

---

# Pre-analysis Plan for Midline Data: General Equilibrium Effects of Cash Transfers\*

**Investigators:** Johannes Haushofer<sup>†</sup>, Edward Miguel<sup>‡</sup>, Paul Niehaus<sup>§</sup> and Michael Walker<sup>\*\*</sup>

**Date:** May 2016

**Summary:** This document outlines the plan for analyzing midline data collected from markets and enterprises to evaluate the impact of exogenous wealth shocks on local economies. The project is a randomized evaluation of unconditional cash transfers (UCTs) provided by the NGO *GiveDirectly* (GD) in Kenya as part of the General Equilibrium Effects (GE) project. To understand the wider effects of UCTs on local economies, we designed a two-level randomized controlled trial where treatment status is randomized at level of the village and treatment intensity at the level of the sublocation (the administrative district above the village level). This document includes regression specifications and outcome variable definitions that we will use for analyzing midline data collected via i) market surveys on prices and market participants and ii) phone surveys of enterprises on outcomes including prices, profits, and revenues. As we describe in this plan, these data are part of a larger, ongoing data collection effort targeting households, enterprises and local officials as part of the GE project. We restrict our attention in this document to midline data and hypotheses on the main research hypotheses regarding impacts on an aggregate market price index (H1); market availability and variety of goods (H2); and an index of enterprise outcomes (H3). We will register additional pre-analysis plans for the other data collection efforts.

**Appendix A:** Market Survey Instrument

**Appendix B:** Enterprise Phone Survey Instrument

**Appendix C:** KLPS Round 3 Wave 2 E+ Consumption and Expenditure Modules

---

\* We thank Christina Brown, Genevieve Denoeux, Gabriel Ngoga and Francis Wong for excellent research assistance, GiveDirectly for collaboration, and IPA-Kenya for data collection. The research described in this pre-analysis plan has been funded by a Private Enterprise Development in Low-Income Countries (PEDL) exploratory grant and an anonymous donor. Niehaus is a co-founder and president of GiveDirectly.

<sup>†</sup> Princeton University, [haushofer@princeton.edu](mailto:haushofer@princeton.edu).

<sup>‡</sup> UC Berkeley, [emiguel@berkeley.edu](mailto:emiguel@berkeley.edu).

<sup>§</sup> UC San Diego, [pniehaus@ucsd.edu](mailto:pniehaus@ucsd.edu).

<sup>\*\*</sup> UC Berkeley, [mwwalker@berkeley.edu](mailto:mwwalker@berkeley.edu).

# 1 INTRODUCTION

## 1.1 BACKGROUND

The impact of wealth changes on life outcomes is one of the central unanswered questions in development economics. Recent studies have begun to shed light on the response of individual households to unanticipated, unconditional wealth shocks; however, very little is known about the effects of such household wealth changes on the local economy, including their effects on enterprises (creation, revenue, and profits), local public finance and governance (public goods, revenue collection, fundraising, and disputes), prices (local commodities, traded goods, services, and land), and how these effects vary and decay spatially.

We study the effects of exogenous wealth shocks on local economies through a unique unconditional cash transfer program in Kenya. Specifically, we conduct a randomized controlled trial of the unconditional cash transfer program of the NGO GiveDirectly (GD), which makes unconditional, unanticipated one-time transfers of USD 1,000 (nominal) to poor households in Kenya. A transfer of this magnitude corresponds to about six months of consumption for recipient households, as measured in a nearby area. The intervention we study involves over USD 11 million in cash transfers distributed across 653 villages in rural Kenya. Half of these villages were randomly assigned to be treatment villages, in which each eligible household receives a cash transfer. This randomization allows us to rigorously estimate the impact of cash transfers on recipient households. The unique feature of this study, however, consists in a second layer of randomization at the level of the sublocation (an administrative unit containing between two and fifteen villages). Specifically, we randomize treatment intensity at the sublocation level, such that in half of all sublocations, two-thirds of villages are assigned to treatment status (high-saturation sublocations); in the other half of sublocations, one-third of villages are assigned to the treatment condition (low-saturation sublocations). This randomization provides exogenous spatial variation in treatment density that we can use to estimate the effect of transfers on markets located in our study area.

The GE project collects data on households, enterprises, markets, local public goods and schools to determine the effects of cash transfers on a wide range of outcomes. This document focuses on outcomes related to midline data collection – namely, monthly market price surveys and monthly phone surveys of enterprises – with the goal of understanding impacts on an aggregate market price index (H1); market availability and variety of goods (H2); and an index of enterprise economic

activity (H3). Price effects are a key potential general equilibrium effect of cash transfers that could have important welfare consequences for non-recipients. Price effects may be diminished due to supply side responses, either via greater product availability in markets or changes in the amount of economic activity undertaken by enterprises. We focus on these outcomes as midline data collection is ongoing; future pre-analysis plans will outline specifications and outcome variables related to endline data collection.

Our study takes place in Siaya County, Kenya, a rural area in western Kenya bordering Lake Victoria. Our study area is composed of three contiguous subcounties, the administrative unit below the county, out of the 6 total subcounties in Siaya County: Alego, Ugunja and Ukwala. GD selected this region in Kenya based on its high poverty levels and identified target villages for expansion; in practice, these were all villages within the study area that a) were not located in peri-urban areas and b) did not receive transfers as part of a previous GD campaign.

Within treatment villages, GD censuses and identifies all households that meet their eligibility criteria. These eligible households then receive a series of 3 transfers totaling about USD 1,000 in a series of three transfers via the mobile money system M-Pesa. The initial transfer, called the “token” transfer, is for USD 72; this is followed by a two large transfers of USD 412,<sup>6</sup> the first made two months after the token transfer, and the second six months after the first large transfer. GD sends out transfers once per month, targeting the 15<sup>th</sup> of each month. Once at least 50 percent of eligible households within a village have completed the enrollment process, transfers to a village were scheduled to begin.

This is a one-time program and no additional financial assistance is provided to these households after their final transfer. GD enrolls and provides transfers to households on a rolling basis; the first villages to receive transfers in our sample received their first token transfer in September 2014, while the last villages in our study received their first transfer in August 2015.

## 1.2 DATA

The main data discussed in this pre-analysis plan comes from three sources: i) market surveys, ii) phone surveys of enterprises, both collected specifically for the GE project; and iii) household expenditure data collected in a nearby area, which is used to construct expenditure shares for

---

<sup>6</sup> Based on average exchange rate of 97 KSH/USD from 9/1/14 to 4/30/16.

weighting market survey products. In addition, we utilize market price data from two additional projects operating in western Kenya in order to estimate overall effects on our full study area.

### 1.2.1 MARKET SURVEY DATA

As part of the GE project, we conduct monthly market surveys in 61 markets across Alego, Ugunja and Ukwala; these constitute all markets in our study area that have a weekly market day, the inclusion criterion. The market surveys are conducted each month, starting around 5 days after GD sends out transfers for the month and running for the course of one week. The surveys collect price information on food products (grains, vegetables, fruit, meat), livestock, hardware, “duka” (kiosk store) products (non-food and packaged food), and other products (fuel, health items, household items, farming items) from 3 vendors of each product in each market. In addition, as a measure of market activity, we collect information on the number of vendors selling dry maize, carpenters, furniture, and hardware.

The market surveys began in different months in each of the three subcounties based on GD’s rollout. We have at least one month of pre-treatment data for all markets in each subcounty. In Alego, this first month is retrospective; the first round of market surveys was conducted in November 2014, immediately after the first households treated by GD in Alego received their first large transfer, but we asked about prices each month back to August 2014, the last month before any households in our study had received their first, token transfers from GD.<sup>7</sup> In Ugunja and Ukwala, price surveys began in January 2015 and March 2015, respectively, the last month before any households in these subcounties received their token transfer from GD, and also collected three months of retrospective data. Market price surveys will continue through endline data collection in order to provide contemporaneous measures of prices at the time of the more detailed household and enterprise endline data collection. Endline is scheduled to begin in May 2016.

The market price survey instrument is available in Appendix A.

### 1.2.2 ENTERPRISE PHONE SURVEY DATA

---

<sup>7</sup> Our principal analyses will include this retrospective data as i) it improves statistical power and ii) quarterly price surveys, whereby price data is collected at a monthly frequency for the past three months, are common in this (see the Kenya Life Panel Survey, for instance). As a robustness check, we will run the same analyses focused only on contemporaneously collected data.

To complement price data collected from markets and to trace out the effects of cash transfers on enterprise profits and revenues over time, we collect monthly data on prices, profits and revenues via phone surveys of select enterprise types. Phone surveys offer a low-cost method for high-frequency data collection. We elected to focus on four types of enterprises: i) small retail shops/dukas (kiosk shops), one of the most common types of enterprises and a seller of a variety of common products; ii) cereal grinders (known as posho mills), one of the most common enterprises and a staple producer; iii) tailoring shops, one of the top 10 most common enterprises and anecdotally a provider of luxury goods; and iv) hardware shops, given that Haushofer and Shapiro (2016) find important effects on home construction. We elected to restrict the types of enterprises that we include in our phone surveys to ensure we have a sufficiently large sample of each type to estimate effects while including enterprise type fixed effects.

The sampling frame for enterprises in the phone survey comes from baseline household and enterprise censuses conducted in each village in advance of cash transfers provided by GD. The census of enterprises focused on enterprises operating from buildings within the village, and is combined with the household census, where households were asked if they are operating an enterprise. Census data collection began in August 2014 and concluded in July 2015. We include all enterprises within the above four types identified through the enterprise census that did not decline consent (1,695 observations<sup>8</sup>) and a random sample of enterprises in the above four categories identified in the household census; we do not add in new enterprises after baseline. We judged our capacity for calls that we could make in a month to be 2,000, and so selected a sample of 305 household enterprises to reach this amount. We allocate the 305 enterprises proportionally to each subcounty based on the number of villages in our study from each subcounty.<sup>9</sup> In order to maintain a representative sample of household enterprises, we sample household enterprises from these four categories proportionally to their prevalence by type in the baseline household census data.<sup>10</sup> We launched enterprise phone surveys for all enterprises in our sample in August 2015, and these will continue at an approximately

---

<sup>8</sup> 14 enterprises in these categories declined consent at the time of the census.

