUNT], would you allow Kenya Power to disconnect your household, and take away the electricity poles around your household?
4e. Please think for a moment about how much you paid in total for your electricity connection. Knowing what you know today, would you pay this amount for electricity again?
4f. All things considered, how satisfied are you with your electricity connection?
4g. Over the past 7 days, has your electricity connection delivered power to your home?
4h. Why not?

## Appendix B - LSK Follow-up Round 1 (2016)

READ: How long has the electricity connection not been working?
4i: Length of time:
4j. Select units:
Electricity meter
4k. If other reason why there is no power, please specify.
5a. What type of electricity meter do you have?
5b. Where is this electricity meter installed?
5c. Please enter the meter number.
5d. Please re-enter the meter number.
5e. Is this electricity meter currently working?
5f. Record the meter reading.
5g. Re-record the meter reading.
DO NOT READ: The responses indicate that the electricity connection has recently been working, but the meter is currently not working. Does this indicate that the FR is currently using electricity free of charge?
5h. DO NOT READ: Select an answer.
5i. How many households (i.e., "pots") within your compound, including your own, are connected to electricity?
5j. How many households outside of your compound are connected to your electricity meter?
Household wiring
6a. Is this household using an IPA ready-board?
READ: How many...
6b. ...electrical outlets do you have available?
6c. ...lighting sockets do you have available?
6d. ...lightbulbs are you using?
6e. ...power extensions are you using?
Prepaid consumption
READ: When was your last top-up?
7a. Select month:
7b. Select year:
7c. What was the amount of your last top-up?
7d. In the past three months, how many times did you top-up?
7e. What issues or problems have you experienced when topping-up?
Postpaid consumption
READ: I would now like to ask you about your monthly electricity bill.
8a. Last month, how much did your household pay for electricity usage (i.e., electricity bill)?
8b. Please re-enter the amount.
8c. Select the month.
8d. Without looking at your electricity bill, can you list the different components of your electricity bill (please name as many items as possible)?
READ: Last month...
8e. ...how much electricity did you consume in kWh (estimate)?
8f. ....what tariff do you think you paid for electricity (estimate)? Tariffs are in Ksh per kWh.
8g. ...do you think the price of electricity was lower than, higher than, or the same as usual?
8h. Next month, do you think that the price of electricity will be more expensive?
Has anyone from Kenya Power visited your household in order to check your meter...
9a. ...over the past month?
9b. ...over the past 3 months?
Blackouts and power quality
READ: Over the past 3 days...
10a. ...did you experience any power blackouts?
10b. ...for roughly how many hours was the power not working?
READ: Over the past 7 days...
10c. ...did you experience any power blackouts?
10d. ...for roughly how many hours was the power not working?

## Appendix B - LSK Follow-up Round 1 (2016)

10e. Do blackouts occur regularly?
10f. Do you expect that the reliability of your electricity supply will improve in the future?
10g. Do you use any devices to protect your appliances from power surges?
READ: Thank you. I would now like to ask you details about your energy sources.
Kerosene usage
11. In the past 7 days, how much money in total did your household spend on kerosene?
Solar lanterns and solar home systems
12. Do you use a solar lantern or solar home system?
13a. How many solar lanterns do you use in this household?
READ: I'd like you to think only about the main solar lantern that you use.
13b. Do you own, rent or hire purchase this particular solar lantern?
13c. How much did you pay for this particular solar lantern?
13d. In the past month, how much did you pay to rent or hire purchase this particular solar lantern?
13f. Does this particular solar lantern allow you to charge mobile phones?
14a. How many solar home systems do you use in this household?
READ: I'd like you to think only about the main solar home system that you use.
14b. Do you own, rent or hire purchase this particular solar home system?
14c. How much did you pay for this particular solar home system?
14d. In the past month, how much did you pay to rent or hire purchase this particular solar home system?
14f. Does this particular solar home system allow you to charge mobile phones?
Batteries (dry cells) & car batteries (wet cells)
15a. How much did you pay to purchase your primary wet cell (i.e. car) battery?
15b. In the past 7 days, how much did you spend recharging this wet cell (i.e. car) battery?
15c. In the past 7 days, how much did you spend on your dry cell batteries?
15d. Is this because your batteries are rechargeable?
Generator
16a. When did your household first begin using a generator?
16b. How much did you pay for your primary generator?
16c. In the past 7 days, how much did you spend on fuel for your primary generator?
16d. For what activities do you use this generator?
16e. If other, please specify.
Other sources of energy
17a. In the past 7 days, how much did you spend on purchased firewood?
17b. In the past 7 days, how much did you spend on charcoal?
17c. In the past 7 days, how much did you spend on LPG?
17d. In the past 7 days, how much did you spend on sawdust?
READ: Earlier, you mentioned that you use another source of energy. In the past 7 days, how much did you spend...
17e. ...on this other source of lighting fuel?
17f. ...on this other source of cooking fuel?
17g. ...on this other source of additional energy?
17h. In the past 7 days, how much money was spent to recharge all of your household's mobile phones?
NOTE: Try naming the various energy sources to aid the respondent. For example, do you use a boda boda to pick up kerosene etc.? This should include the cost associated with taking a phone to be recharged as well.
17i. In the past 7 days, have you spent any additional money in order to collect/ acquire your energy sources?
17j. In the past 7 days, how much additional money did you spend to acquire all of your energy sources?
Lighting hours
READ: Thank you. I'd now like to ask you about your lighting hours. What time did you...
18a. ...Begin using your lighting last night?
18b. ...Stop using your lighting last night?
18c. Did you use your lighting this morning as well?
What time did you...
18d. ...Begin using your lighting this morning?
18e. ...Stop using your lighting this morning?

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Electrical appliances
READ: Thank you. Now I'd like to ask you about electrical appliances.
19a. Does your household own any electrical appliances?
19b. What electrical appliances do you own?
19c. If other, please specify.
19d. What will be the next electrical appliance(s) that you will purchase?
19e. If other, please specify.
19f. If you had an electricity connection, what would be the next electrical appliance(s) that you would purchase?
19g. If other, please specify.

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Section G - Credit
Savings and borrowing activities
READ: I would like to begin this section by asking you some questions about your savings activities.
1a. Do you use any mobile banking services?
1b. Do you participate in a SACCO, merry-go-round, or ROSCA?
1c. Do you have a savings account in a formal bank?
READ: I would now like to ask you some questions about your borrowing activities.
1d. In the past 12 months, have you ever borrowed money either formally or informally? If so, from who did you borrow money?
1e. In the past 12 months, did you ever try to borrow money but were refused? If so, from who did you try to borrow money?
1f. Would you like to borrow more or are you happy with your current amount of borrowing?
Savings and borrowing amounts
READ: For the following questions, if you do not know the exact amount please guess what you think it is.
2a. What is the total amount in shillings in your mobile banking account right now?
2b. What is the total amount in shillings of SACCO / merry-go-round / ROSCA contributions that you made last month?
2c. What is the total amount in shillings in your bank account right now?
READ: I would now like to ask you some more questions about your borrowing activities.
2d. For what purpose did you take out your loans?
2e. What is the total amount that you borrowed from commercial banks or lenders in the past 12 months?
2f. What is the total amount that you borrowed informally from a friend or family member in the past 12 month in shillings?
2g. Why have you not had any loans in the past 12 months?
2h. If you could borrow more money in the next month, what would you use it for?

## Appendix B - LSK Follow-up Round 1 (2016)

### SECTION H1: NUTRITION AND HEALTH

READ: Now I would like to ask you some questions about your health and nutrition.

1. How many meals did you eat yesterday? Chai (tea) itself is not to be considered as a meal

2a. Did any of these meals include meat or fish?

2b. Did any of these meals include eggs?

4. How would you rate your appetite over the last 7 DAYS?

5. In the last 7 DAYS, have you smoked any cigarettes?

6. In the last 7 DAYS, how many alcoholic drinks have you had?

7. READ: I am going to read to you a list of illnesses and symptoms. Please let me know if you have experienced any of these illnesses or symptoms in the last four weeks.

(7A) Fever

(7B) Persistent cough

(7C) Always feeling tired

(7D) Stomach pain

(7E) Worms

(7F) Blood in stool

(7G) Rapid weight loss

(7H) Frequent diarrhea

(7I) Skin rash or irritation

(7J) Open sores / boils

(7K) Difficulty Swallowing

(7L) Serious wound or injury

(7M) Malaria

(7N) Typhoid

(7O) Tuberculosis

(7P) Sores or ulcers on the genitals

(7Q) Cholera

(7R) Yellow fever

(7S) Asthma / breathlessness at night

(7T) Frequent and excessive urination

(7U) Constant thirst / increased drinking of fluids

(7V) Diabetes

(7W) Unusual discharge from the tip of the penis.

(7X) Anything else that I have not mentioned?

(7X) DESCRIBE OTHER SYMPTOM.

11. Did you sleep under a bednet last night?

12. During the last 4 weeks, how many days of work or housework or school did you miss due to poor health?

13. Would you describe your general health as very good, somewhat good, or not good?

14. Would you describe your general health as good, fair, poor, or very poor?

### SECTION I2

### SECTION H2. MARRIAGE

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READ: Now I would like to ask you some questions about any marriages you might have had. Please remember that this survey is confidential and that the information will be used for research purposes only. Also, I understand it may be difficult or upsetting to talk about, but please remember to include marriages that may now be over.

1. Have you ever been married?
2. How many times have you been married?
3. Now let's focus on a shorter timeframe. since January 2014, have you married anyone? Do not include a marriage that began before January 2014.
4. Are you currently married?
5. Do you have plans to be married in the next 12 months?

### SECTION I3

#### **SECTION H3: FERTILITY**

READ: Now I would like to ask you some questions about your fertility and any children you might have. Please remember that this survey is confidential and that the information will be used for research purposes only. Also, I understand it may be difficult or upsetting to talk about, but please remember to include pregnancies that did not end in live birth.

1. Has a sexual partner of yours ever been pregnant with your child (including pregnancies that are current or ended in stillbirth, miscarriage or abortion)?
1. Have you ever been pregnant (including pregnancies that are current or ended in stillbirth, miscarriage or abortion)?
2. How many times has a sexual partner of yours been pregnant with your child (including pregnancies that are current or ended in stillbirth, miscarriage or abortion)?
2. How many times have you been pregnant (including pregnancies that are current or ended in stillbirth, miscarriage or abortion)?
3. Now let's focus on a shorter timeframe. since January 2014, how many times has a sexual partner of yours been pregnant with your child (including pregnancies that are current or ended in stillbirth, miscarriage or abortion)?
3. Now let's focus on a shorter timeframe. since January 2014, how many times have you been pregnant (including pregnancies that are current or ended in stillbirth, miscarriage or abortion)?

READ: Let's discuss these recent pregnancies, starting with the first one since January 2014 if there was more than one.

#### Pregnancies

NOTE: ENTER TWINS AS TWO SEPARATE PREGNANCIES.

4. What was your relationship to the father / mother during the time of the pregnancy?
4. SPECIFY OTHER RELATIONSHIP.
5. Did the mother of the baby seek antenatal care during the pregnancy?
5. Did you seek antenatal care during the pregnancy?
6. SPECIFY OTHER LOCATION.
7. Is this a current pregnancy?
8. How did the pregnancy end?
9. In what month and year did the pregnancy end?