<sup>9</sup> For instance, since Siaya contains 204 out of 653 villages (31%), we include 95 enterprises from Siaya. This implies 78 enterprises from Ugunja (166 out of 653 villages, or 25%) and 133 from Ukwala (284 out of 653 villages, 43%).

<sup>10</sup> We did not collect enterprise type data from households in Siaya at the time of the census, so we based proportions on data from Ugunja and Ukwala. In Siaya, we generated a randomly-ordered list and called households that reported operating an enterprise and contacted these until we had reached a sufficient number to sample by type; in other words, at least 95 enterprises across the four categories in our sample.

monthly frequency until endline. In subsequent phone survey rounds, if we had missed the enterprise in a previous round, we attempted to collect data for rounds that were missed.

We learned via the enterprise phone surveys that field officers misclassified and double-counted some enterprises at the time of the census. We will drop misclassified enterprises that are not operating one of the four types of enterprises described above from the sample, and we discontinued phone surveys of misclassified enterprises.<sup>11</sup> In addition, to improve upon tracking rates and to ensure that we had as representative a sample as possible, we conducted intensive tracking for enterprises for which we did not have working contact information in rounds 1 to 4. We sampled 60 of these 247 enterprises (25%) to receive an in-person visit to the village in which the enterprise operated to get contact information and to collect retrospective information on prices and profits over the past 5 months. We successfully surveyed 78% of these intensively-tracked enterprises. We will use sampling weights in our enterprise survey specifications to account for this tracking approach.

The enterprise phone survey instrument is included as Appendix B.

### 1.2.3 CONSUMPTION/EXPENDITURE DATA

The final type of data is household expenditure data, used as weights for a price index. Due to time and budget constraints with baseline survey data collection, we did not conduct a consumption/expenditure module at baseline (this will be included as part of the endline survey). We will instead make use of expenditure shares collected in the vicinity of our study that were collected as part of the Kenya Life Panel Survey.<sup>12</sup> The Kenya Life Panel Survey (KLPS) is a longitudinal dataset of nearly 10,000 Kenyan youth that participated in one of two previous randomized NGO programs – one which provided merit scholarships to upper primary school girls in 2001 and 2002 (Kremer, Miguel, and Thornton, 2009), and one which provided deworming medication to primary school students during 1998-2002 (Miguel and Kremer, 2004) in an area of western Kenya near our study. The most recent survey round was KLPS Round 3, and this serve as a baseline for expenditure shares. We prefer using existing expenditure data for our main specifications rather than endline data

---

<sup>11</sup> Through the completion of the first 5 rounds of surveys, there were 92 enterprises that were misclassified and 7 cases of double-counting.

<sup>12</sup> To be precise, we will restrict KLPS-3 data to households living in rural areas in Western and Nyanza provinces.

because changes in expenditure shares could be endogenous. The relevant portion of the KLPS-3 survey instrument is included as Appendix C.

### 1.3 ANALYSIS AND DATA EXAMINED TO DATE

Data collection is being conducted by Innovations for Poverty Action (IPA), and IPA field staff have withheld all data that could be used to identify treatment effects from the PIs since the start of midline data collection. None of the PIs (namely, Johannes Haushofer, Edward Miguel, Paul Niehaus and Michael Walker) nor research assistants (namely, Christina Brown, Genevieve Denoeux and Francis Wong) have examined any market survey or enterprise phone survey data beyond what is outlined below, nor estimated any program treatment effects before registering this plan. The only market data the PIs and research assistants have been given access to is pre-treatment data, as well as data from August 2014 to June 2015 for one market, Siaya Town, which due to the fact that it is within a town, is not a part of a sublocation assigned to treatment or control for our study. The longer time series of data from Siaya Town was shared to investigate some general trends in seasonality and missing price data over time. The only information the PIs and research assistants have seen from the enterprise phone survey data are overall summary statistics of tracking rates and overall numbers of survey refusals and “don’t know” responses to ensure the viability of the exercise. These have not been disaggregated by treatment status. Gabriel Ngoga, the IPA-Kenya Research Associate for the GE project, has been responsible for managing field data collection for the GE project and has overseen the market survey data and enterprise survey data from the IPA-Kenya Siaya office. His involvement with post-treatment data has been limited to data quality checks, such as ensuring proper data entry of market survey data, proper entry of firm and market identifiers, ensuring all skip patterns in the survey are properly reflected in the data, and constructing summary statistics on tracking rates and missing/don’t know responses. Ngoga has not estimated any treatment effects with any of the midline data. Ngoga shared 4 market survey data files (1 for the first month of data in Alego subcounty, 1 for the first round in Ugunja, 1 for the first round in Ukwala, and 1 for Siaya Town from August 2014 to June 2015 (what had been entered by IPA data entry at the time) with the PIs and RAs in October 2015 via Dropbox.

We intend to register a number of additional pre-analysis plans as part of the GE study, given the large scope of this project and the many different data collection activities we are conducting. This will include at least: i) a pre-analysis plan of endline household and enterprise data collection, once these surveys are finalized; and ii) a pre-analysis plan on local public goods and public finance, as

part of a separate paper by Walker analyzing these effects. We intend to register these additional pre-analysis plans before analyzing any endline survey data from these instruments, but after analysis of the market price data may have begun.

#### 1.4 ROADMAP

The remainder of this document lays out the regression specifications; the main research hypotheses regarding impacts on an aggregate price index (H1); market availability and variety (H2); an index of enterprise activity (H3); and the specific outcomes and sub-hypotheses of these categories. We also discuss our current thinking on additional families of hypotheses related to endline survey outcomes that will be filed as part of additional pre-analysis plans.

We further note that we anticipate carrying out some additional analyses beyond those included in this plan, so this plan is not meant to be comprehensive or to preclude additional analysis. Any such analyses will be flagged as not having pre-registered in papers arising from this project.

## 2 EMPIRICAL SPECIFICATIONS

This section outlines the empirical specifications that we will use with midline data from market and enterprise phone surveys. First, we discuss the construction of an experimental measure of treatment timing which we will use for both markets and enterprises. Second, we lay out the regressions we will estimate at the market level, and lastly we discuss regression specifications for enterprise phone survey data.

### 2.1 CONSTRUCTING EXPERIMENTAL TREATMENT TIMING

A principal goal of the midline analysis is to study the effects of cash transfers over time as well as space. To study temporal effects, we want to leverage variation in the timing of transfers due to the experimental design while avoiding contamination with potentially endogenous variation in implementation. The two ingredients needed for this are i) for each village, an experimental start month of when token transfers were first sent and ii) the share of households within a village that received transfers in the starting month, the month after starting, etc.

As part of our randomization process, we created a randomized order of both treatment and control villages that determined the order in which GD would begin working in treatment villages (and hence the order villages receive treatment) in the following manner: in Alego subcounty, we randomly ordered sublocations within Alego subcounty and then randomly ordered villages within these



sublocations. In Ugunja and Ukwala subcounties, we first randomly ordered locations (the administrative unit above a sublocation) within each subcounty, then randomly ordered sublocations within locations and villages within sublocations. Clustering by locations in Ugunja and Ukwala was added to help prevent gaming of GD's eligibility criteria; since GD had previously worked in Alego prior to the start of the GE project, this was not implemented for Alego. We utilize this randomly ordered list of all treatment and control villages to generate our experimental measure of treatment timing.

We take two approaches to assigning experimental starting months to villages; in both cases, we assign villages based on their place in the random ordering. For our main specification, we make use of GD's average monthly pace in starting transfers to villages over the course of all GE villages, accounting for December/January holiday office closures. By assigning the same pace to all villages, we remove the potential for any correlations between unobserved shocks and experimental timing that could remain after including market and month fixed effects. This is a conservative approach in terms of fit with GD's actual transfer pace, as GD intended to (and indeed did) increase the pace of transfers in Ugunja and Ukwala relative to Alego. As a robustness check that some might prefer due to its higher power and lower mean squared error, our second approach evenly spaces villages across the range of dates GD began sending transfers to villages in each subcounty. Each subcounty was treated sequentially. While the increase in pace in Ugunja and Ukwala was driven by GD's planned intent, we cannot rule out the possibility that unobserved, subcounty-specific factors may have also influenced the pace of work, which introduces the possibility of endogeneity. We thus lead with our main specification, which avoids this concern by applying a constant pace to all villages, before reporting our second specification as a higher-powered robustness check.

Villages in the GE sample first received transfers from September 2014 to August 2015, a total of 12 months. As GD's offices (like many in Kenya) closed for 2 weeks at Christmas, we only count January 2015 as a half month, for a total of 11.5 months. Evenly spacing the 653 villages in our sample over 11.5 months gives a pace of 57 villages per month. For our main approach, we thus assign the first 57 villages an experimental start month of September 2014, the next 57 to October 2014, and so on.

For our second approach, we define the actual start month for a village as the first month in which at least 10 percent of the total token transfers have been sent. In general, at least 50 percent of transfers

to a village are sent in single month, so the 10 percent requirement rules out outlier transfers that may have been sent before the bulk of transfers to a village.

Second, we calculate the range of months in which villages within our three subcounties start receiving transfers. We assign villages within this subcounty evenly over this range of months based on the randomized order. We assign villages in Alego evenly over September to December 2014, the period for which all but one village actually started transfers (the one village began in January 2015). Both Ugunja and Ukwala received transfers in April 2015, so we count this as a half month for both subcounties. This provides an experimental starting month for each village.

Next, for both approaches, we turn to allocating transfers within a village to specific months. We calculate the average share of households (as a percent of all token transfers to a village) that received their token transfer in the first month GD sent transfers to a village, and in the subsequent twelve months, across all villages in the GE sample. We apply this distribution to all treatment villages (and to control villages when we need this counterfactual). As noted previously, GD's general practice was to begin sending transfers to a village once at least 50 percent of eligible households in a village were set to receive transfers; as expected, the majority of transfers are indeed sent in the first month, with a long right tail as the last households eventually receive their first transfer.

$$p_i = \frac{1}{N_T} \sum_{j=1}^{N_T} \frac{\text{Num tokens sent } i \text{ months after start}_v}{\text{Total Tokens}_v} \quad \text{for } i = 0, \dots, 12,$$

where  $N_T$  is the number of treatment villages and  $v$  indexes treatment villages.

We use the experimental start date and experimental share to predict the number of token transfers made to a village in each month. The total number of households receiving transfers in a village is based on the number of eligible households in that village from GE census data. While we do not make explicit use of experimental transfers and timing to control villages in our estimation specifications in this pre-analysis plan, we can better check for balance across treatment and control villages for our density-based treatment measures by using GE census data instead of GD administrative data.

We calculate the predicted number of token transfers per month as:

$$\text{NumToken}_{vt} = \sum_{i=0}^{12} T_v * 1(\text{ExpStartMonth}_v + i = t) * p_i * \text{NumElig}_v$$

where  $T_v$  is an indicator for village  $v$  being assigned to treatment (we omit this when constructing counterfactual treatment timing and density measures for control villages),  $1(ExpStartMonth_v + i = t)$  is an indicator equal to 1 when the experimental start month (as defined above) plus  $i$  equals month  $t$ .  $p_i$  is the share of households receiving tokens  $i$  months after the experimental starting month, and  $NumElig_v$  is the number of eligible households in village  $v$  in the GE household census data.

We use this number to construct a measure of the overall experimental amount of cash sent to a village in a month by assuming that all households receive their first large transfer two months after the token transfer, their second large transfer six months after the first large transfer. We multiply each transfer type by its corresponding value (USD 72 for token transfers, USD 412 for large transfers). This gives an overall variable for the experimental amount of cash transferred to village  $v$  in month  $t$ :

$$ExpAmt_{vt} = NumToken_{vt} * 72 + L2.NumToken_{vt} * 412 + L8.NumToken_{vt} * 412,$$

where L2 and L8 are lag operators.

Our main measure of treatment intensity is based on the per-household amount of cash transferred to villages within set radii of a market/enterprise (for the sake of exposition, we focus here on markets, but an analogous expression applies for enterprises):

$$ExpAmt_{mR} = \frac{1}{\sum_{v \in R} Pop_v} \sum_{v \in R} ExpAmt_{vt},$$

where  $ExpAmt_{mR}$  is the market-level measure of amount of cash per-capita transferred within the radius  $R$  in month  $t$  of market  $m$ ,  $ExpAmt_{vt}$  is the experimental amount of cash transferred to village  $v$  in month  $t$ , and the sum is taken over all villages within radius  $R$  of the market and  $Pop_v$  is the population of village  $v$ . In cases where households within a village fall both within and outside of a radius band, we allocate population and transfer amounts proportionally, based on the percentage of households within the band. For villages within the GE sample, we calculate the population of village  $v$  by multiplying the number of households in GE household census data by the average household size from GE household survey data. For villages and sublocations with our radii of interest for a particular market but that were not part of the GE sample, we employ the following approach: first, for villages in which GD worked but GE did not, we make use of GD census data on the number of households within the village and the mean latitude and longitude coordinates of the village. As GE

attempted to mimic GD’s censusing activities, these values should be comparable. Second, for sublocations in which we have partial coverage (i.e. at least one GE or GD village within the sublocation) – 14 sublocations - we impute the average village size from GE/GD data for villages within the sublocation. As part of our endline activities, we will send an enumerator to collect GPS coordinates of all structures in the village in order to calculate mean GPS coordinates of these villages. Third, for the 7 sublocations within the GE subcounties, plus sublocations outside the GE study area, we will use census figures inflated by Kenyan national population growth. We will spread the population evenly within the sublocation. For instance, if a radii band covers 10% of the area of a sublocation, we can assign it 10% of the population of that sublocation.

As an additional check, we will use the actual transfer amounts sent by GD to each village each month. We have no a priori reason to expect these to be biased, and since these will be the most high-powered specification, if we do not find any effects with our conservative definitions of experimental treatment, this analysis can better inform whether there are no effects.

## 2.2 MARKET-LEVEL REGRESSIONS

Weekly markets play an important role in the local economy, so capturing whether prices or product availability changes at the market level serves as an important factor in household welfare. Our randomized treatment assignment creates variation in the number of recipient households around each market, and hence the amount of cash being transferred into areas surrounding each market over time. As noted above, our main measure of treatment intensity is based on the per-household amount of cash transferred to villages within set radii of a market:

$$ExpAmt_{mtR} = \frac{1}{\sum_{v \in R} Pop_v} \sum_{v \in R} ExpAmt_{vt}.$$

Given the lack of academic knowledge about the spatial spillover effects and agglomeration externalities that may occur due to cash transfer programs, we have no a priori reason to choose a particular set of radii as empirically relevant. We do expect weak monotonicity to hold (if we do not find effects based on treatment intensity 2-4 kilometers from a market, we would not expect to find effects 4-6 kilometers from the market). We also have no a priori expectation regarding the length of time over which effects may persist; we expect effects to be strongest in the months immediately following a large transfer so that similarly weak monotonicity would hold.

Due to the challenges of estimating both spatial and temporal effects at the same time, we propose the following approach. We first fix the temporal dimension to the preceding quarter to find the relevant range of spatial spillovers. We then take these radii and allow for more flexible time-based effects. We start by fixing the temporal dimension because Haushofer and Shapiro (2016) found larger effects in the first four months after receipt of a transfer; we thus expect that if spatial effects exist, they will be present in the months immediately after transfers.

To determine the relevant range of radii bands, we estimate the following equation using our aggregate market price index:

$$y_{mt} = \sum_{R=\{0-2km\}}^{18-20km} \beta_R (ExpAmt_{mtR} + ExpAmt_{m(t-1)R} + ExpAmt_{m(t-2)R}) + \alpha_m + \lambda_t + \varepsilon_{mt}$$

where  $y_{mt}$  is the aggregate (log) price index of interest for market  $m$  in month  $t$ ,  $ExpAmt_{mtr}$  is the per-household amount of cash transferred within radius  $r$  of market  $m$  in month  $t$ , which we aggregate into a measure of the amount transferred in the last quarter (i.e. months  $t$ ,  $t-1$ , and  $t-2$ ),  $\alpha_m$  is a market fixed effect,  $\lambda_t$  is a monthly fixed effect, and  $\varepsilon_{mt}$  is an error term. We calculate Conley (1999, 2008) standard errors using a uniform kernel and classifying all markets within the upper range of the set of radii we consider as near. We include all of our market data in this regression. This gives us a series of nested models; we then use the Schwartz Bayesian Information Criterion to select the optimal number of radii terms while maintaining weak monotonicity. In what follows, let  $R$  denote the set of selected radii.

Once we have determined the relevant range of radii bands, we then take these radii to our full dataset. To determine if there are time effects over broader horizons, we then use the Schwartz Bayesian Information Criterion to select the optimal number of lagged monthly values to include in the regression equation:

$$y_{mt} = \sum_{r \in R} \sum_{l=0}^M \beta_{rl} Amt_{mr(t-l)} + \alpha_m + \lambda_t + \varepsilon_{mt},$$

where we include up to the maximum number of months  $M$  that we have in our data. The regression specification identified via these methods using our aggregate log price index will be our main regression specification. Our main hypothesis tests are i) if the  $\beta_{rq}$  terms are jointly different from zero and ii) if the  $\beta_{rq}$  terms are equal to each other. To account for multiple inference, we will count both of these as separate hypotheses for the sake of adjustment, which is outlined in a later

section. We will also report the price elasticity of transfer amount based on the main (log-linear) regression specification, where the selected spatial and temporal treatment coefficients are evaluated at their means.

We will impose the specification determined by the aggregate price index as our main specification across market hypotheses (H1 and H2) and sub-indices. However, there may be differences in the spatial and temporal effects for supply-side responses (as outlined in H2) or by categories of goods. As a robustness check, we will repeat this methodology for each of the subindices outlined in this document.

We note that there is ongoing development of more sophisticated methods for spatial data analysis, and we are still learning more about these methods. If we find new techniques that allow us to straightforwardly estimate time and spatial dimensions simultaneously, we will seek to use these new methods while still reporting the results from the pre-specified method.

Certain goods such as livestock and other durables are less likely to be sold in all markets; for instance, out of the 61 weekly markets, our field staff identified 9 markets known as livestock markets. For cases of missing price data for a particular good in a market, we will impute this value with the monthly mean of the median prices for markets carrying the good. Hypothesis H2 concerns availability of different goods in markets, so this helps capture differences along the extensive margin which this imputation may miss. To ensure that our standard errors will be correct in light of this imputation, we will bootstrap standard errors by selecting a bootstrap sample of markets and using the same imputation procedure on each bootstrapped sample (Shao and Sitter 1996).

As a secondary specification, we will use the high and low saturation status as our source of variation, assigning markets to the saturation status of the sublocation in which they are located. For markets located in sublocations not assigned a treatment status (namely, markets in peri-urban areas), we use the treatment assignment and treatment start date of the nearest centroid of a sublocation that was assigned an intensity status. We estimate the following equation:

$$y_{mst} = \beta_1 H_s + \beta_2 Post_{st} + \beta_3 H_s * Post_{st} + \alpha_m + \lambda_t + \varepsilon_{mst},$$

where  $y_{mst}$  is our market price index for market  $m$  in sublocation  $s$  at time  $t$ ,  $H_s$  is an indicator for high-saturation sublocations,  $Post_{st}$  is an indicator that turns on once the first village within the

sublocation begins treatment (based on experimental treatment start),  $\alpha_m$  is a market fixed effect and  $\lambda_t$  is a month fixed effect.  $\varepsilon_{mst}$  is an error term, which we cluster at the sublocation level.

### 2.3 ENTERPRISE REGRESSIONS

Our main specification for enterprises is analogous to that of markets, substituting in enterprise type fixed effects for market fixed effects. To be precise, we will estimate:

$$y_{ejt} = \sum_{r \in R} \sum_{l=0}^M \beta_{rl} Amt_{er(t-l)} + \alpha_j + \lambda_t + \varepsilon_{ejt},$$

where  $y_{ejt}$  is the outcome of interest for enterprise  $e$  of type  $j$  in month  $t$ ,  $Amt_{er(t-l)}$  is the per-household amount of cash distributed in month  $t-l$  to villages within radius  $r$  of enterprise  $e$ , using the range of radii and lags identified for enterprise outcomes via the same algorithm as outlined for the aggregate market price index, and  $\alpha_j$  and  $\lambda_t$  are enterprise type and month fixed effects, respectively.