MM:

YYYY:

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10. I would like to see the child's health card in order to record his/her birthdate and weight at birth. Would it be possible to see this card right now?
11. RECORD CHILD'S BIRTH MONTH AND YEAR FROM HEALTH CARD. IF NOT AVAILABLE OR DOES NOT CONTAIN BIRTHDATE, ASK "In what month and year was the baby born?"
MM:
YYYY:
11a. WAS BIRTHDATE INFORMATION OBTAINED FROM HEALTHCARD?
12. Was the baby born in a hospital or clinic (as opposed to at a home)?
13. What is the first name of this child?
14. Is \${sl3_13name} a boy or girl?
15. RECORD THE BIRTHWEIGHT OF THE CHILD, ACCORDING TO THE HEALTH CARD. IF NOT AVAILABLE, ASK "What was \${sl3_13name}'s weight at birth?"
15a. WAS BIRTHWEIGHT OBTAINED FROM HEALTHCARD?
16. Is \${sl3_13name} still living?
17. How old in years and months was \${sl3_13name} when he / she died?
YEARS:
MONTHS:
29. Has a sexual partner of yours been pregnant with any other children of yours (including pregnancies that are current or ended in stillbirth, miscarriage or abortion), since 2014?
29. Have you had any other pregnancies (including pregnancies that are current or ended in stillbirth, miscarriage or abortion) since 2014?
IF THERE IS ANY OTHER PREGNANCY since 2014 AND NOT LISTED HERE, CLICK "ADD GROUP" IN THE NEXT SLIDE.
IF NO OTHER PREGNANCY since 2014, CLICK "DO NOT ADD" GROUP IN THE NEXT SLIDE.
31. Do you have any other biological children, born BEFORE January 2014, that we have not discussed just now? I know it may be difficult or upsetting, but please include children who are alive as well as children who were born alive but are no longer living now.
32. How many other biological children, born BEFORE January 2014, do you have – whether they are currently living or not?

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Section J - Social and Political Attitudes
Knowledge quiz
READ: I will now ask you ten questions related to current events.
NOTE: Do not read the responses aloud. Only mark whether the answer given was correct.
1a. What is the month and year of the next general election in Kenya?
The correct answer is "August 2017". Did the respondent answer this question correctly?
1b. Who is the current President of Tanzania?
The correct answer is "John Magufuli". Did the respondent answer this question correctly?
1c. Who is the current President of Burundi?
The correct answer is "Pierre Nkurunziza". Did the respondent answer this question correctly?
1d. This year in November there will be elections in the USA for the next President of the USA, to succeed Barack Obama. Can you name one of the candidates?
The correct answers are Donald Trump, Ted Cruz, John Kasich, Ben Carson, Jeb Bush, Marco Rubio, Hillary Clinton, and Bernie Sanders. Did the respondent name at least one of these people?
1e. Who is the CEO of Safaricom?
The correct answer is "Robert Collymore" or "Bob Collymore". Did the respondent answer this question correctly?
1f. Who is the Managing Director of Kenya Power?
The correct answer is "Ben Chumo". Did the respondent answer this question correctly?
1g. Which country won the 2015 Africa Cup of Nations football tournament?
The correct answer is "Ivory Coast". Did the respondent answer this question correctly?
1h. Who sings the song Sura Yako?
The correct answer is "Sauti Sol". Did the respondent answer this question correctly?
1i. Who were the intended recipients of the Government's Free Laptop Program?
The correct answer is "Class 1 Pupils". Did the respondent answer this question correctly?
1j. Who was responsible for the attacks at Garissa University last year?
The correct answer is "Al-Shabaab". Did the respondent answer this question correctly?
Media
Over the past 7 days, on how many days did you...
2a. ...listen to the radio?
2b. ...read the newspaper?
2c. ...watch television?
2d. ...read articles on the internet?
2e. ...discuss the news with your family?
2f. ...discuss next year's general election?
Religion
4a. Do you attend church/mosque regularly?
4b. Did you attend church/mosque last week?
4c. What is your current religion or denomination?
4d. Is your religion very important, somewhat important, or not very important to your life?
4e. Is your ethnic identity very important, somewhat important, or not very important to your life?
4f. In the last 12 months, would you say you have become more religious, stayed the same, or become less religious?
Trust
5a. Would you say that most people can be trusted or that you need to be very careful in dealing with people?
5b. In general, how much do you trust members of your tribe?
5c. In general, how much do you trust members of other tribes?
5d. In general, how much do you trust people of your church/mosque?
5e. In general, how much do you trust people of other churches/mosques?
5f. In general, how much do you trust your county government?
5g. In general, how much do you trust the national government of Kenya?
Opinions
READ: I will now make statements about your personal opinions. For each statement, I will ask you if you agree or disagree and how strongly you feel about your answer to the question.
NOTE: For the first question, please read the responses to the respondent so they know what answers they can choose from.

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6c. It is okay for a woman to be a bus or matatu driver.
6e. The important decisions in the family should be made by the men of the family.
6g. If the wife is working outside the home, then the husband should help her with household chores.
6i. Women should have more opportunities to be political leaders.
6m. It is okay for someone to be homosexual.
6o. I have equal access to economic opportunities as any other Kenyan.
6k. Moving to the city provides better economic opportunities.
6q. I would feel comfortable to go live and work somewhere else in Kenya.
6u. Having an electricity connection inside the home improves a family's quality of life.
7a. What is the most important attribute you look for in your presidential candidate?
7d. Government corruption is a problem in Kenya.
7f. The government is doing a good job fighting terrorism in Kenya.
7h. There is no threat of terrorism in Western.
7j. The government should prioritize military spending over other areas such as education and health.
7l. Economic inequality is a problem in this village.
7n. Economic inequality is a problem in Kenya.
7p. The government is doing a good job ensuring that electricity is provided in Kenya.
7r. It is important that the government of Kenya provides electricity to all houses in Kenya.
READ: I will now ask whether you think the county or the national government should manage certain parts of your community.
8a. Should the national government or the county government be responsible for managing hospitals in this area?
8c. Should the national government or the county government be responsible for managing schools in this area?
8e. Do you intend to vote in the next presidential election?
8f. Do you support one particular party or are you undecided about your vote?
World Values Survey
9a. Taking all things together, would you say you are "Very happy", "Rather happy", "Not very happy", or "Not at all happy"?
READ: I would now like you to think of a scale in which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied".
9b. All things considered, how satisfied are you with your life as a whole these days?
9c. How satisfied are you with the financial situation of your household?

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### **SECTION K: Social Networks**

READ: Now I want to ask about people you may know in your community.

READ: I will now read out a list of 15 people who live in this community. For each person, please tell me if you know the person.

Which of the following people do you know?

READ: Now, for each of the following people, please tell me what your relationship is to the person.

What is your relationship with [person1]?

What is your relationship with [person2]?

What is your relationship with [person3]?

What is your relationship with [person4]?

What is your relationship with [person5]?

What is your relationship with [person6]?

What is your relationship with [person7]?

## Appendix B - LSK Follow-up Round 1 (2016)

### SECTION L:

#### TIME USE: ACTIVITIES IN THE PAST 24 HOURS

READ: I would now like to ask about your activities during the past 24 hours starting with yesterday at 6am up until this morning at 6am. For each half hour, you should tell me what you did during that half hour. If you had several activities, please let me know the main activity.

#### NOTES:

- IF A PERSON IS PERFORMING HOUSE CHORES AS A JOB (E.G. A HOUSEGIRL), THE ACTIVITY IS "AT WORK-LIGHT MANUAL" OR "AT WORK-HEAVY MANUAL".
- IF A PERSON IS PERFORMING AGRICULTURAL LABOR AS A JOB, THE ACTIVITY IS EITHER "LIGHT FARM WORK" OR "HEAVY FARM WORK".
- IF A PERSON IS FISHING OR HUNTING AS A JOB, THE ACTIVITY IS "FISHING AND HUNTING".

#### NOTES:

- IF A STUDENT IS ON MID-DAY BREAK FROM SCHOOL, CODE WHAT THEY ARE DOING (E.G. EAT, REST, STUDY, OR PLAY SPORTS).
- ONCE THE RESPONDENT TELLS YOU WHEN HE/SHE GOES TO BED, ASK HIM/HER WHAT TIME HE/SHE GOT UP AND RESPOND TO QUESTIONS FOR THOSE TIMES ACCORDINGLY.

1. Yesterday, from 6:00 to 6:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

2. Yesterday, from 6:30 to 7:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

3. Yesterday, from 7:00 to 7:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

4. Yesterday, from 7:30 to 8:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

5. Yesterday, from 8:00 to 8:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

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6. Yesterday, from 8:30 to 9:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

7. Yesterday, from 9:00 to 9:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

8. Yesterday, from 9:30 to 10:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

9. Yesterday, from 10:00 to 10:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

10. Yesterday, from 10:30 to 11:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

11. Yesterday, from 11:00 to 11:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

12. Yesterday, from 11:30 to 12:00 noon, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

13. Yesterday, from 12:00 noon to 12:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

14. Yesterday, from 12:30 to 13:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

Appendix B - LSK Follow-up Round 1 (2016)

15. Yesterday, from 13:00 to 13:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

16. Yesterday, from 13:30 to 14:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

17. Yesterday, from 14:00 to 14:30pm, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

18. Yesterday, from 14:30 to 15:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

19. Yesterday, from 15:00 to 15:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

20. Yesterday, from 15:30 to 16:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

21. Yesterday, from 16:00 to 16:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

22. Yesterday, from 16:30 to 17:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

23. Yesterday, from 17:00 to 17:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

Appendix B - LSK Follow-up Round 1 (2016)

24. Yesterday, from 17:30 to 18:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

25. Yesterday, from 18:00 to 18:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

26. Yesterday, from 18:30 to 19:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

27. Yesterday, from 19:00 to 19:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

28. Yesterday, from 19:30 to 20:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

29. Yesterday, from 20:00 to 20:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

30. Yesterday, from 20:30 to 21:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

31. Last night, from 21:00 to 21:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

32. Last night, from 21:30 to 22:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

Appendix B - LSK Follow-up Round 1 (2016)

33. Last night, from 22:00 to 22:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

34. Last night, from 22:30 to 23:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

35. Last night, from 23:00 to 23:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

36. Last night, from 23:30 to 24:00 what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

37. Today, from 00:00 to 00:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

38. Today, from 00:30 to 1:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

39. Today, from 1:00 to 1:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

40. Today, from 1:30 to 2:00, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

41. Today, from 2:00 to 2:30, what were you doing?

SPECIFY SPORT.

SPECIFY OCCUPATION.

SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.

SPECIFY OTHER - WORK AND TRAVEL.

## Appendix B - LSK Follow-up Round 1 (2016)

42. Today, from 2:30 to 3:00, what were you doing?
SPECIFY SPORT.
SPECIFY OCCUPATION.
SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.
SPECIFY OTHER - WORK AND TRAVEL.
43. Today, from 3:00 to 3:30, what were you doing?
SPECIFY SPORT.
SPECIFY OCCUPATION.
SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.
SPECIFY OTHER - WORK AND TRAVEL.
44. Today, from 3:30 to 4:00, what were you doing?
SPECIFY SPORT.
SPECIFY OCCUPATION.
SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.
SPECIFY OTHER - WORK AND TRAVEL.
45. Today, from 4:00 to 4:30, what were you doing?
SPECIFY SPORT.
SPECIFY OCCUPATION.
SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.
SPECIFY OTHER - WORK AND TRAVEL.
46. Today, from 4:30 to 5:00, what were you doing?
SPECIFY SPORT.
SPECIFY OCCUPATION.
SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.
SPECIFY OTHER - WORK AND TRAVEL.
47. Today, from 5:00 to 5:30, what were you doing?
SPECIFY SPORT.
SPECIFY OCCUPATION.
SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.
SPECIFY OTHER - WORK AND TRAVEL.
48. Today, from 5:30 to 6:00, what were you doing?
SPECIFY SPORT.
SPECIFY OCCUPATION.
SPECIFY OTHER - PERSONAL, FAMILY, AND SOCIAL.
SPECIFY OTHER - WORK AND TRAVEL.
49. In the last seven days, how many hours have you spent doing household chores for your household?
50. In total, how many people have performed household chores for your household over the last seven days?
51. In the last seven days, how many hours did members of your household – not including you – spend doing household chores for your household?
52. In the last seven days, how many hours did workers from outside the household (such as hired maids who do not live with you) spend doing household chores?
53. In the last seven days, how much have you spent in total (including cash and in-kind payments) on people from outside the household assisting with household chores?

Appendix B - LSK Follow-up Round 1 (2016)

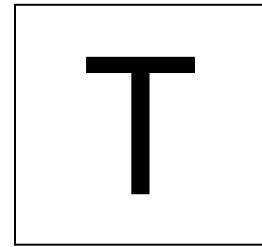
53i. IS THE AMOUNT REPORTED IN KENYAN SHILLINGS?
53ii. CURRENCY IF NOT KSH:
53II. SPECIFY OTHER CURRENCY.

## Appendix B - LSK Follow-up Round 1 (2016)

### **Foods for Module M**

Module M asks a series of questions about consumption of various staple food items, vegetables, meats, fruit, and other food. The table below lists the specific food items that will be used in module M.

<b>Staples</b>	<b>Vegetables</b>	<b>Meats</b>	<b>other</b>	<b>fruit</b>
rice	beans	beef	cooking fat	watermelon
irish potato	green grams	chicken	sugar	bananas
wheat flour	tomatoes	duck and other poultry	tea	oranges and other citrus
plantains	onions	eggs	coffee	pineapple
	kale		breads	avocado
	cabbage		biscuits	mango
			cakes	



# **LIVING STANDARDS KENYA 2016**

## **EDUCATION MODULE TESTS**

VERSION: APRIL 7, 2016 — ENGLISH

Site ID: |\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_|

Household ID: |\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_|

Pupil ID: |\_\_\_\_\_|\_\_\_\_|

Pupil Name: |\_\_\_\_\_|

FO ID: |\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_|

Date: |\_\_\_\_\_|\_\_\_\_\_| / |\_\_\_\_\_|\_\_\_\_\_| / |\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|  
*D D M M Y Y Y Y*

## **SECTION T1. Sentence Reading Test**

**Read:** For this part of the survey, I am going to ask you to answer some questions about reading and arithmetic. **Show the FR the example sentences on the exam.**

**Read:** This paper has a list of sentences. Some of the statements are TRUE and some are FALSE. You are required to read them as fast as possible. If the statement is TRUE, mark (✓) inside the box. If the sentence is FALSE, mark (X) inside the box.

**Read:** Let's work on an example together. Please read the first statement.

**Example:** *Pupils will read the first statement, which is TRUE. Then the investigator will show that the mark (✓) should be put for TRUE sentences. Pupils will read the second sentence, which is FALSE. The investigator will show that the mark (X) should be put for FALSE sentences. Pupils will read the third FALSE statement. They will be asked which mark is to be indicated inside the box (X). Pupils will read the fourth TRUE sentence. They will be asked which mark is to be indicated inside the box (✓).*

**Make sure FR understands the exercise before proceeding.**

**Read:** This exercise will be timed. You will have 4 minutes to complete as many sentences as you can. We do not expect you to finish all of them, so do not feel upset if you do not complete the exercise. Are you ready to begin?

1. **Do not ask the following question. Simply record your impressions.** Does the FR refuse to participate in the sentence reading test? (1=Yes, 2=No) |\_\_\_\_|  
**If NO, skip to “TEST INSTRUCTIONS”. If YES, continue.**

- 1a. Do not ask the following question, simply record your impressions.** Why does FR refuse to participate in the test?  
\_\_\_\_\_

---

**Now fill out the “Survey Refusal Sheet” and skip to Section 7.2.**

**TEST INSTRUCTIONS:** Fill out box on the first (introductory) page of the “Sentence Reading” exam. Then, give test to FR and start timer. When timer goes off, collect test from FR, double-check to ensure that all ID numbers are correctly recorded, and place in envelope of information to return back to the office.

2. **Do not ask the following questions. Simply record your impressions.** Was there any disturbance during the performance of the test? **Include presence of other people or if test takes place in a noisy area.** (1= Yes, 2= No) |\_\_\_\_|

- 2a. If YES:** Describe disturbance.  
\_\_\_\_\_

## **SECTION T2. Arithmetic Test**

**Read:** This is a mathematics test that I would like you to undertake. The test consists of addition, subtraction, multiplication and division questions.

**Make sure FR understands the exercise.**

**Read:** I would like you to attempt all questions starting with the addition questions. If you cannot answer a question, leave it and continue with the following question. You will have 10 minutes to complete as many questions as you can. We do not expect you to finish all of them, so do not feel upset if you do not complete the entire sheet. Are you ready to begin?

1. ***Do not ask the following question, simply record your impressions.*** Does the FR refuse to participate in the arithmetic test? (1=Yes, 2=No) |\_\_\_\_|

**If NO, skip to TEST INSTRUCTIONS. If YES, continue.**

- 1a. ***Do not ask the following question, simply record your impressions.*** Why does FR refuse to participate in the test?  
\_\_\_\_\_

---

**Now fill out the “Survey Refusal Sheet” and skip to Section 7.3.**

**TEST INSTRUCTIONS:** Fill out box on the first (introductory) page of the “Math Test”. Then, give test to FR and start timer. When timer goes off, double-check to ensure that all ID numbers are correctly recorded, and place in envelope of information to return back to the office.

2. ***Do not ask the following questions, simply record your impressions.***

- 2a. Is this interview being performed at the respondent's current residence, place of work, or school?  
\_\_\_\_\_

3. ***Do not ask the following questions. Simply record your impressions.*** Was there any disturbance during the performance of the test? ***Include presence of other people or if test takes place in a noisy area.*** (1= Yes, 2= No) |\_\_\_\_|

- 3a. ***If YES:*** Describe disturbance. \_\_\_\_\_  
\_\_\_\_\_

**Module T – Test #1**

# Sentence Reading Test

**Limit: 4 MINUTES**

***Please fill in the following information before administering this section:***

Site ID: |\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_|

HH ID: |\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_|

Pupil ID: |\_\_\_\_\_|\_\_\_\_|

Pupil Name: |\_\_\_\_\_|

FO ID: |\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_|

Date of interview: (DD/MM/YYYY)

|\_\_\_\_\_|/|\_\_\_\_\_|/|\_\_\_\_\_|\_\_\_\_\_|

Start time: (24 hr clock) |\_\_\_\_\_| : |\_\_\_\_\_|

End time: (24 hr clock) |\_\_\_\_\_| : |\_\_\_\_\_|

## Examples:

Do houses usually have roofs?	✓
Do snakes live in the sky?	X
Can a deaf person hear?	X
Do trees have branches?	✓

1. Do dogs have wings?
2. Can eyes be used for seeing?
3. In normal circumstances, is the tongue used for smelling?
4. Do people eat fish?
5. Is your mouth on your face?
6. Do many people have two ears?
7. Can ugali be made from maize flour?
8. Do people have four legs?
9. Do butterflies like flowers?
10. Do vehicles swim in the ocean?

- |                                            |                          |
|--------------------------------------------|--------------------------|
| 11. Are chairs food?                       | <input type="checkbox"/> |
| 12. Do umbrellas protect us from the rain? | <input type="checkbox"/> |
| 13. Can a house walk?                      | <input type="checkbox"/> |
| 14. Do birds fly?                          | <input type="checkbox"/> |
| 15. Do clouds have roofs on the ground?    | <input type="checkbox"/> |
| 16. Can a blind person see?                | <input type="checkbox"/> |
| 17. Is soil part of the ground?            | <input type="checkbox"/> |
| 18. Can fire burn things?                  | <input type="checkbox"/> |
| 19. Can a cow fit in a bottle?             | <input type="checkbox"/> |
| 20. Do chickens have hair?                 | <input type="checkbox"/> |

21. Do we cook food by fire?
22. Do bees make honey?
23. Do cows give us milk?
24. Do infants normally crawl?
25. Do people eat clothes?
26. Do fish fly?
27. Does everyone have a head?
28. Are dresses worn on the hand?
29. Does the sun shine at night?
30. Are cassavas food?

31. Do cats eat clouds?
32. Do bees make bread?
33. Do birds have hard beaks?
34. Does the sun shine during the day?
35. Do you smell using your ears?
36. Are your eyes part of your knees?
37. Do you need food to grow well?
38. Do you have 50 fingers?
39. Are your fingers found in your stomach?
40. Do cows drink water?

41. Is grass human food?
42. Do children like to play?
43. Do you eat food with your ears?
44. Do dogs lay eggs?
45. Do we use chairs to sit on?
46. Do fish stay on trees?
47. Is air very important to human beings?
48. Do birds have 6 legs?
49. Do people eat fire?
50. Is it easy to light fire on water?

51. Do chickens have horns?
52. Does the moon shine at night?
53. Does a chicken egg have a window?
54. Are animals living things?
55. Do animals eat stones?
56. Can stones be used to build houses?
57. Can you see well at night without light?
58. Under normal circumstances, do people have 2 eyes?
59. Can we get papayas from orange trees?
60. Can people eat sugarcane?

61. Do we usually use feathers as clothes?
62. Is the toilet a place to eat?
63. Does the wind blow only at night?
64. Is honey made by chickens?
65. Do birds breastfeed their chicks?
66. Is the needle used for sewing cloths?
67. Do trees walk?
68. Are earrings worn on legs?
69. Is a watch worn on the wrist?
70. Does the radio broadcast news?

71. Do mosquitoes disturb at night?
72. Does a bicycle have ten wheels?
73. Are potatoes food?
74. Can a bed swim?
75. Does a teacher teach pupils?
76. Is a ring worn around the neck?
77. Do we use sulfuria to cook?
78. Is a knife used to cut meat?
79. Do chickens give us sweet milk?
80. Is a bucket used to fetch water?

81. Is a hat worn on the head?
82. Does a cow lay eggs?
83. Does a chicken have 3 legs?
84. Is rain water saltless?
85. Do people eat grass?
86. Do fish live in water?
87. Are your eyes on your hands?
88. Do fishermen fish cows?
89. Does a goat lay eggs?
90. Do infants like milk?