Our main specification will re-run the algorithm to calculate the optimal number radii and temporal lags for the enterprise index. This helps us learn more about the spatial and temporal nature of a supply-side response to a wealth shock and, if different, is an interesting finding in its own right. As a secondary specification, we will take as given the spatial and temporal lags from the aggregate market price index.

We will also report the following regression specifications based on the treatment status of the village in which the enterprise is located, as its interpretation may be simpler and/or more accessible to policymakers. We will estimate:

$$y_{ejvst} = \beta_1 T_v + \beta_2 H_s + \beta_3 T_v * H_s + \gamma_1 y_{evst_0} + \gamma_2 M_{evst_0} + \alpha_j + \lambda_t + \varepsilon_{ejvst},$$

where  $y_{ejvst}$  is the outcome of interest for enterprise  $e$  of type  $j$  in village  $v$  in sublocation  $s$  at time  $t$ ,  $T_v$  is an indicator for an enterprise located in a treatment village,  $H_s$  is an indicator for enterprises located in high saturation sublocations and  $T_v * H_s$  is an interaction between the two. The  $\alpha_j$  coefficients capture enterprise type fixed effect while the  $\lambda_t$ 's are month fixed effects.  $y_{evst_0}$  will be included when available to capture baseline enterprise outcomes to increase statistical power; where baseline values are missing, the mean will be imputed and the indicator  $M_{evst_0}$  for missing baseline values will be set to 1.

Our main specification uses windsorized values for continuous variables, as detailed in Section 5. As a robustness check to be included in an online appendix, we will estimate the above specifications on the raw data and using an inverse hyperbolic sine transformation.

All enterprise regressions will use sampling weights to reflect our intensive tracking procedure for enterprises that were still missing contact information after round 4 of the enterprise phone surveys. We will handle missing enterprise data in the following way: for enterprises with missing values in between periods where we successfully surveyed the enterprise, due either to missing an enterprise and being unable to collect information in a later round, or values of "don't know"/"refuse to answer", we will impute their data with the overall mean for missing outcomes during that month. We will not impute missing values before we were ever able to contact an enterprise or for months after our last successful contact with an enterprise. As for market prices, we will bootstrap standard errors by selecting a bootstrap sample of enterprises and using the same imputation procedure in each sample.

#### 2.4 SUBCOUNTY LEVEL ANALYSIS

The inclusion of market and month fixed effects in our above specifications means we are unable to identify an overall level shift in prices in our study area. To further investigate regional effects, we will estimate a difference-in-difference regression at the subcounty level, comparing maize prices in Siaya to those in neighboring subcounties using data from other projects surveying markets in western Kenya. We note that due to data limitations, these specifications will be underpowered; however, we feel they will provide important suggestive evidence about the regional price effects of cash transfers.

The Weather Risk project collects maize prices from traders in weekly markets in western Kenya during the post-harvest period from February to May of 2015 and March to June of 2016. We create an average market price for each market within a neighboring subcounty (7 in total) based on prices in the morning in the market. The Weather Risk study provided subsidies for some markets, primarily in the afternoon, so the goal of using morning prices is to use prices that are not affected by the subsidies. Weather Risk records transaction-level prices, so we will use 2-kilogram transactions (the same as in the GE market price survey) wherever possible. The Weather Risk project generally surveys markets on a weekly frequency; as GE generally surveys markets between the 20<sup>th</sup> and 26<sup>th</sup> of the month (5 days after GD's target of sending transfers on the 15<sup>th</sup>), we will average observations from the 3<sup>rd</sup> and fourth weeks of the month. If data is not available during these weeks, then we will average over all observations within a month.



The KLPS project also collects market price surveys from select markets in Busia County, which neighbors Siaya. We combine the Weather Risk data with data on maize prices in market price surveys from KLPS, which are available over at least the period from October 2015 through our endline survey. In addition, as the products collected as part of the KLPS market price survey mirrors our own, we will also construct an overall price index using only KLPS data as an additional outcome.

We then use the log price measure in a differences-in-differences regression specification, where GE subcounties are considered treated and neighboring subcounties are considered control:

$$y_{ct} = \alpha_c + \beta_1 Treat_c + \beta_2 Post_{ct} + \beta_3 Treat_c * Post_{ct} + \varepsilon_{ct},$$

where  $\alpha_c$  is a subcounty fixed effect,  $Treat_c$  is an indicator equal to one for GE subcounties,  $Post_{ct}$  is an indicator equal to one for GE subcounties after transfers to the subcounty has begun, and  $Treat_c * Post_{ct}$  is an interaction term, with  $\beta_3$  the coefficient of interest.

## 2.5 PARAMETERIZING SPILLOVER EFFECTS

We will also impose more structure on the nature of spillovers to gain additional insights in cases where SUTVA does not hold by estimating models from the following class of models. Let a potential outcome for village  $v$  be a function of treatment status of all villages. Define "own treatment effect" for village  $v$  as the potential outcome when only it is treated versus potential outcome when no village is treated. Define "average own treatment effect" as the average of this across villages. We will estimate model(s) from the class of models in which the average own treatment effect is identified by our data. This includes, for example, linear decay of spillovers up to a boundary or exponential decay.

## 2.6 EXPLORATORY ANALYSIS: IMPROVING PRECISION WITH MACHINE-LEARNING

As an exploratory analysis, we will use machine-learning methods, such as those outlined in Imbens and Athey (2015), Kleinberg et al (2015), Bloniarz et al (2015), Balzer, van der Laan and Petersen (2015) and van der Laan and Petersen (2012) to select additional covariates to improve precision and to explore additional sources of heterogeneity in treatment effects outside of those outlined in the following section on heterogeneous effects.

## 2.7 HETEROGENEOUS TREATMENT EFFECTS

At the market level, we seek to address whether effects differ for more isolated markets. We will test for heterogeneous effects using interaction terms for the following measures of market isolation:

- Distance to the nearest paved road, using data from Burgess et al. 2015 or updated data if available;
- Distance to the nearest town;
- Density of nearby markets. We will define this in two ways: first, as the number of markets within the upper bound of the radii we identify for price effects; and second, the number of markets within the median distance to the nearest market.

At the enterprise level, we will test for heterogeneous effects using interaction terms in the following dimensions. For all enterprises, we will look at heterogeneity by:

- Enterprise type
- Enterprise owner gender

For the subset of enterprises for which we have baseline data on the following outcomes, we will also look at heterogeneity by:

- Enterprise size, measured by a) baseline revenues and b) baseline number of employees
- Enterprise formality, measured by whether the enterprise has obtained a single business permit from the county government

We discuss multiple testing adjustments for heterogeneous effects in the next section. In addition to using interaction terms, we will also explore heterogeneous effects using the machine-learning framework described in Athey and Imbens (2015). As this framework can preserve valid inference for heterogeneous effects with non-prespecified outcomes, we may also explore additional sources of heterogeneity.

## 2.8 MULTIPLE TESTING ADJUSTMENT

To correct for multiple inference for our main outcomes, we proceed as follows. We use the false discovery rate to control the rate of false rejections among total rejections among these primary outcomes. The advantage of the FDR is that it does not depend on the size of the family and that it has a lower probability of under-rejecting compared to the more conservative family-wise error rate (FWER), while still controlling a reasonable object (i.e. the rate of false rejections among all

rejections, as opposed to the probability of at least one false rejection among the set of hypotheses tested). We use the Benjamini-Hochberg resampling procedure to increase power.

We will calculate both naïve p-values and FDR-adjusted p-values across the main indices in H1 (aggregate price index), H2 (mean effects index of availability and number of vendors) and H3 (mean effects index of enterprise activity). As an additional check, we will also calculate FWER p-values and report these in an appendix. Within each hypothesis, we will report naïve p-values and FDR-adjusted p-values, adjusted based on the number of sub-indices and hypotheses tested within the hypothesis. Namely, this considers the price sub-indices in H1, the availability (for both market and enterprise products) and number of vendors sub-indices in H2, and the enterprise size, non-closure and additional enterprise sub-indices in H3.

Lastly, in addition to a table summarizing the main outcomes, we will report all individual prices and enterprise outcomes with naïve p-values less than or equal to 0.05. We will then calculate and report FDR-adjusted p-values, adjusted across the number of individual outcomes within each hypothesis, for the individual outcomes with significant naïve p-values within each set of hypotheses (H1, H2, and H3).

For heterogeneous effects, in parallel with our corrections for our main outcomes, we will correct p-values on our interaction terms for multiple testing using FDR-adjusted q-values calculated across the number of outcomes per interaction term, most relevant for determining whether heterogeneous effects are statistically significantly different than zero. As part of the appendix, we will include FDR-adjusted q-values where we correct for the number of interactions (dimensions of heterogeneity) for a given outcome, which is most relevant for determining if the magnitude of heterogeneous effects varies across dimensions of heterogeneity.

### 3 MAIN HYPOTHESIS 1 (H1): PRICE EFFECTS

Market surveys collect information on a basket of 78 products.<sup>13</sup> To generate a general measure of how price changes affect household welfare, we will construct a consumption basket for commonly

---

<sup>13</sup> We exclude 1 product (Waterguard) for which we do not have expenditure data. For cases where we only have consumption from a group of goods (e.g. coffee/tea), we evenly split the consumption share across the goods.

purchased goods based on KLPS expenditure data for households in western Kenya. As we are interested in the prices that households face for purchased products, we will base calculations of expenditure shares based on spending, rather than household consumption; this is particularly relevant for agricultural products, where we will not include households' consumption of their own production. Based on calculations from KLPS data, the goods for which we have price data account for 67 percent of household's overall expenditure.

Our primary outcome for this hypothesis is the overall aggregate (Stone) price index:

$$p_{mt} = \sum_j \omega_j \log p_{mjt},$$

where  $p_{mjt}$  is the median price in market  $m$  for good  $j$  in month  $t$ , and  $\omega_j$  are expenditure weights for good  $j$ . Our main specifications for market-level prices will use the median price per market per round for  $p_{mjt}$ , but as a robustness check we will also use the minimum price per market per round.