91. Do people live in trees?
92. Are nets used for fishing?
93. Can a chicken ride a bicycle?
94. Do bees give us milk?
95. Does a vehicle move faster than human beings?
96. Are pineapples poisonous to human beings?
97. Normally, are lamps lit during the day?
98. Does a goat have 3 tails?
99. Does a cow have 4 legs?
100. Is salt put in tea?

**Module T – Test #2**

# Arithmetic Test

**Limit: 10 MINUTES**

*Please fill in the following information before administering this section:*

Site ID: |\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|

HH ID: |\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|

Pupil ID: |\_\_\_\_|\_\_\_\_|

Pupil Name: |\_\_\_\_\_|

FO ID: |\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|

Date of interview: (DD/MM/YYYY)

|\_\_\_\_|\_\_\_\_|/|\_\_\_\_|\_\_\_\_|/|\_\_\_\_|\_\_\_\_|\_\_\_\_|

Start time: (24 hr clock) |\_\_\_\_|\_\_\_\_| : |\_\_\_\_|\_\_\_\_|

End time: (24 hr clock) |\_\_\_\_|\_\_\_\_| : |\_\_\_\_|\_\_\_\_|

**1. Addition (+)**

a)  $5 + 1 =$

b)  $6 + 1 + 2 =$

c)    75

+ 8

d)       48

2853

724

82

+ 6215

---

**2. Subtraction (-)**

a)  $5 - 4 =$

b) 84

- 36

c) 6204

- 530

d) 700904

- 9018

### **3. Multiplication (x)**

a) 4

x 2

b) 23

x 3

c) 636

x 208

d) 420.3

x 29

---

### **4. Division (÷)**

a)  $\begin{array}{r} \underline{\hspace{2cm}} \\ 4 ) 8 \end{array}$

b)  $\begin{array}{r} \underline{\hspace{2cm}} \\ 6 ) 968 \end{array}$

c)  $\begin{array}{r} \underline{\hspace{2cm}} \\ 31 ) 6262 \end{array}$

d)  $\begin{array}{r} \underline{\hspace{2cm}} \\ 5.2 ) 572 \end{array}$

## **5. Addition of fractions (+)**

a)  $\frac{1}{3} + \frac{1}{3} =$

b)  $2\frac{4}{5} + 7\frac{2}{5} =$

c)  $3\frac{2}{5} + 2\frac{1}{4} + 1\frac{5}{6} =$

d)  $6\frac{1}{5} + 4\frac{2}{7} + 9\frac{4}{5} =$

---

## **6. Subtraction of fractions (-)**

a)  $\frac{7}{8} - \frac{3}{8} =$

b)  $4\frac{2}{3} - 2\frac{2}{3} =$

c)  $7\frac{1}{6} - \frac{3}{4} =$

d)  $19\frac{1}{5} - 14\frac{2}{3} =$

## Appendix C - LSK Follow-up Round 2 (2017)

Living Standards Kenya (LSK) Household Survey 2017	
<b>Introduction</b>	
<b>Survey information</b>	
Greetings! You are about to begin "Living Standards Kenya 2017". Please fill in the following questions before engaging the respondent.	
1. Please select your name:	
2. Please enter your REMIT ID number:	
Generates enumerator name	
3. Elder/ guide name:	
4. Transformer ID:	
5. Household ID:	
7. Are you interviewing the original respondent?	
8. What target is the person you are interviewing?	
<b>Additional Location Information</b>	
8b. Why were you not able to interview target 1 or 2?	
9. In which category is the household being surveyed?	
10. What was the household ID of the old household that used to live in this location?	
FO: Go ahead and interview the current household that is here but also complete the missing household information if none of the original household members stays here.	
FO: Please go back to the original location after completing this survey. If a new family is living there, please complete a separate survey using the household ID "98" or "99". If nobody is living at the old location, please complete the Missing HHD form	

## Appendix C - LSK Follow-up Round 2 (2017)

Informed consent
Script
READ: Hello. How are you? I am \${aa1_name} from REMIT, an independent research organization collaborating with IPA and the University of California. We are conducting research on living standards in the rural parts of Kenya. We visited this area a while back, accompanied by village elder \${aa3} in order to know who lives in this area. As you may know, three years ago we helped some households in this area get a connection to electricity. We have finished with that program now. Currently, we are not connecting any more houses to electricity, we are only conducting a survey to measure living standards.
READ: You have been randomly selected into our survey today. I trust that village elder - \${aa3} informed you of our visit today on [respondent contact/ tracking sheet]. I would like to ask you questions to help us understand the living standards of the people in this area.
READ: I will keep everything that you tell me entirely private and will not talk to other people about what you say. I ask that you speak honestly, since we are only interested in collecting information at this point. There are no "right" or "wrong" answers. You can choose to stop this survey at any point in time or refuse to answer certain questions. If you have any questions, you can contact the person in charge of this survey at REMIT.
READ: We will ask for your Kenya Power account number to acquire usage information about your family's energy consumption since you got connected. You do not have to give us this number if you do not wish and you may still participate in the survey. However, your responses from our research team's previous visits may be combined with your responses from this survey to give us a better idea about your energy consumption and energy needs.
Would you be willing to volunteer roughly 1 hours of your time to speak with me?
Informed consent not obtained
READ: Thank you for your time and I hope that you have a wonderful day.
NOTE: Kindly exit the household so that you can take the GPS coordinates and finalize this survey.
Record your location.
Record location by hand if device not working
Please enter any additional comments.

## Appendix C - LSK Follow-up Round 2 (2017)

Section A - Roster
Contact details
What is your name?
What is your year of birth?
NOTE: Please enter the observed sex of the respondent below without asking.
The respondent's sex is:
READ: I would now like to ask you for some basic contact information.
1d. Do you have a phone number where we can contact you in the future?
1e. Could you please tell me your phone number again?
1f. Whose phone number is this?
1g. Was anyone from this household living in this same house three years ago, in 2014?
Compound check
1h. Was anyone from this household living in this same compound three years ago, in 2014?
1i. Think that of the house you were living in three years ago in the same compound. What is the current status of this house?"
Please specify other
Phone Number Check
NOTE: The two phone numbers do not match! Please go back and make sure you entered the same, correct phone number twice.
Relationship to Respondent
6d. Relationship of owner of cell phone to respondent:

## Appendix C - LSK Follow-up Round 2 (2017)

Section A - Households
Roster Names
READ: Below are the names from data we collected three years ago of people living in your household. Please tell me if this person still lives in this household.
READ: For these next questions, please think only of the people who regularly eat and sleep in this house. If somebody lives in a different simba in this compound (boma), please tell us that this person does not live in this house. Later, we will ask about other people living in other simba's in this compound (boma).
NOTE: If the name is not spelled correctly or the year of birth is not correct, please ignore this for now.
Does \${OldName1} (birthyear \${OldYear1}) live here?
READ: There may be more people who are currently living in this household but whose information we did not record three years ago. We will ask about them later. For now, let's focus on the people above.
3b. DO NOT READ ALOUD: Does anyone from the original household live here?
3c. Why did the original household leave? (Don't Know = 99)
Moving Date
3d. When did the original household leave?
MM:
3e. YY:
3f. What is your relationship to the head of the original household?
Reasons for Leaving
READ: I would now like to know why some people no longer live in your household.
2a. Why does \${OldName1} (birthyear \${OldYear1}) no longer live here?
Please specify other
Check whether details are correct
READ: I would now like to check whether the information that we have is correct.
3a. Our data says that \${OldName1} was born in the year \${OldYear1}, sex \${OldSex1}. Is their name spelled correctly, and is this information correct?
What is incorrect
READ: You mentioned that some of the information is incorrect. Let's see what specifically is incorrect.
3a. What is incorrect about the details of \${OldName1} (birthyear \${OldYear1}, sex \${OldSex1})?
Correct any details that are incorrect
READ: For the information that you said was incorrect, I now would like to get the correct information.
4a. What is the correct spelling of the name of \${OldName1} (birthyear \${OldYear1})?
4b. What is the birth year of \${OldName1} (birthyear \${OldYear1})?
4c. What is the sex of \${OldName1}?
Complete Roster Names
READ: Right now I have recorded that the following people live here:
\${Name1New} (birthyear \${Year1New})
Does anybody else live in this house that is not listed above? Please think only of the people who regularly eat and sleep in this house. Please do not include anybody who lives in a different Minor Household in this compound (boma). Later, we will ask about other people living in other Minor Households in this compound (boma).
New Members
What is their name?
What is their sex?
What is their year of birth?
What is their highest level of education completed?
Are they currently employed or running their own business?
What is their current occupation?
Specify other
READ: When did this person join the household?
Year:

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Month:
Why was this person not living here in 2014?
Specify other
Check Complete Roster Names
READ: Right now I have recorded that the following people live here:
\${Name1New} (birthyear \${Year1New})
Is this list correct and include everybody that lives in this house?
NOTE: Please check that the respondent's name, \${a1a}, is listed correctly in the list above. If the respondent is not listed, or if their name is spelled incorrectly, please go back and edit their name.
NOTE: From the list above, please count how many people are now living in this main household
Number of people in household:
Roster Names
NOTE: The information was not complete. Please go back and change the relevant information.
Additional comments?
How many structures are there in this compound? Please include any buildings where anybody eats or sleeps, including your own home. Also count workplaces, like a kitchen, workshop, or chicken coop. Do not count a latrine.
Other Structures
How many of these \${a18b} structures are connected to the national grid?
How many of these \${a18b} structures are used by the \${a11b} people in your own household?
Does anybody else live in any other Minor Households in this compound?
Other Minor Households
How many other Minor Households are there in this compound where at least one person usually eats and sleeps?
DO NOT READ ALOUD: You said that there are \${a19a} minor households. Is this correct?
NOTE: Before proceeding, please think back and count how many children born in the years 2000, 2001, 2002, 2003, or 2004 you counted in the roster above. Please confirm that this number matches the next question.
How many children born in the years 2000, 2001, 2002, 2003, or 2004 live in this household? Please think only of the children who regularly eat and sleep in this house. Please do not include any children who live in a different Minor Household in this compound.