We construct five sub-indices for i) food, ii) non-food non-durables, iii) durables, iv) livestock and v) temptation goods. The goods that make up each of these categories are reported in the appendix. In addition, we re-arrange these sub-indices to form several additional indices to examine based on theory and past evidence. First, we will look at price effects for durables (durables and livestock) versus non-durables (food and non-food non-durables), treating each as an outcome and testing for whether coefficients differ. Large cash transfers may lead to purchases of durables or less common household purchases. These may compose a small share of consumption in normal times, yet be especially relevant once households have greater purchasing power. Haushofer and Shapiro (2016) found treated households invested in housing construction; to the extent that transfers are spent on different goods than are typically purchased by non-recipient households, the welfare effects of any price increases may not spill over to non-recipients.

Second, standard models of spatial equilibrium suggest that the price effects may vary based on whether the commodity is internationally traded or locally produced. We create price indices for traded and locally produced goods to test whether this is the case, where our traded goods category consists of durables and non-food non-durables, while non-traded is made up of food and livestock.

### 3.1 ENTERPRISE PRICE DATA

In addition to price data from markets, we also collected price data for a limited number of goods and services commonly provided by the types of enterprises in our sample as part of our enterprise phone surveys. We prefer prices measured via markets as our main indicators of the overall price level in are because these are collected in a similar manner to statistical agencies, and we collect information on a wide variety of goods in a consistent manner and at the same point in time. Nonetheless, as enterprises do offer an alternative to markets, determining whether we see price changes in goods sold by enterprises is also a useful exercise.

We calculate log prices for each good and then create an equally-weighted price index for each enterprise. We then treat this enterprise price index as an outcome variable in the main enterprise regression specification. We will report the results as a sub-index within H1. If there are statistically significant effects with naïve p-values, we will include these as part of the table of individual outcomes to test for FDR q-values.

#### 4 MAIN HYPOTHESIS 2: MARKET AVAILABILITY AND VARIETY

Our next set of outcomes concern the availability of products in a market, where we look at the extensive margin for whether or not goods are available in market over time and the number of market vendors selling common products. There are two main sub-indices in this category: the “availability index” and a mean effect index of the number of market participants. We will combine these into an equally-weighted mean effects index to capture the overall result on this hypothesis.

##### 4.1 AVAILABILITY INDEX

To measure availability, we create an availability indicator for each good, which is set equal to one for the market-months when we have at least one price for the good in that market-month, and zero otherwise. We then aggregate these indicators into an availability index using the same weights as for prices. The availability index thus captures the share of the consumption bundle that can be purchased in a given market-month. When we report effects on the availability index by itself, we will use the index as described above.

##### 4.2 NUMBER OF MARKET PARTICIPANTS

As part of the market survey, we collect information on the number of carpenters, furniture vendors, hardware stores, hardware vendors (those selling hardware products but not from a store), and the number of maize vendors. We collect information both on the number typically operating from that

market in that month, as well as the number operating on the day of our visit. We will combine these variables into a mean effects sub-index of market vendors by standardizing each outcome (demeaning and dividing by the standard deviation of pre-treatment rounds).

We then standardize our availability index and combine this with the mean effects sub-index of market vendors by equally weighting each, in order to create a single mean effects index for H2. This is the main outcome that will be reported along with the main outcomes for H1 and H3, and across which our top-level FDR adjustment will be made. We will report outcomes of both sub-indices in a separate table, and adjust p-values with FDR across these two sub-indices. As with prices, we will include results for input into the overall mean effects index (ie each good that makes up the availability index and each number of vendors outcome) with a statistically significant effect in a table, and report FDR-corrected q-values over these outcomes. We will report full results for all outcomes in an appendix.

#### 4.3 ENTERPRISE GOOD AVAILABILITY

In an analogous manner to how we handled enterprise price data, we will conduct an investigation into enterprise product availability, where we construct an indicator equal to 1 if the enterprise reports a price for the product in a month and zero otherwise. We equally weight these values across the different goods potentially available for each type of enterprise, so this measures the share of goods/services we ask about that an enterprise is selling. As above, we use this as an outcome in the enterprise regressions and include the result from the specification with radii as a sub-index in the table presenting sub-indices for Hypothesis 2.

#### 4.4 CENSORED REGRESSIONS FOR PREFERENCE FOR VARIETY

Lastly, in many macro/trade models, an important margin for improving welfare is the preference for variety. Since we collect multiple measures of prices per market, we can look at whether markets near a greater number of treatment households increased the number of vendors selling a particular product (where the options are 0, 1, 2 or 3+). For products that we collect both high and low prices, we can look at the number of prices that were obtained (0-6). We will have one observation per product per market per round. We will run a censored Tobit model with spatial and temporal variables selected based on those selected for the index of market availability, and will report results in an appendix.

### 5 MAIN HYPOTHESIS 3: ENTERPRISE ACTIVITY

Our main outcome for H3 is a mean effects index composed of sub-indices measuring i) enterprise size; ii) enterprise non-closure; and iii) additional enterprise creation. The overall index is designed to capture a general increase in enterprise-related economic activity. We weight each of the sub-indices equally in the creation of the main mean effects outcome. We note that the enterprise phone survey is designed to be a short data collection activity, and we will add additional enterprise outcomes based on endline enterprise surveys. However, these outcomes capture the key data collected as part of the enterprise phone survey. Each of these outcomes will be standardized and combined into an equally-weighted sub-index.

In line with our other hypotheses, the main mean effects index for H3 will be included as an outcome for the top-level FDR correction. We will also report each sub-index, along with FDR-corrected p-values across the 3 sub-indices. We will also report individual outcomes with a significant naïve p-value, and correct across these outcomes within this hypothesis.

We now describe the creation of each of these sub-indices in turn.

#### 5.1 ENTERPRISE SIZE

To examine the effects of cash transfers on the size of existing enterprises that make up our enterprise phone survey sample, we will study the following outcomes:

- i. Profits
- ii. Revenue
- iii. Rent (the only enterprise cost we collect as part of the enterprise phone survey)
- iv. Total number of employees
- v. Total wage bill
- vi. Tax and license payments

For profits, revenues, wage bill, and tax and license payments, our main specification will trim the top and bottom 1 percent of the distribution, but we will also explore results using raw values and an inverse-sine transformation as a robustness check to be reported in the appendix.

#### 5.2 ENTERPRISE NON-CLOSURE

To ensure outcomes are going in the same direction, we recode the following questions to instead measure enterprise non-closure:

- i. Indicator for enterprise not operational, which is recoded to be an indicator for the enterprise being operational in that month.
- ii. Number of months closed, which we recalculate as the share of months open, conditional on being surveyed.

We standardize each of these by demeaning and dividing by the standard deviation of enterprises located in control villages.

### 5.3 ADDITIONAL ENTERPRISE CREATION

As of the fifth round of the enterprise phone survey, we included questions on whether new enterprises of the same type had opened within the village in which the enterprise operates, and if new enterprises of the same type had opened in the nearest weekly market center to the enterprise. We ask about over the last 1 month and last 6 months. We construct measures of the number of new enterprises of the same type by evenly distributing the number of enterprises reported in the first round of the survey that included this question over the last 6 months, and then using new enterprises in the last month in subsequent rounds, in order to have a monthly measure for as many months as possible.

To combine into a mean effects sub-index, we demean and divide by the standard deviation of enterprises located in control villages. When combining this sub-index with our other enterprise sub-indices, we will replace any missing months from the period prior to the start of data collection of these questions with zero values.

### 5.4 MECHANISMS

If we find an increase in the number of employees or wage bill, we will explore the type of employees responsible for an increase and whether this is due to an increase in the number of paid employees and/or number of non-household employees. For instance, if we find an increase in revenues, we will create an indicator of whether enterprises have changed prices from the previous month to help determine whether increases in revenues are due to higher prices or additional sales. This will also shed light into the dynamism of small enterprises in rural Kenya.



## 5.5 ATTRITION

Attrition is a potential concern for the enterprise phone survey. In order to assess whether attrition is a concern, we will take three approaches. First, we will calculate enterprise phone survey tracking rates by round, as well as the number of enterprises that we contacted at least once. Second, we will determine whether attrition differs across enterprises located in treatment versus control villages. Third, we will check if attrition varies based on baseline enterprise characteristics, and whether these vary based on whether enterprises are in treatment or control villages. If we do find that attrition is a concern, we will construct Lee bounds for enterprises that drop out of our sample.

## 6 DISCUSSION OF OTHER MAIN HYPOTHESES

In addition to the outcomes included in this pre-analysis plan and tied to midline data, we include a discussion of the other main hypotheses we are interested in studying that will be pre-specified in future pre-analysis plans. This list is not intended to be exhaustive, and the goal of the list is to outline our current thinking on outcomes we will study as part of a paper on the market-level effects of cash transfers.

At the village and/or market level, we are interested in the following outcomes:

- Wages
- Enterprise creation (as measured by an endline enterprise census)
- Land and housing prices

In terms of household welfare, we are interested in the following:

- Assets
- Consumption/Expenditure
- Food security
- Psychological well-being
- Female empowerment
- Health

- Children's education
- Income and hours worked (agricultural and non-agricultural)
- Transfers/remittances

A separate pre-analysis plan and paper will be written by Walker studying the effects of the cash transfers on local public finance. This incorporates information on local public goods, taxation, disputes/conflict, and preferences for redistribution.

## 7 REFERENCES

Anderson, M.L. (2008). "Multiple Inference and Gender Differences in the Effects of Early Intervention: A Re-evaluation of the Abecedarian, Perry Preschool, and Early Training Projects." *Journal of the American Statistical Association*, 103(484), 1481-1495.

Athey, Susan and Guido Imbens (2015). "Machine-Learning Methods for Estimating Heterogeneous Causal Effects," unpublished paper: <http://arxiv.org/abs/1504.01132v3>. December.

Balzer, Lauren B., Mark J. van der Laan, and Maya L. Petersen (2015): "Adaptive Pre-specification in Randomized Trials with and without Pair-Matching," UC Berkeley Division of Biostatistics Working Paper 336.

Bloniarz, Adam, Hanzhong Lin, Cun-Hui Zhang, Jasjeet Sekhon and Bin Yu (2015): "Lasso adjustments of treatment effects estimates in randomized experiments," <http://arxiv.org/abs/1507.03652v4>

Casey, Katherine, Rachel Glennerster and Edward Miguel (2012). "Reshaping Institutions: Evidence on Aid Impacts Using a Pre-Analysis Plan," *Quarterly Journal of Economics*, 127(4), 1755-1812.