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Section M - Consumption Goods	
READ: Now I want to ask about all food that your household consumed, regardless of whether it was purchased or grown by your household. Please exclude from your answer any food purchased for processing, livestock consumption, or resale in a household enterprise.	
1. What was the amount of these particular staples consumed in total by your household in the past 7 days (KSH)?	
FO: read list of staples and calculate total. <u>rice, irish potato, wheat flour, plantains</u>	
1. What was the amount of vegetables consumed in total by your household in the past 7 days (KSH)?	
FO: read list of vegetables and calculate total. <u>Beans, green grams, tomatoes, onions, kale, cabbage</u>	
1. What was the amount of meat consumed in total by your household in the past 7 days (KSH)?	
FO: read list of meat and calculate total. <u>Beef chicken_duck_and_other_poultry eggs</u>	
1. What was the amount of fruit consumed in total by your household in the past 7 days (KSH)?	
FO: read list of fruit and calculate total. <u>Watermelon, bananas, oranges and other citrus, pineapple, avocado, mango</u>	
1. What was the amount of the following other goods consumed in total by your household in the past 7 days (KSH)?	
FO: read list of other goods and calculate total. <u>Cooking fat, sugar, tea/coffee, breads/biscuits/cakes</u>	
In the past one month, How much did your household spend on Airtime, other phone expenses in total (KSH)?	
In the past one month, How much did your household spend on travel, transport and hotels (NOT including medical reasons) in total (KSH)?	
FO: Read list of travel and transport expenses, calculate total <u>Petrol, tolls, transport such as taxi/bus/matatu/boda/piki/train/flight fare, hotel stays</u>	
In the past one month, How much did your household spend on Clothing and shoes in total (KSH)?	
In the past one month, How much did your household spend on Recreation/entertainment such as books/magazines, music/CDs, videos, tickets to any entertainment in total (KSH)?	
In the past one month, How much did your household spend on Personal items such as Hair cuts, toiletries, cosmetics, combs, soap in total (KSH)?	
In the past one month, How much did your household spend on Household items (soap, cleaning agents, toilet paper/tissues, air freshener, shoe polish, insecticide, matches, candles) in total (KSH)?	
FO NOTE: The following questions ask about spending in the past 12 months.	
In the past 12 months, How much did your household spend on Fixing home damage or doing essential maintenance (e.g. fixing a leaking roof) in total (KSH)?	
In the past 12 months, How much did your household spend on Religious expenses or other ceremonies such as weddings and funerals in total (KSH)?	
In the past 12 month, How much did your household spend on Medical expenses, (including consultation fees, medicines, hospital costs, lab test costs, ambulance costs, and related transport in total (KSH)?	

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SECTION L - Time use / Activities in past 24 hours
Household chores
READ: In the last seven days...
49. ...how many hours have you spent doing household chores for your household?
50. ...how many people have performed household chores for your household in total?
Additional comments?

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Section F - Energy
Main and secondary energy sources
READ: I would like to begin this section by asking you some questions about your energy use.
1a. Does this household have a connection to the national grid?
1b. What is your main source of lighting energy?
1c. What are your other (secondary) sources of lighting energy?
1d. What is your main source of cooking energy?
1e. What are your other (secondary) sources of cooking energy?
1f. Do you use any additional sources of energy?
Other sources of energy
1g. What are these sources of energy?
Specify other
1h. If main source of lighting energy is other, please specify.
1i. If secondary source of lighting energy is other, please specify.
1j. If main source of cooking energy is other, please specify.
1k. If other source of cooking energy is other, please specify.
1l. If additional sources of energy is other, please specify.
No electricity connection
READ: What are the reasons why your household does not have electricity?
NOTE: Allow respondent to respond naturally. When he/she has finished, select all of the reasons that apply.
2. Please select all that apply.
Specify other
3a. Has anyone in this household ever applied for an electricity connection?
3b. When did your household apply for this connection?
3c. What is the current status of your application?
READ: I will now ask you three questions about how you personally feel about having electricity in your home. We have heard different reasons so we would now like to hear about your specific home.
NOTE: Please now complete the three qualitative survey questions on paper. Pay special attention to record detailed notes for these questions. Please go slowly, take your time, and try to write down as much as you can of what the respondent is telling you.
3d. What are the best things about having an electricity connection?
3e. What are the worst things about having an electricity connection?
3e1. How has electricity impacted your life?
3f. If you had electricity, how do you think it would change your life? These could be good changes or bad changes.
3g. What are the good or bad things about your neighbor having an electricity connection?
Willingness to pay
READ: As you know, electricity requires two types of payments: First, you must pay for the connection cost. Second, you must pay for the monthly service fee (i.e. bill). I'd like you to think about only the connection cost.
READ: I would like you to think about a situation that is not real. Imagine that there was no government program to provide electricity - Last Mile Connectivity Project (LMCP). In addition, in order to obtain an electricity connection, you must pay a "lump sum" price. In other words, you are offered a price and you have a period of time to decide whether to take this price. If you decide to take the price, you have to pay all at once, after which you are immediately connected.
6g. Would you be willing to pay \${TotAmt} Ksh for an electricity connection?
3h. Imagine that you were offered an electricity connection at \${TotAmt} today, and you were given 6 weeks to complete the payment. Would you accept the offer?
READ: Now suppose that no upfront payment is required and you are allowed to pay for an electricity connection slowly over time. In other words, you are required to pay a fixed amount each month, for a period of three years, until you have fully paid for the electricity connection.
3i. Would you be willing to pay \${MonthAmt} Ksh each month for a period of three years, so that you will pay \${TotAmt} Ksh in total?
Electricity connection

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READ: When was this household first connected to electricity? Record the approximate date that electricity first began to flow into this household.
4a. Month of connection:
4b. Year of connection:
4c. In total, how much did you pay to connect your household to the electricity grid?
READ: I would like you to think about a situation that is not real. Imagine that there was no government program to provide electricity - Last Mile Connectivity Project (LMCP). In addition, you have relocated to a neighboring compound in which you do not have an electricity connection. In order to obtain an electricity connection, you must pay a "lump sum" price. In other words, you are offered a price and you have a period of time to decide whether to take this price. If you decide to take the price, you have to pay all at once, after which you are immediately connected.
4d. Would you be willing to pay \${TotAmt} Ksh for an electricity connection?
4e. Imagine that you were offered an electricity connection at \${TotAmt} Ksh today, and you were given 6 weeks to complete the payment. Would you accept the offer?
READ: Now suppose that no upfront payment is required and you are allowed to pay for an electricity connection slowly over time. In other words, you are required to pay a fixed amount each month, for a period of three years, until you have fully paid for the electricity connection.
4f. Would you be willing to pay \${MonthAmt} Ksh each month for a period of three years, so that you will pay \${TotAmt} Ksh in total?
4g. Please think for a moment about how much you paid in total for your electricity connection (\${f4c} shillings). Knowing what you know today, would you pay this amount for electricity again? If you didn't pay anything, would you want to be connected again for free?
4h. Generally speaking, how satisfied are you with your electricity connection?
4i. Over the past 7 days, has your electricity connection delivered power to your home?
4j. Why not?
READ: How long has the electricity connection not been working?
4k. Length of time:
4l. Select units:
4m. If other reason why there is no power, please specify.
4q. In your interaction with Kenya Power have you ever been asked to pay a bribe?
<b>Electricity meter</b>
5a. What type of electricity meter do you have?
5b. Where is this electricity meter installed?
Specify other
Does the household have a new Kenya power account number (in addition to the old one)?
Please enter the NEW Kenya power account number.
Please re-enter the NEW Kenya power account number.
5c. Please enter the OLD Kenya power account number.
5f. Record the meter reading. PLEASE RECORD THE NUMBERS DISPLAYED ON THE METER.
DO NOT READ ALOUD: Why were you not able to record the meter number?
5d. Please re-enter the OLD Kenya power account number.
5g. Re-record the meter reading. PLEASE RECORD THE NUMBERS DISPLAYED ON THE METER.
5e. Is this electricity meter currently working?
DO NOT READ: The responses indicate that the electricity connection has recently been working, but the meter is currently not working. Does this indicate that the FR is currently using electricity free of charge?
5h. DO NOT READ: Select an answer.
5i. READ: How many households (i.e., "pots") within your compound, including your own, are connected to electricity?
5j. How many households outside of your compound are connected to your electricity meter?
<b>Household wiring</b>
6a. Is this household using an IPA ready-board?
READ: How many...
6b. ...electrical outlets do you have available?

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6c. ...lighting sockets do you have available?
6d. ...lightbulbs are you using?
6e. ...power extensions are you using?
Prepaid consumption
READ: When was your last top-up?
7a. Select month:
7b. Select year:
7c. What was the amount of your last top-up?
READ: In the past three months...
7d. ...how many times did you top-up?
7e. ...how much in total did you spend on top ups?
7f. What issues or problems have you experienced when topping-up?
NOTE: Identify and examine the household's main lightbulb. Try to get the lightbulb in the main household living room if they have one. What is the wattage printed on the lightbulb?
7g. Record the wattage.
7g1. I would now like you to think only about the cost of using electricity. In other words, please do not think about the cost of obtaining the electricity connection. Based on your experience, how much do you think it will cost to switch on this lightbulb for one hour? NOTE TO FIELD OFFICER: PLEASE REMIND FR TO TAKE A MOMENT TO THINK THIS OVER. IT IS OK IF THE FR PROVIDES AN ESTIMATE.
7i. Last month, do you think the price of electricity was lower than, higher than, or the same as usual?
7j. Next month, do you think that the price of electricity will be lower, higher, or the same?
Postpaid consumption
READ: I would now like to ask you about your monthly electricity bill.
8a. How much was the amount of your last monthly electricity bill?
8b. Please re-enter the amount.
8c. For which month did you receive your last bill?
8d. Without looking at your electricity bill, can you list the different components of your electricity bill (please name as many items as possible)?
8e. Last month, how much electricity did you consume in kWh (estimate)?
NOTE: Identify and examine the household's main lightbulb. What is the wattage printed on the lightbulb?
8f. Record the wattage.
8g. I would now like you to think only about the cost of using electricity. In other words, please do not think about the cost of obtaining the electricity connection. Based on your experience, how much do you think it will cost to switch on this lightbulb for one hour? NOTE TO FIELD OFFICER: PLEASE REMIND FR TO TAKE A MOMENT TO THINK THIS OVER. IT IS OK IF THE FR PROVIDES AN ESTIMATE.
8h. Last month, do you think the price of electricity was lower than, higher than, or the same as usual?
8i. Next month, do you think that the price of electricity will be lower, higher, or the same?
Has anyone from Kenya Power visited your household in order to check your meter...
9a. ...over the past month?
9b. ...over the past 3 months?
9c. ...over the past 6 months?
Blackouts and power quality
READ: Over the past 3 days...
10a. Are power outages a problem in your village?
10b. ...did your household experience any power blackouts?
10c. ...for roughly how many hours was the power not working?
READ: Over the past 7 days...
10c. ...did you experience any power blackouts?
10d. ...for roughly how many hours was the power not working?
10e. Do blackouts occur regularly?