Conley, Tim (1999): "GMM Estimation with Cross-Sectional Dependence," *Journal of Econometrics*, 92(1), 1-45.

Conley, Tim (2008): "Spatial Econometrics," in The New Palgrave Dictionary of Economics. Second Edition. Eds. Steven N. Durlauf and Lawrence E. Blume. Palgrave Macmillan.

Haushofer, J. and J. Shapiro (2016): "The Short-Term Impact of Unconditional Cash Transfers to the Poor: Experimental Evidence from Kenya", forthcoming, *Quarterly Journal of Economics*..

Kleinberg, Jon, Jens Ludwig, Sendhil Mullainathan, and Ziad Obermeyer (2015): “Prediction Policy Problems,” *American Economic Review: Papers & Proceedings*, 105(5), 491-495.

Kremer, Michael, Edward Miguel, and Rebecca Thornton (2009). “Incentives to Learn.” *Review of Economics and Statistics*, 91(3), 457-436.

Miguel, Edward and Michael Kremer (2004). “Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities.” *Econometrica*, 72(1), 159-217.

Shao, Jun, and Randy R. Sitter. 1996. “Bootstrap for Imputed Survey Data”. *Journal of the American Statistical Association* 91 (435): 1278–88. doi:10.2307/2291746.

Van der Laan, Mark J. and Maya L. Petersen (2012): “Targeted Learning,” in Ensemble Machine Learning: Methods and Applications. Eds. Cha Zhang and Yunqian Ma. Springer.

## 8 APPENDIX: OUTCOMES BY CATEGORY

### 8.1 FOOD

This category is comprised of the following products:

- Cassava
- Irish potato
- Maize
- Millet
- Plantains
- Rice
- Sorghum
- Sweet potato
- Beans
- Cabbage

- Cowpea leaves
- Green grams
- Groundnuts
- Kales
- Onions
- Saka (Local Vegetable)
- Tomatoes
- Avocado
- Banana-sweet
- Mango
- Orange
- Papaya
- Pineapple
- Water Melon
- Jackfruit
- Passion
- Beef
- Fish (Tilapia)
- Goat (meat)
- Pork
- Eggs

- Milk (Fresh)
- Biscuits
- Bread
- Cake
- Maize flour
- Wheat flour
- Milk (Fermented)
- Milk powder
- Soda
- Sugar
- Tea

## 8.2 NON-FOOD NON-DURABLES

This category comprises the following products:

- Bar soap
- Toothpaste
- Vaseline/lotion
- Washing powder
- Bleach
- Panadol/aspirin
- Cooking fat
- Batteries (3-volt)
- Firewood

- Kerosene
- Charcoal
- Leso
- Small sufuria
- Slippers
- Fertilizer
- Improved seed (maize)

### 8.3 LIVESTOCK:

This category comprises the following products:

- Bull (local)
- Calf (local)
- Chicken (hen)
- Goat
- Sheep

### 8.4 DURABLES

This category comprises the following products:

- 1 Iron sheet (32 gauge)
- Cement
- Large Padlock
- Nails (3 inch)
- Roofing Nails
- Timber (2x2)

- Water Paint
- 20L Jerry can
- Thermos flask
- 3 1/2 X 6 Mattress
- Bicycle (local)
- Mosquito Net

#### 8.5 TEMPTATION GOODS

- Cigarettes
- Alcohol<sup>14</sup>

#### 8.6 MISSING PRODUCTS

The following goods are included on the price survey, but based on the market data shared with us to date, are not found in our study area. If we find these products are present in at least 5% of observations (a market-month), then we will include them in the category in brackets. Likewise, if we find that any of the products above are not present in at least 5% of observations, then we will drop the product from the analysis.

- Bull (grade) [Livestock]
- Calf (grade) [Livestock]
- Donkey [Livestock]
- Turkey [Livestock]
- Duck [Livestock]

---

<sup>14</sup> We include alcohol prices because they are an important temptation good. However, due to logistical challenges, we are unable to collect these via our market surveys and have instead collected these via phone surveys starting in January 2016. In particular, local brew is typically sold at homesteads rather than in markets, and per Kenyan law, bars are not allowed to open before 5 PM, past the time at which the market surveys occur.

- Lamb (meat) [Food]



## **Appendix**

The appendix includes the major survey instruments used as part of this analysis plan. This includes our midline data, collected via the Market Survey Instrument (Appendix A) and the Enterprise Phone Survey Instrument (Appendix B), as well as the KLPS Round 3 Consumption/Expenditure Instrument (Appendix C), which is used to construct expenditure weights for our price index.

## **Appendix A: Market Survey Instrument**

GE EFFECTS OF CASH TRANSFERS

MARKET SURVEY MODULE (MS)



Initial Information

**Location of Market:**

- 1. Country Write: \_\_\_\_\_
- 2. District Write: \_\_\_\_\_
- 3. Location Write: \_\_\_\_\_
- 4. Sublocation Write: \_\_\_\_\_
- 5. Market villages Write: \_\_\_\_\_
- 4. Name of Market Center:** Write: \_\_\_\_\_
  - 4a. Market ID: \_\_\_\_\_
  - 4b. Please record GPS coordinates at the center of the market here (write every digit down):
  - 4c. Latitude: \_\_\_\_\_
  - 4d. Longitude: \_\_\_\_\_
  - 4e. Elevation: \_\_\_\_\_
  - 4f. Accuracy (m): \_\_\_\_\_

**Survey Information:**

- 5. Date of Survey: (DD/MM/YYYY) |\_|\_|/|\_|\_|/|\_|\_|\_|\_|
- 6. Surveyor ID / name: |\_|\_|\_|\_| / \_\_\_\_\_
- 7. Other IPA officers present: |\_|\_|\_|\_| / |\_|\_|\_|\_| / |\_|\_|\_|\_|

Instructions: For the items below, record the purchase prices for the item for the first three vendors you encounter that are selling the item. Shop as you would if you were buying the item for yourself. If you reach the end of the market point and the item is not available, reverse direction and proceed to the other end of the market point until you have accumulated 3 prices, or confirmed that the item is unavailable.

For goods that come in different brands, please follow the following instructions: (i) If there is only one brand, enter only a high price; (ii) If there are multiple brands and they have the same price, enter the price both as a "high" and a "low" price; (iii) If there are multiple brands at different prices, then enter the "high" and "low" prices.

**Read consent to each seller:**

Hello, I am [name] from IPA, a non-governmental development and research organization in Siaya Town. IPA would like to interview you, to ask some questions about products you sell. If you wish to end the interview at any time, you may do so. If you have any concerns, or problems arising from any of the questions, please contact the IPA Office in Siaya town. May we have your permission to ask you some questions about the goods you sell?

Field Officer: Write IPA ID to indicate respondent's acceptance: \_\_\_\_\_

1. **Market Food**

**FO: Item not available = 888, Refused to answer = 999, Out of stock =666, Closed for the day= 777, Closed indefinitely= 555 . Fruit, vegetables, livestock, etc. should be of average size and quality.**

Item	Unit	Seller #1		Seller #2		Seller #3	
Grains		A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]
Maize	2kg						
Millet	2kg						
Sorghum	2kg						
Rice	1 kg						
Sweet potato	Six						
Cassava	2 kg						
Irish potato	Five						
Plantains	Four						
Vegetables		A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]
Groundnuts	2 kg						
Beans	2 kg						
Cowpea leaves	small bunch						
Green grams	2 kg						
Tomatoes	Four						
Onions	Four						
Kales	Bag						
Cabbage	Head						
Saka (Local Vegetable)	small bunch						

1. b. **Market Food continued**

FO: Item not available = 888, Refused to answer = 999, Out of stock =666, Closed for the day= 777, Closed indefinitely= 555 . Fruit, vegetables, livestock, etc. should be of average size and quality.

Item	Unit	Seller #1		Seller #2		Seller #3		
		A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]	
<b>Meats</b>								
Beef	1 kg							
Goat	1 kg							
Fish (Tilapia)	whole							
Pork	1 kg							
Lamb	1 kg							
<b>Fruits</b>								
Papaya (pawpaw)	One							
Water Melon	One							
Banana-sweet	bunch							
Orange	Six							
Pineapple	One							
Avocado	One							
Mango	Ten							
Passion	Four							
Jackfruit	One							

**STOP and take a look around the market. Please count the number of vendors at the market point who are selling DRY MAIZE in this market.**

NOTE: Observe the number of different actors/ entities in the market that are selling maize. Count each instance of the different actors once. If there is a trader with a lorry and she/he is accompanied by workers, this count as one instance of a trader and will be counted as one actor. If there is a vendor selling maize and he/she is accompanied by workers, this counts as one instance of a vendor and will be counted as one actor.

- 1.c. What is the total number of vendors selling dry maize at the market point? [\_\_\_\_\_]
- 1.d. What is the total number of vendors selling dry maize operating at the market point on the visit day? [\_\_\_\_\_]
- 1.e. How many of these vendors have lorries? [\_\_\_\_\_]
- 1.f. How many of these vendors have stores? [\_\_\_\_\_]
- 1.g. How many of these vendors with small stalls/mamas selling from sacks? [\_\_\_\_\_]



3. **Hardware**

**FO: Item not available = 888, Refused to answer = 999, Out of stock =666, Closed for the day= 777, Closed indefinitely= 555 . Fruit, vegetables, livestock, etc. should be of average size and quality.**

Item	Unit	Seller #1		Seller #2		Seller #3	
		A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]
1 Iron sheet (32 gauge)	high / low	10 FT					
Roofing nails		1/2 Kg					
Timber (2x2)		1 FT					
Nails (3 inch)		1/2 Kg					
Water Paint	high / low	4 liters					
Large Padlock	high / low	1					
Cement	high / low	50 kg					

**STOP and take a look around the market. Please count the number of vendors at the market point who are selling CONSTRUCTION GOODS in this market.**

NOTE: Observe the number of different actors/ entities in the market that are selling carpentry and hardware/ construction goods. Count each instance of the different actors once. If there is a trader with a lorry and she/he is accompanied by workers, this count as one instance of a trader and will be counted as one actor. If there is a vendor selling carpentry and hardware/ construction goods and he/she is accompanied by workers, this counts as one instance of a vendor and will be counted as one actor.

- 3.a. What is the total number of carpenters at the market point? |\_\_\_\_\_|
- 3.b. What is the total number of carpenters operating at the market point on the visit day? |\_\_\_\_\_|
- 3.c. What is the total number of furniture vendors at the market point? (NOTE: Exclude carpenters) |\_\_\_\_\_|
- 3.d. What is the total number of furniture vendors operating at the market point on the visit day? (NOTE: Exclude carpenters) |\_\_\_\_\_|
- 3.e. What is the total number of hardware shops at the market point? |\_\_\_\_\_|
- 3.f. What is the total number of hardware shops operating at the market point on the visit day? |\_\_\_\_\_|
- 3.g. What is the total number of hardware/construction material vendors at the market point? (NOTE: Exclude hardware shops) |\_\_\_\_\_|
- 3.h. What is the total number of hardware/construction material vendors operating at the market point on the visit day? (NOTE: Exclude hardware shops) |\_\_\_\_\_|

4.a Duka Products

FO: Item not available = 888, Refused to answer = 999, Out of stock =666, Closed for the day= 777, Closed indefinitely= 555 . Fruit, vegetables, livestock, etc. should be of average size and quality.

			Seller #1		Seller #2		Seller #3	
Non-Food Items			A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]
Bar Soap	high / low	whole						
Washing Powder	high / low	500g						
Bleach	high / low	200ml						
Cigarettes	high / low	one stick						
Toothpaste	high / low	25g						
Vaseline	high / low	100g						
Batteries (3 volt)	high / low	Pair						
Waterguard		150ml						
<b>Food</b>								
Maize Flour	high / low	2 kg						
Wheat Flour	high / low	2 kg						
Egg		whole						
Milk (Fresh)	high / low	500ml						
Milk (fermented)	high / low	500ml						
Milk Powder	high / low	500g						
Cooking Fat	high / low	500g						
Sugar	high / low	1 kg						



4.b Duka Products continued

FO: Item not available = 888, Refused to answer = 999, Out of stock =666, Closed for the day= 777, Closed indefinitely= 555 . Fruit, vegetables, livestock, etc. should be of average size and quality.

Item	Unit	Seller #1		Seller #2		Seller #3	
		A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]	A. Alt Unit [Current Month]	D. Price [Current Month]
Tea Leaves	high / low	50g					
Bread	high / low	Loaf					
Biscuits	high / low	Pack					
Cake	high / low	One					
Soda		300ml					

5. Other Products

FO: Item not available = 888, Refused to answer = 999, Out of stock =666, Closed for the day= 777, Closed indefinitely= 555 . Fruit, vegetables, livestock, etc. should be of average size and quality.

Item	Unit	Seller #1		Seller #2		Seller #3		
		A. Alt Unit [Current	D. Price [Current	A. Alt Unit Unit	D. Price [Current	A. Alt Unit Unit	D. Price [Current	
<b>Fuel</b>								
Firewood	bunch							
Charcoal	2kg							
Kerosene	1 litre							
<b>Health</b>								
Panadol	high low	Pair						
Mosquito Net	high low	One						
<b>Household Items</b>								
20L Jerry Can		One						
Small Sufuria	high low	One						
Thermos Flask		Small						
3 1/2 X 6 Mattress	high low	One						
<b>Farming Items</b>								
Improved Seeds (maize)	high low	2kg						
Fertilizer	high low	2 kg						
<b>Other</b>								
Leso	high low	One						
Slippers(Umoja)		Pair						
Bicycle (Local)		One						

## **Appendix B: Enterprise Phone Survey Instrument**



**SECTION 1. Pre-Information and Consent**

Greetings! You are about to begin the GE Effects Enterprises Phone Survey. From the calling list, please fill in the following questions before engaging the respondent.

1a. Interviewer name: (first) \_\_\_\_\_ / (surname) \_\_\_\_\_

1b. Interviewer ID: \_\_\_\_\_

1c. Please enter the call rank from the tracking sheet: \_\_\_\_\_

1d. Please enter the survey\_round: \_\_\_\_\_

2. Subcounty name \_\_\_\_\_

2a. Location \_\_\_\_\_

2b. Sub location \_\_\_\_\_

2c. Village \_\_\_\_\_

3. Please enter the data source from the tracking sheet: \_\_\_\_\_

3a. Please enter the enterprise ID from the tracking sheet: \_\_\_\_\_

3b. Please enter the FR ID from the tracking sheet: \_\_\_\_\_

4. Please enter the FRs name from the tracking sheet:

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
(First name) (Middle/Second Name) (Last Name)

5. When was the last time we surveyed this enterprise? (FO: Enter as it appears on the tracking sheet) (DD/MM/YYYY) \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

6. Did the FR report to have knowledge about the enterprise in the last survey round? (1=Yes, 2=No) \_\_\_\_\_

7. Did this FR consent in the last survey round? (1= Yes, 2= No) \_\_\_\_\_

***Please confirm this information matches what is on the tracking sheet before continuing with the interview***

8a. Date of interview: (DD/MM/YYYY) \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

8b. Time start interview: (24 hr clock) \_\_\_\_\_ : \_\_\_\_\_

**Great! You are now ready to call the respondent.**

9. Did anyone pick the phone call? (1= Yes, 2= No) \_\_\_\_\_

9a. (FO: Don't read): How many times have you attempted to call this enterprise? (FO: Mark the number of attempts on the calling list) \_\_\_\_\_

9b. FO: (Do not read) Are you talking to the person on the calling list who was originally interviewed? (1= Yes, 2= No) |\_\_\_\_|

9c. Does the name reported previously in the calling list match the name reported by the FR? (1= Yes, 2= No) |\_\_\_\_|

**If NO, continue. If YES, skip to question 10.**

9d. We recently conducted a census in this village. Why is your name different than the one in our records from this census? (Please choose up to two answers. Probe if name is different but FR insists no change)

- Got married and took spouse's name
- Took the name of another family member (not spouse)
- Took baptismal name
- Took a different / additional name (not family or baptismal name)
- Dropped family name
- Name previously misspelled

9e. What is the correct name that you use?

|\_\_\_\_\_| / |\_\_\_\_\_| / |\_\_\_\_\_|  
(First name) (Middle/Second Name) (Last Name)

9f. What is the relationship of this person to the person on the tracking list that was originally interviewed? (Use G4 codes) |\_\_\_\_|

10. Are you the owner of the enterprise? (1= Yes, 2= No) |\_\_\_\_|

**If NO, continue. If YES, skip to question 11**

10a. What is the name of the enterprise owner?

|\_\_\_\_\_| / |\_\_\_\_\_| / |\_\_\_\_\_|  
(First name) (Middle/Second Name) (Last Name)

11. Is there a phone number that we can use to contact the enterprise owner? (1= Yes, 2= No) |\_\_\_\_|

**If YES, continue. If NO, skip to question 11c.**

11a. Please give me that phone number: (Assume Kenyan number. Exclude leading 0. 77 if Non-Kenyan number. 88 if refuses. 98 if no phone. 99 if DK) |\_\_\_\_|

11b. Who is the owner of this phone? \_\_\_\_\_

11c.(FO: Do not ask directly, try to determine.) Does this person have knowledge about the enterprise and able to answer the survey questions? (1= Yes, 2= No) |\_\_\_\_|

**If NO, confirm enterprise owner contact information and skip to closing interview statement.**

12. What is the enterprise category picked during census from the the calling checklist? (Use Business category codes) |\_\_\_\_|

**Informed Consent:**

**Read to the respondent the consent script.**

13. Do you consent to take part in this research? (1= Yes, 2= No)

14. **Do not ask the following question. Simply record your impressions.** Is the respondent able to proceed with the survey? (1=Yes-FR agrees to participate; 2=No-FR refuses to participate; 3=No-FR does not refuse but is unable to participate)

**If YES, skip to Section 2. If NO, continue.**

14a. **Describe your impressions of the refusal / inability to participate. Do not ask.**

- 1 = Wants to reschedule (**skip to “Rescheduling instructions” below**)
- 2 = Refusal for this round only (**skip to question 11b**)
- 3 = Refusal for this round and any future rounds (**skip to question 11c**)
- 4 = Unable to survey – parent or contact refusal (**skip to “Closing Interview Statement”**)
- 5 = Unable to survey – spouse refusal (**skip to “Closing Interview Statement”**)
- 6 = Unable to survey – in prison (**end interview**)
- 7 = Unable to survey – mental illness / disability (**skip to question 12**)
- 10 = Unable to survey – other (**skip to question 11d**)

14b. **Record your impressions of why the FR refuses to participate during this survey round.**

**If you feel comfortable doing so, you may ask the FR why:** Why don't you want to participate in this survey round? **Choose up to 3 reasons.**

- // Other: \_\_\_\_\_
- |   |  |
|---|--|
| 1 = Survey is too long                                | 6 = FR hasn't received (further) assistance from IPA and doesn't want to participate because of that |
| 2 = FR has caregiving duties                          | 7 = FR just doesn't want to / no reason given  |
| 3 = FR has to work                                    | 10 = Other (specify)   |
| 4 = FR does not want to disclose personal information |  |
| 5 = FR is suspicious of IPA                           |  |

**Skip to “Closing Interview Statement”.**

**Closing Interview Statement. Read:** Thank you very much for your time. If you change your mind and would like to participate in the interview, please contact us at the IPA office. **End interview here.**

**SECTION 2: Confirming Identity of Enterprise**

1. (Do not read): What is the enterprise category reported by the FR from the calling list in the last survey round? (This is the enterprise category from the last survey round) (*Use business category codes*)

***If not operational at time of last survey round, continue. Else, skip to question 3.***

2. The last time we talked to you back in (date\_last\_surveyed) you mentioned that you had gone out of business and you were no longer running the business of (bizcat) are you back to business again? (1= Yes, 2= No)

2a. When did you resume operating? (DD/MM/YYYY)  /  /

***If switched enterprise categories at time of last survey round, continue. Else skip to question 4.***

3. The last time we talked to you back in {date\_last\_surveyed} you mentioned that you had switched from operating the business of (bizcat) and you are now operating the business of (biz\_cat\_last) are you still operating this business of (biz\_cat\_last)? (1= Yes, 2= No)

3a. What are some of the reasons that made you switch from the business of (bizcat) that we found you operating the first time we visited you to the current business of (bizcat\_last) that you are now operating?