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10f. Do you expect that the reliability of your electricity supply will get better, stay the same, or get worse in the future?
10g. Do you use any devices to protect your appliances from power surges?
Specify other
10h. Did these power outages limit your ability to do your work this week?
4. Have there been any accidents within the past year related to electricity causing injuries to humans or animals in the village?
5. Have there been any accidents within the past year related to electricity causing damage to any buildings in the village?
Explain incidents
Please explain any accidents related to electricity causing injuries within the past year.
Please explain any incidents related to electricity causing damage to any buildings within the past year.
6. Have there been any other incidents related to electricity that are worth sharing?
READ: Thank you. I would now like to ask you details about your energy sources.
Kerosene usage
11. In the past 7 days, how much money in total did your household spend on kerosene?
Solar lanterns and solar home systems
12a. Do you use a solar lantern or solar home system?
12b. Have you ever used a solar lantern or solar home system?
12c. How long have you been using a solar lantern or solar home system?
12d. Why did you stop using your solar lantern or solar home system?
Solar lanterns
13a. How many solar lanterns do you use in this household?
READ: I'd like you to think only about the main solar lantern that you use.
13b. Do you own, rent or hire purchase this particular solar lantern?
13c. How much did you pay for this particular solar lantern?
13d. How much did you pay upfront (as a "deposit") to rent or hire purchase this particular solar lantern?
13d. In the past month, how much did you pay to rent or hire purchase this particular solar lantern?
13f. Does this particular solar lantern allow you to charge mobile phones?
Solar home systems
14a. How many solar home systems do you use in this household?
READ: I'd like you to think only about the main solar home system that you use.
14b. Do you own, rent or hire purchase this particular solar home system?
14c. How much did you pay for this particular solar home system?
13d. How much did you pay upfront (as a "deposit") to rent or hire purchase this particular solar home system?
14d. In the past month, how much did you pay to rent or hire purchase this particular solar home system?
14f. Does this particular solar home system allow you to charge mobile phones?
Batteries (dry cells) & car batteries (wet cells)
15a. How much did you pay to purchase your primary wet cell (i.e. car) battery?
15b. In the past 7 days, how much did you spend recharging this wet cell (i.e. car) battery?
15c. In the past 7 days, how much did you spend on your dry cell batteries?
15d. Is this because your batteries are rechargeable?
Generator
16a. When did your household first begin using a generator?
16b. How much did you pay for your primary generator?
16c. In the past 7 days, how much did you spend on fuel for your primary generator?
16d. For what activities do you use this generator?
Specify other
16e. If other, please specify.
Other sources of energy
17a. In the past 7 days, how much did you spend on purchased firewood?
17b. In the past 7 days, how much did you spend on charcoal?
17c. In the past 7 days, how much did you spend on LPG?

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17d. In the past 7 days, how much did you spend on sawdust?
READ: Earlier, you mentioned that you use another source of energy. In the past 7 days, how much did you spend...
17e. ...on this other source of lighting fuel?
17f. ...on this other source of cooking fuel?
17g. ...on this other source of additional energy?
17j1. In the past 7 days, where have you gone to charge your household's mobile phones?
Other sources of energy
19a2. Where does your household most frequently charge their cell phones?
17h. In the past 7 days, how much money was spent to recharge all of your household's mobile phones?
17i. In the past 7 days, have you spent any additional money in order to collect/ acquire your energy sources? For example, the money spent on boda boda when collecting kerosene, firewood, charcoal, etc.?
17j. In the past 7 days, how much additional money did you spend to acquire all of your energy sources?
Lighting hours
18. Did you use your lighting last night?
READ: What time did you...
18a. ...Begin using your lighting last night?
18b. ...Stop using your lighting last night?
18c. Did you use your lighting this morning as well?
Are you sure f18a is correct?
Are you sure f18b is correct?
READ: What time did you...
18d. ...Begin using your lighting this morning?
18e. ...Stop using your lighting this morning?
Are you sure f18d is correct?
Are you sure f18e is correct?
Electrical appliances
READ: Thank you. Now I'd like to ask you about electrical appliances.
19a. Does your household own any electrical appliances, such as a cell phone or a radio? If an appliance is broken but you plan to fix it, please still include it.
NOTE: Recall that an electrical appliance is any electronic device that can be plugged into an electricity socket.
19b. What electrical appliances do you own? Please include type of device or machine that uses electricity. Also please count any devices that are being used by anyone living in this household
19c. What other electrical appliances do you own?.
19d. What will be the next electrical appliance(s) that you will purchase?
19e. What are the other electrical appliances that you will purchase?
19f. If you had an electricity connection, what would be the next electrical appliance(s) that you would purchase?
19g. What would be the other electrical appliances that you would next purchase if you had an electricity connection?
19h. Is your household currently saving money for an appliance?
19i. If so, which appliance?
19j. What would be the next electrical appliance(s) that your household would purchase if you could obtain credit to purchase them?
19k. What other electrical appliances would your household purchase if you could obtain credit?
20. Prior to this interview, had you ever heard of the Last Mile Connectivity Project?
20a1. Month of first hearing about the Last Mile Connectivity Project:
20a2. Year of first hearing about the Last Mile Connectivity Project:
READ: The Last Mile Connectivity Project is the government's national plan to connect all Kenyan households to the electric grid. You may have heard that this project is being funded by the World Bank as well as the African Development bank.
21. To the best of your knowledge, is this village a Last Mile Connectivity Project site?
22. Has Last Mile construction started in this village?
30. It is very likely that in the next 12 months LMCP construction will begin in this village.

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READ: I will now make a statement about your personal opinion. For each question, please choose one of the following answers:  
you agree strongly, you agree only, you neither agree nor disagree, you disagree only, or you disagree strongly.

7g. The government is doing a good job ensuring that electricity is provided in Kenya.

Additional comments?

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Section J - Social and Political Attitudes	
<b>Media</b>	
Over the past 7 days, on how many days did you...	
2a. ...listen to the radio?	
2b. ...read the newspaper?	
2c. ...watch television?	
2d. ...use the internet (e.g., articles, emails, facebook and other social media etc.)?	
9a. Taking all things together, would you say you are "Very happy", "Rather happy", "Not very happy", or "Not at all happy"?	
READ: I would now like you to think of a scale in which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied". So 1 means you are "completely dissatisfied". 2 means you are a little bit more satisfied than 1, but still very dissatisfied. 3 means you are a little bit more satisfied than 2, but still quite dissatisfied. Continuing all the way up the ladder to 9 where you are "very satisfied" and 10 where you are "completely satisfied".	
9b. All things considered, how satisfied are you with your life as a whole these days? Please choose one number between 1 and 10.	
9c. How satisfied are you with the financial situation of your household? Please choose one number between 1 and 10.	
8a. Did you vote in the last general election in August 2017?	
8b. In this area, which party did most people vote for in the recent election?	
<b>Opinions</b>	
I am now going to read 7 government policies. Please tell me which two you believe are most important for Kenya:	
a) Electricity in households, b) Education, c) Reduce corruption, d) Better hospitals, e) Better roads, f) Fighting terrorism, g) Support for agriculture	
12. Choose government priority #1	
13. Choose government priority #2	
<b>Security</b>	
OBSERVE: Do you see an external light Bulb anywhere in the compound	
PLEASE ENSURE THE PRIVACY OF THE FR FOR THIS SECTION. IF THERE ARE INDIVIDUALS WITHIN EARSHOT WHO APPEAR TO BE OVER AGE 5, ASK TO SPEAK WITH THE FR PRIVATELY.	
READ: Now I would like to ask you some questions about safety in this area. Please remember that this survey is confidential and that the information will be used for research purposes only. Feel free to skip these questions if you do not feel comfortable answering them.	
10. With regards to safety, would you describe this area as very secure, secure, neither secure nor insecure, insecure, or very insecure?	
During the last 12 months, has someone stolen or attempted to steal any livestock from you?	
During the last 12 months, has someone stolen or attempted to steal any household items?	
During the last 12 months, has someone stolen or attempted to steal any cash from you?	
During the last 12 months, has someone assaulted you without a weapon?	
During the last 12 months, has someone assaulted you using a weapon (such as a club, machete or gun)?	
During the last 12 months, have you been the victim of arson?	
During the last 12 months, have you been the victim of witchcraft?	
During the last 12 months, have you been the victim of any other crime or attempted crime?	
Please describe any other crime or attempted crime	
Have you ever received a cash transfer from GiveDirectly?	
When did you receive this cash transfer?	
Year:	
Month:	
How much money did you receive? (report in Ksh)	
Additional comments?	

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<b>Section E1 - Self-Employment</b>
READ: I will now ask you some questions about your employment status.
READ: Please remember that this survey is confidential and that the information will be used for research purposes only.
1. Other than farming, are you currently self-employed or running a business to earn a living?
READ: Now we would like to learn about each of the current businesses you are running or the activities you are performing while self-employed, starting with your current most important self-employment position.
<b>Self-employment</b>
READ: Now, let's talk about your next business.
2. In what industry is this business?
2a. SPECIFY OTHER
2b. Please provide more information about this business in regards to type of product(s) sold.
3. Who is the main decision-maker for this business?
3a. SPECIFY OTHER RELATIONSHIP.
4. Does this business use electricity?
5. How many hours did you work in total in this business in the last 7 days?
6. In the last 12 months, how many months did you work in this business?
7. How many workers are you currently employing, not including yourself?
8a. What were your total earnings (money in only – do not subtract any expenses) from this business in the last month? Here we mean the amount you received from this business for sales & services provided BEFORE subtracting any expenses for payment of workers, or purchase of inputs, personal, or family items. Please report this in Kenyan shillings.
8b. What were your total earnings from this business in the last 12 months?
9a. What was your total profit from this business in the last month?  Here we mean the amount you received AFTER paying for expenses for this business, including hired workers, money for household members who helped, purchase of goods for sale or for inputs, such as raw materials, fuel, and electricity, but BEFORE purchasing personal items for yourself or your household. Please report this in Kenyan shillings.
9b. What was your total profit from this business in the last 12 months?
12. In what month and year did you start, purchase, or gain control of this business?
Month:
Year:
14. Have you made any new investments or expansions to your business in the past 12 months?
14a. What type of investment or expansion was this?
14a. SPECIFY OTHER TYPE:  IF THERE IS ANOTHER BUSINESS OR ACTIVITY, SELECT "ADD GROUP." IF YOU HAVE RECORDED 3 ACTIVITIES, SELECT "DO NOT ADD" ANOTHER GROUP.
37b. Since January 2014, have you ever closed, sold or transferred control of a business?
READ: We would like to learn about the history of businesses you have closed, sold or transferred control of since January 2014
38. In what year did you most recently close, sell or transfer control of a business?
39. Did you close, sell or transfer control of the business?
39a. For what amount did you sell the business? Please report this in Kenyan shillings.
39b. To whom did you transfer or sell the business?
39b. SPECIFY OTHER RELATIONSHIP:
40. Why did you choose to close, sell or transfer control of your business?
40. SPECIFY OTHER REASON:
41. In what industry is this business?
41. SPECIFY OTHER INDUSTRY.
49. Would you want to start your own (or another) business in the next five years?
49a. What kind of business would you start?
49a. SPECIFY OTHER
49b. Please tell me the main reasons why you have not yet started a business (or another business).

## Appendix C - LSK Follow-up Round 2 (2017)

49b. SPECIFY OTHER REASONS:
49c. How much funding would you need to start your own (or another) business?
51. Are there any other businesses that are operating in this compound (that we haven't previously discussed)?
52. In what industry is this business?
52b. Who owns this business?
52a. SPECIFY OTHER
53. Does this business use electricity?
54. How many workers does this business currently employ?
55. What were the total earnings from this business in the last month? Here we mean the amount received from this business for sales & services provided before subtracting any expenses for payment of workers, or purchase of inputs, personal, or family items. Please report this in Kenyan shillings.
56. What was the total profit from this business in the last month?  Here we mean the amount received after paying for expenses for this business, including hired workers, money for household members who helped, purchase of goods for sale or for inputs, such as raw materials, fuel, and electricity, but before purchasing personal items for yourself or your household. Please report this in Kenyan shillings.
Additional comments?

## Appendix C - LSK Follow-up Round 2 (2017)

<b>Section E2 - Employment</b>
READ: Now we would like to learn about what jobs you currently hold, starting with your most important position. Please do not include self-employment positions in your answer.
1. Are you currently employed, working for pay?
Current jobs
Now, let's talk about your next job.
2. In what month and year did you start this job?
YEAR:
MONTH:
3. In what occupation is this work?
3. SPECIFY OTHER OCCUPATION:
6a. In which months did you work at this job during the last 12 months?
7. How many hours did you work at this job during the last 7 days?
8. What is the relationship between you and your employer?
8. SPECIFY OTHER RELATIONSHIP:
Please estimate your total compensation from this job over the last month. Please include your cash salary, in addition to any other benefits such as: payment in kind in food, NSSF / health insurance, housing benefits, uniforms / clothing benefits, training allowance, and any other allowances and benefits.
11. What is / was the amount of your total compensation over the past month? Please record this amount in Ksh.
You listed \${sE2_11} Ksh. Is that correct?
15. On average, how many minutes does it take you to get to this job from where you normally stay?
17. Do you have another current job?
IF THE FR HAS ANOTHER JOB, CHOOSE "ADD GROUP".
17a. You currently have \${njobs} jobs. Is that correct?
18a. At any time since January 2014, were you employed, working for pay?
18b. In which months did you work at any job for pay during the last 12 months? Include the current month.
19. Are you currently looking for a job, or another job?
20. Why not?
20. SPECIFY OTHER REASON.
21. During the last 7 days, how many hours did you spend actively searching for jobs, applying for jobs, or in interviews?
34. Did you leave a job this month?
35. Why did you leave this work?
35. SPECIFY OTHER REASON:
Additional comments?

## Appendix C - LSK Follow-up Round 2 (2017)

<b>Section H - Health</b>
READ: Now I would like to ask you some questions about your health and nutrition.
READ: Please remember that this survey is confidential and that the information will be used for research purposes only.
1. How many meals did you eat yesterday? Chai (tea) itself is not to be considered as a meal.
2a. Did any of these meals include meat or fish?
2b. Did any of these meals include eggs?
4. How would you rate your appetite over the last 7 DAYS?
5. In the last 7 DAYS, have you smoked any cigarettes?
6. In the last 7 DAYS, how many alcoholic drinks have you had?
6a. In the last 7 DAYS, how many days did you go to sleep hungry because there was not enough food?
6b. In the last 7 DAYS, how many days did any adults other than you in the household go to sleep hungry because there was not enough food?
6b. In the last 7 DAYS, how many days did any children (<18 years) in the household go to sleep hungry because there was not enough food?
7. READ: I am going to read to you a list of illnesses and symptoms. Please let me know if you have experienced any of these illnesses or symptoms in the last four weeks.
(7A) Fever
(7B) Persistent cough
(7C) Always feeling tired
(7D) Stomach pain
(7E) Worms
(7F) Blood in stool
(7G) Rapid weight loss
(7H) Frequent diarrhea
(7I) Skin rash or irritation
(7J) Open sores / boils
(7K) Difficulty Swallowing
(7L) Serious wound or injury
(7M) Malaria
(7N) Typhoid
(7O) Tuberculosis
(7P) Sores or ulcers on the genitals
(7Q) Cholera
(7R) Yellow fever
(7S) Asthma / breathlessness at night
(7T) Frequent and excessive urination
(7U) Constant thirst / increased drinking of fluids
(7V) Diabetes
(7W) Unusual discharge from the tip of the penis.
(7X) Anything else that I have not mentioned?
(7X) DESCRIBE OTHER SYMPTOM.
11. Did you sleep under a bednet last night?
12. During the last 4 weeks, how many days of work or housework or school did you miss due to poor health?
13. How would you describe your general health?
<b>Marriage</b>
PLEASE ENSURE THE PRIVACY OF THE FR FOR THIS SECTION. IF THERE ARE INDIVIDUALS WITHIN EARSHOT WHO APPEAR TO BE OVER AGE 5, ASK TO SPEAK WITH THE FR PRIVATELY.
READ: Now I would like to ask you some questions about any marriages you might have had. Please remember that this survey is confidential and that the information will be used for research purposes only. Also, I understand it may be difficult or upsetting to talk about, but please remember to include marriages that may now be over.

## Appendix C - LSK Follow-up Round 2 (2017)

3. Since January 2014, have you married anyone? Do not include a marriage that began before January 2014.
4. Are you currently married?
5. Do you have plans to be married in the next 12 months?
<b>Fertility</b>
PLEASE ENSURE THE PRIVACY OF THE FR FOR THIS SECTION. IF THERE ARE INDIVIDUALS WITHIN EARSHOT WHO APPEAR TO BE OVER THE AGE OF 5, PLEASE ASK TO SPEAK WITH THE FR PRIVATELY.
READ: Now I would like to ask you some questions about your fertility and any children you might have. Please remember that this survey is confidential and that the information will be used for research purposes only. Also, I understand it may be difficult or upsetting to talk about, but please remember to include pregnancies that did not end in live birth.
3. Since January 2014, how many times has a sexual partner of yours been pregnant with your child (including pregnancies that are current or ended in stillbirth, miscarriage or abortion)?
3. Since January 2014, how many times have you been pregnant (including pregnancies that are current or ended in stillbirth, miscarriage or abortion)?
READ: Let's discuss these recent pregnancies, starting with the first one since January 2014 if there was more than one.
<b>Pregnancies</b>
NOTE: ENTER TWINS AS TWO SEPARATE PREGNANCIES.
7. Is this a current pregnancy?
8. How did the pregnancy end?
9. In what month and year did the pregnancy end?
MM:
YYYY:
29. Has a sexual partner of yours been pregnant with any other children of yours (including pregnancies that are current or ended in stillbirth, miscarriage or abortion), since 2014?
29. Have you had any other pregnancies (including pregnancies that are current or ended in stillbirth, miscarriage or abortion) since 2014?
IF THERE IS ANY OTHER PREGNANCY since 2014 AND NOT LISTED HERE, CLICK "ADD GROUP" IN THE NEXT SLIDE.
IF NO OTHER PREGNANCY since 2014, CLICK "DO NOT ADD" GROUP IN THE NEXT SLIDE.
31. Do you have any biological children, born BEFORE January 2014, that we have not discussed just now? I know it may be difficult or upsetting, but please include children who are alive as well as children who were born alive but are no longer living now.
32. How many other biological children, born BEFORE January 2014, do you have – whether they are currently living or not?
33. How many of these children are currently living?
Additional comments?

## Appendix C - LSK Follow-up Round 2 (2017)

<b>Section G - Credit</b>
<b>Savings and borrowing activities</b>
READ: I would like to begin this section by asking you some questions about your savings activities.
1a. Do you use any mobile banking services, like M-Pesa, Airtel Money, or Equitel?
1b. Do you participate in a SACCO, merry-go-round, or ROSCA?
1c. Do you have a savings account in a formal bank?
READ: I would now like to ask you some questions about your borrowing activities.
1d. In the past 12 months, have you ever borrowed money either formally or informally? If so, from who did you borrow money?
1e. In the past 12 months, did you ever try to borrow money but were refused? If so, from who did you try to borrow money?
1f. Would you like to borrow more or are you happy with your current amount of borrowing?
READ: For the following questions, if you do not know the exact amount please guess what you think it is.
2a. What is the total amount in shillings in your mobile banking account right now?
2b. What is the total amount in shillings of SACCO / merry-go-round / ROSCA contributions that you made last month?
2c. What is the total amount in shillings in your bank account right now?
READ: I would now like to ask you some more questions about your borrowing activities.
2d. For what purpose did you take out your loans?
Specify other
2e. What is the total amount that you borrowed from commercial banks or lenders in the past 12 months?
2f. What is the total amount that you borrowed informally from a friend or family member in the past 12 month in shillings?
2g. Why have you not had any loans in the past 12 months?
Specify other
2h. If you could borrow more money in the next month, what would you use it for?
Specify other
Additional comments?

## Appendix C - LSK Follow-up Round 2 (2017)

Section C - Household and land characteristics	
<b>Household</b>	
NOTE: Please observe the materials of the floors, roof and walls, and record your observations in the following questions. Do not ask the respondent.	
2. How many rooms are in this building?	
1a. What materials are the floors made of?	
Specify other	
1b. What materials is the roof made of?	
Specify other	
1c. What materials are the walls made of?	
Specify other	
1d. What type of window coverings do you have?	
Specify other	
READ: I would now like to ask you a few questions about your home. Please think of your current residence only (i.e. the main house of the compound or the building where you eat). We are only interested in the current residence, not (necessarily) ancestral land (even if the current residence is a rental).	
1e. What kind of toilet facilities does your household use most often?	
Specify other	
1f. Over the past 7 days, what was your household's main source of drinking water?	
Specify other	
1g. If floor material is other, please specify.	
1h. If roof material is other, please specify.	
1i. If wall material is other, please specify.	
1j. If window coverings is other, please specify.	
1k. If toilet is other, please specify.	
1l. If drinking water is other, please specify.	
<b>Household assets</b>	
READ: How many of the following assets does your household own? Please think only of items that your household owns, and do not count items that are owned by other households in this compound. If an item is broken but you plan to fix it, please still include it.	
7a. Bed	
DO NOT READ ALOUD: There are \${Oldhhsize} members of the household, but only \${c7a} beds. Are you sure this is correct?	
7b. Bednet	
7c. Kerosene stove	
7d. Kerosene lamp	
7e. Hoe	
7f. Bicycle	
7g. Motorcycle	
7h. Car/truck	
7i. Sofa pieces (all kinds)	
<b>Livestock</b>	
8a. Chickens	
8b. Cattle	
8c. Goats	
8d. Pigs	
8e. Sheep	
Additional comments?	

## Appendix C - LSK Follow-up Round 2 (2017)

Section D - Agriculture	
Activities	
1a. What are the agricultural or pastoralist activities that members of your household perform?	
Specify other	
Agriculture	
Please identify up to three main crops that you grow.	
2b. Crop #1.	
2c. Crop #2.	
2d. Crop #3.	
2e. Over the past 12 months, did you use any of the following?	
Agricultural labor	
READ: Thank you. I would now like to ask you how much time you and members of your household spend on these agricultural activities. Over the past 7 days...	
3a. ...how many hours did you work in total on these activities?	
Income from agricultural activities	
In this section we will discuss total sales and net profits. When we ask about net profits we mean the value of everything you produced, whether or not you sold it, but then subtracting out expenses for this activity, including hired workers, land rental, storage, and purchase of inputs, such as raw materials, fuel, and electricity, but before purchasing personal items for yourself or your household.	
How much did your household receive in total in sales from selling crops...	
4a. ...over the past month?	
4b. ...over the past 12 months?	
How much did your household receive in total in net profits from selling crops...	
4a. ...over the past month?	
4b. ...over the past 12 months?	
How much did your household receive in total in sales from selling livestock/ livestock products over the...	
4c. ...over the past month?	
4d. ...over the past 12 months?	
How much did your household receive in total in net profits from selling livestock/ livestock products over the...	
4c. ...over the past month?	
4d. ...over the past 12 months?	
How much did your household receive in total in sales from selling poultry/ poultry products over the...	
4e. ...over the past month?	
4f. ...over the past 12 months?	
How much did your household receive in total in net profits from selling poultry/ poultry products over the...	
4e. ...over the past month?	
4f. ...over the past 12 months?	
How much did your household receive in total in sales from selling fish over the...	
4g. ...over the past month?	
4h. ...over the past 12 months?	
How much did your household receive in total in net profits from selling fish over the...	
4g. ...over the past month?	
4h. ...over the past 12 months?	
How much did your household receive in total in sales from selling your "other" activity over the...	
4i. ...over the past month?	
4j. ...over the past 12 months?	
How much did your household receive in total in net profits from selling your "other" activity over the...	
4i. ...over the past month?	
4j. ...over the past 12 months?	

## Appendix C - LSK Follow-up Round 2 (2017)

NOTE: Please verify whether the agricultural activities were also counted as income in the employment section. If so, please mark this down below:
Was the agricultural income from selling crops already counted in the employment section?
Was the agricultural income from selling livestock/livestock products already counted in the employment section?
Was the agricultural income from selling poultry/poultry products already counted in the employment section?
Was the agricultural income from selling fish/fish products already counted in the employment section?
Was the agricultural income from selling the "other" activity already counted in the employment section?
Additional comments?

## Appendix C - LSK Follow-up Round 2 (2017)

Household members
READ: I would now like to know the education and the occupation of the people that are on the roster so far.
What is the highest level of education completed by \${Name1New} (birthyear \${Year1New})?
Are they currently employed or running their own business?
What is the current occupation of \${Name1New} (birthyear \${Year1New})?
Was \${Name1New} self-employed or running a business in the last 30 days? Please do not include any businesses already discussed.
What was \${Name1New}'s self-employment profits in the last 30 days (in Ksh)?
We mean the amount received after paying for expenses for this business, including hired workers, money for household members who helped, rental of space, purchase of goods for sale or for inputs, such as raw materials, fuel, and electricity, but before purchasing personal items. If unsure, FR can estimate.
Was \${Name1New} employed or working for pay in the last 30 days? Please do not include self-employment. Also, please do not include employment in your own businesses that we've discussed, but do include employment in the businesses of other household members.
What was \${Name1New}'s wage employment compensation in the last 30 days?
This includes both cash salary and the total value of all benefits and payment in kind (e.g. food, NSSF/ health insurance, housing, uniforms/ clothing, training, etc) received in the last 30 days worked at this job.
If this employment is in the business of a hh member: READ: If you are working for a household member, only include direct job compensation, but not food and housing that you share in as a household.
Ask for pre-tax compensation, where applicable. If unsure, FR can estimate.

## Appendix C - LSK Follow-up Round 2 (2017)

Children test scores
READ: I would now like to know about each child in the household who was born between 2000 and 2004.
What is the name of the primary school \${Name1New_2016} (birthyear \${Year1New_2016}) attended?
Does \${Name1New_2016} (birthyear \${Year1New_2016}) attend boarding school?
Did \${Name1New_2016} (birthyear \${Year1New_2016}) take the KCPE?
Did \${Name1New_2016} (birthyear \${Year1New_2016}) take it in 2015?
What was his/her score for the 2015 test?
Did \${Name1New_2016} (birthyear \${Year1New_2016}) take it in 2016?
What was his/her score for the 2016 test?
Did \${Name1New_2016} (birthyear \${Year1New_2016}) take it in 2017?
What was his/her score for the 2017 test?
What is the best phone number to follow up about this in the future?

## Appendix C - LSK Follow-up Round 2 (2017)

<b>Section Z</b>
<b>LSK 2017 - End time</b>
READ: Thank you very much for your time, all of this information will be kept strictly confidential. You will receive no direct benefits for having participated in this survey.
NOTE: Thank you for your hard work! You have reached the end of the survey. Please allow the respondent to continue with his or her day. Please fill in the remaining questions before exiting the compound.
<b>Comprehension and cooperation</b>
1a. Rate the comprehension level of the respondent:
1b. Rate the cooperation level of the respondent:
1d. Have you given your respondent a gift of appreciation?
1e. In what language did you use the Survey on your tablet today?
1f. What was the main language you used to communicate verbally with the respondent today?
1c. What language(s) is this respondent most comfortable with?
<b>Presence of others</b>
2a. Was anyone else present during the interview?
2b. What is the name of this person?
2c. Did this person assist the respondent with his/her answers?
<b>Survey information</b>
4a. Please enter your REMIT ID number:
4b. Transformer ID:
4c. Household ID:
<b>Qualitative questions</b>
NOTE: Please now enter the responses to the qualitative questions. Please record as many details as possible.
4n. What are the best things about having an electricity connection?
4o. What are the worst things about having an electricity connection?
4p. How has electricity impacted your life?
3d. What are the best things about having an electricity connection?
3e. What are the worst things about having an electricity connection?
3f. If you had electricity, how do you think it would impact your life?
3g. What are the good or bad things about your neighbor having an electricity connection?
<b>Comments</b>
NOTE: Earlier, this household said that they were not living in this same house three years ago, in 2014. Please ask them to guide you to their old house, if it is in this community.
If a new family is living in their old house, please complete a separate survey. Please use "98" or "99" as the household ID.
If not, please complete a missing household survey.
5. Please enter any additional important comments.
Has this survey been double checked?
Is the survey complete?

<b>Location</b>
NOTE: You have reached the end of the survey. Please step outside and record the location of this main household.
Record your location.
Record location by hand if device not working

**Note on data management/access and pre-analysis plan**

Date: October 5, 2017

On October 4, 2017, we launched a second follow-up survey to measure the social and economic living standards of roughly 2,500 households in our sample of communities in Western Kenya.

As of October 5, 2017, we have neither analyzed any data nor filed a second pre-analysis plan, outlining key research questions, outcomes, and estimating equations related to this particular round of data collection. This second pre-analysis plan will be prepared by Kenneth Lee, Edward Miguel, and Catherine Wolfram, and will be uploaded to the AEA RCT Registry in the near future.

In general, survey data will be compiled, organized, and stored by the field management team based in Busia, Kenya. During the first weeks of data collection, this team, consisting of Stephen Harrell, Catherine Wright, Carolyne Nekesa, and Ben Wekesa, will prepare and provide Kenneth Lee, Edward Miguel, and Catherine Wolfram with access to de-identified survey data for up to 10% (i.e., 250 surveys) of the total surveys. This data will also be stripped of any indicators that may expose the treatment status of households.

This initial access will be provided in order to:

1. Identify and correct any coding errors in the survey instrument that are causing certain questions to be skipped.
2. Make improvements to the choice sets for multiple-choice questions, to better reflect the types of answers that are provided on the ground.
3. Identify and amend questions that are taking too much time and, as a result, are creating delays.
4. Identify and address any other technical issues with the survey instrument.
5. Make any final additions to the survey instrument to address minor questions.

Full access to the dataset will be provided to all research team members once the pre-analysis plan has been filed on the AEA RCT Registry.



## Appendix D - Note on data management/access and pre-analysis plan

KEN LEE &lt;kennethlee@berkeley.edu&gt;

### Note on data management, access and the pre-analysis plan for the Rural Electrification Project

Stephen Harrell <stephenharrell@gmail.com>  
To: Kenneth Y Lee <kennethlee@berkeley.edu>

Thu, Oct 5, 2017 at 4:30 PM

I confirm that I have read the note on data management, access, and the pre-analysis plan, dated October 5, 2017, and agree to follow the specified plan.

Stephen Harrell  
PhD Student  
AEARCTR-0000350



## Appendix D - Note on data management/access and pre-analysis plan

KEN LEE &lt;kennethlee@berkeley.edu&gt;

### Note on data management, access and the pre-analysis plan for the Rural Electrification Project

Ken Lee <kennethlee@berkeley.edu>  
To: Kenneth Y Lee <kennethlee@berkeley.edu>

Thu, Oct 5, 2017 at 2:57 PM

I confirm that I have read the note on data management, access, and the pre-analysis plan, dated October 5, 2017, and agree to follow the specified plan.

Kenneth Lee  
Post-Doctoral Research Fellow, University of California, Berkeley  
AEARCTR-0000350



## Appendix D - Note on data management/access and pre-analysis plan

KEN LEE &lt;kennethlee@berkeley.edu&gt;

### Data management plan

Edward Andrew MIGUEL <emiguel@berkeley.edu>  
To: Kenneth Y Lee <kennethlee@berkeley.edu>

Thu, Oct 5, 2017 at 4:37 PM

I confirm that I have read the note on data management, access, and the pre-analysis plan, dated October 5, 2017, and agree to follow the specified plan.

Edward Miguel

Professor of Economics, University of California Berkeley

AEARCTR-0000350

--

Edward Miguel  
Department of Economics  
University of California, Berkeley



## Appendix D - Note on data management/access and pre-analysis plan

KEN LEE &lt;kennethlee@berkeley.edu&gt;

### Note on data management, access and the pre-analysis plan for the Rural Electrification Project

Carolyne Nekesa <c\_nekesa1@yahoo.com>  
To: Ken Lee <kennethlee@berkeley.edu>

Thu, Oct 5, 2017 at 11:25 PM

Dear Ken,

I confirm that I have read the note on data management, access, and the pre-analysis plan, dated October 5, 2017, and agree to follow the specified plan..

Carolyne Nekesa

Research Consultant

Sent from my iPhone



## Appendix D - Note on data management/access and pre-analysis plan

KEN LEE &lt;kennethlee@berkeley.edu&gt;

### Note on data management, access and the pre-analysis plan for the Rural Electrification Project Inbox x

Ben Wekesa <bwekesa@poverty-action.org>  
To: Ken Lee <kennethlee@berkeley.edu>

Thu, Oct 5, 2017 at 8:58 PM

I confirm that I have read the note on data management, access, and the pre-analysis plan, dated October 5, 2017, and agree to follow the specified plan.

Ben Oidi Wekesa  
Research Associate  
AEARCTR-0000350

Note on data management.pdf  
58K



## Appendix D - Note on data management/access and pre-analysis plan

KEN LEE &lt;kennethlee@berkeley.edu&gt;

### Data management plan

Catherine Wolfram <cwlfram@berkeley.edu>  
To: Ken Lee <kennethlee@berkeley.edu>

Thu, Oct 5, 2017 at 3:56 PM

Hi Ken-

I confirm that I have read the note on data management, access, and the pre-analysis plan, dated October 5, 2017, and agree to follow the specified plan.

Catherine Wolfram  
Cora Jane Flood Professor of Business Administration  
AEARCTR-0000350



## Appendix D - Note on data management/access and pre-analysis plan

KEN LEE &lt;kennethlee@berkeley.edu&gt;

### Statement on data management

Catherine Wright <cwright@berkeley.edu>  
To: KEN LEE <kennethlee@berkeley.edu>

Thu, Oct 5, 2017 at 3:37 PM

I confirm that I have read the note on data management, access, and the pre-analysis plan, dated October 5, 2017, and agree to follow the specified plan.

Catherine Wright  
Graduate Student Researcher  
AEARCTR-0000350