3b. Do you think you will be going back to operate the original business of (bizcat) at some point? (1= Yes, 2= No)

***If YES, continue. If NO, skip to question 4***

3c. When do you think you will resume to this business of (bizcat) again? (DD/MM/YYYY)  /  /

4. What is the enterprise category reported by the FR? (*Use Business category codes*)

***If enterprise has switched categories or closed, continue. Else skip to question 4c.***

4a. What are the reasons for the switch/ closure of business?

4b. When did you switch/ close down the business? (DD/MM/YYYY)  /  /

4c. What is the name of this enterprise? (Probe FR for a name that villagers would commonly recognize) \_\_\_\_\_

**FO: (Do not read) In the following questions, we would like information about the owner or employee of the enterprise - this will be considered the respondent in the following questions.**

5. What is your current full name?

/  /   
(First name) (Middle/Second Name) (Last Name)

5b. Common name of the respondent \_\_\_\_\_





**HARDWARE**

1a. What is the price of 1 sheet 32 gauge roofing mabati today? (998=Not in operation) |\_\_\_\_\_|

1aa. What brand? (Try to get information for the first brand listed. 99=DK) |\_\_\_\_|

- 1 = Dumu zas
- 2 = Nyumba
- 3 = Tembo
- 4 = Maisha
- 5 = Gal sheet

1b. How many sheets of 32 gauge roofing mabati did you sell in the last 7 days? (998=Not in operation) |\_\_\_\_\_|

2a. What is the price of 50kg bag of cement today? (998= Not offered, 999=DK) |\_\_\_\_\_|

2aa. What brand? (Try to get information for the first brand listed. 99=DK) |\_\_\_\_\_|

- 1= Bamburi
- 2= Simba
- 3= Blue triangle

2b. How many 50kg bags of cement did you sell in the last 7 days? (998= Not offered, 999=DK) |\_\_\_\_\_|

3a. What is the price of 1/4 kg of roofing nails today? (998= Not offered, 999=DK) |\_\_\_\_\_|

3b. How many 1/4 kgs of roofing nails did you sell in the last 7 days? (998= Not offered, 999=DK) |\_\_\_\_\_|

**DUKA/SMALL RETAIL PRICES**

What type of products does this enterprise typically sell? (Use product codes) |\_\_\_\_|\_\_\_\_|\_\_\_\_|

1. Do you currently have loafs of bread for sale? (1= Yes, 2= No) |\_\_\_\_|

**If YES, continue. If NO, skip to question 2**

1a. What is the price of a loaf of bread (400g) today? (998= Not offered, 999=DK) |\_\_\_\_\_|

1aa. What brand? (Try to get information for the first brand listed. 99=DK) |\_\_\_\_\_|

- 1= Supa loaf
- 2= Sunblest
- 3= Elliots
- 4= United

1b. How many 400g loafs of bread did you sell in the last 7 days? (998= Not offered, 999=DK) |\_\_\_\_\_|

1ba. What is the unit of quantity sold? Note: 1 crate of bread= 24 loafs of bread (1=Crate, 2=Pieces) |\_\_\_\_\_|

2. Do you currently have sugar for sale? (1= Yes, 2= No) |\_\_\_\_\_|

**If YES, continue. If NO, skip to question 3**

2a. What is the price of 1/2 kg of sugar today? (998= Not offered, 999=DK) |\_\_\_\_\_|

2aa.What brand? (Try to get information for the first brand listed. 99=DK) |\_\_\_\_|

- 1= Mumias
- 2= Nzoia
- 3= Sony
- 4= Chemelil
- 5= Muhoroni
- 6= Local sugar
- 7= Kabras

2b. How many packages of 1/2 kgs of sugar did you sell in the last 7 days? (998= Not offered, 999=DK) |\_\_\_\_|

3. Do you currently have soda for sale? (1= Yes, 2= No) |\_\_\_\_|

**If YES, continue. If NO, skip to question 4**

3a.What is the price of 300ml of soda today? (998= Not offered, 999=DK) |\_\_\_\_|

3b. How many 300ml sodas did you sell in the last 7 days? (998= Not offered, 999=DK) |\_\_\_\_|

3ba.What is the unit of quantity sold? *Note: 1 crate of soda= 24 bottles of soda (1=Crate, 2=Bottles)*  
|\_\_\_\_|

4. Do you currently have baking flour for sale? (1= Yes, 2= No) |\_\_\_\_|

**If YES, continue. If NO, skip to section 4**

4a.What is the price of 1 kg of baking flour today? (998= Not offered, 999=DK) |\_\_\_\_|

4aa.What brand? (Try to get information for the first brand listed. 99=DK) |\_\_\_\_|

- 1= Exe
- 2= Tropicana
- 3= Swan
- 4= Farina
- 5= Chef
- 6= Ndovu
- 7= Lotus

4b. How many 1 kg packages of baking flour did you sell in the last 7 days? (998= Not offered, 999=DK) |\_\_\_\_|

4ba.What is the unit of quantity sold? *Note: 1 bale of baking flour= 24 pieces of 1 kg baking flour.*  
(1=Bale, 2=Packets) |\_\_\_\_|

## **Section 4: Revenue, Profit and Expenditures**

***Read: Now I would like to learn about this business***

1. How many HOURS did you work in total in this enterprise yesterday? |\_\_\_\_\_|

2. How many people currently work at this enterprise in total? (Note: Count ALL the employees/workers, including full-time and part-time workers; If FR is the enterprise owner and works in this enterprise, then the FR should be included in the count.) |\_\_\_\_\_|

2a. Of your total workers, how many of these workers live in your household? (-99=DK, -98=Refuse) |\_\_\_\_|

2b. Of your total workers, how many of these workers are full-time employees at your enterprise? (By full-time, we mean someone that works at the enterprise at least 5 days a week for most of the day. Include in this number all household workers who work at this business whether or not they are paid). (-99=DK, -98=Refuse) |\_\_\_\_|

2c. Of your total workers, how many of these people are currently working for pay at your enterprise? (-99=DK, -98=Refuse) |\_\_\_\_|

3. In the month [last month], what was the total amount of salary or wages paid to all workers? (This should include temporary workers. Note: In KSh. -99=DK, -98=Refuse) |\_\_\_\_\_|

### **Revenue**

4. What were your total earnings (money in only - do not subtract any expenses) in [last month]? (Note: In Ksh. 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.

If unsure, FR can estimate. -99=DK, -98=Refuse) |\_\_\_\_\_|

5. What was your total profit in [last month]? (Note: In Ksh. 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.

If unsure, FR can estimate. Ask in terms of "commission" if the FR runs an M-Pesa shop. -99=DK, -98=Refuse) |\_\_\_\_\_|

6. How much did you pay for rent in [last month]? (Note: In KSh. 777=Owns premises, does not rent and -99=DK, -98=Refuse) |\_\_\_\_\_|

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

7a. In the month of [last month], how much did you spend on taxes or licenses to the national government? (-99=DK, -98=Refuse) |\_\_\_\_\_|

7b. In the month of [last month], how much did you spend on taxes or licenses to the county government? (-99=DK, -98=Refuse) |\_\_\_\_\_|

8. Has the location of your enterprise moved since we last surveyed you, in {date\_last\_surveyed}? (1= Yes, 2= No) |\_\_\_\_|

**If YES, continue. If NO, skip to section 5.**

8a. What is the current enterprise location?

Country? \_\_\_\_\_

County? \_\_\_\_\_

Subcounty? \_\_\_\_\_

Location: \_\_\_\_\_

Sub-location: \_\_\_\_\_

Village / Neighborhood? (Note: Neighborhood refers to estates)

\_\_\_\_\_

9a. What are the roofing materials for this enterprise? (Use material codes) |\_\_\_\_|

9b. What are the walls materials for this enterprise? (Use material codes) |\_\_\_\_|

9c. What are the floor materials for this enterprise? (Use material codes) |\_\_\_\_|

10. (FO: Do not ask) Is the new location of the enterprise within our study area? (1= Yes, 2= No) |\_\_\_\_|

**If YES, continue. If NO, skip to section 6.**

### **Section 5: Knowledge on other similar enterprise type**

#### Section 5.1 New enterprises within the village

Read: Now I'm going to ask you about any other enterprises similar to the one of your own that might have come up within your village/ within your nearest shopping center.

0. In your village, are there any new enterprises of the same type as your own that have opened up in the last 6 months? (1= Yes, 2= No, 3= No, I don't have knowledge) |\_\_\_\_|

**If YES, continue. If NO or No, I don't have knowledge, skip to question 3.**

1. In your village, how many of these new enterprises same as your own opened up in the last 6 months? |\_\_\_\_|

1a. How many of these new enterprises within your village and of the same type as your own that opened up in the last 6 months operate from within the owner's home? |\_\_\_\_|

1b. How many of these new enterprises within your village and of the same as your own that opened up in the last 6 months operate within village (but not in home)? |\_\_\_\_|

2. In your village, are there any new enterprises of the same type as your own that have opened up in the last 1 month? (1= Yes, 2= No, 3= No, I don't have knowledge) |\_\_\_\_|

**If YES, continue. If NO, or No, I don't have knowledge skip to section 5.2**

2a. In your village, how many of these new enterprises same as your own opened up in the last 1 months? |\_\_\_\_|

2b. How many of these new enterprises within your village, same as your own that opened up in the last 1 months operate in\_home? |\_\_\_\_|

2c. How many of these new enterprises within your village, same as your own that opened up in the last 1 months operate within village (but not in home)? |\_\_\_\_|

Section 5.2 New enterprises in the market center close to you

**Read: Now I'd like to ask you some questions about the new enterprises of the same type as your own that might have opened up in the places around you.**

1. What is your nearest major weekly market? (Use Market Codes) |\_\_\_\_|\_\_\_\_|\_\_\_\_|

2. In market (market name) that is closest to you, are there any new enterprises of the same type as your own that have opened up in the last 6 months? (1= Yes, 2= No) |\_\_\_\_|

**If YES, continue. If NO, skip to question 3**

2a. How many are these new enterprises of the same type as your own that have opened up in the market in the last 6 months? |\_\_\_\_|

3. In market, {market name} that is closest to you, are there any new enterprises of the same type as your own that have opened up in the last 1 month? (1= Yes, 2= No) |\_\_\_\_|

**If YES, continue. If NO, skip to section 6**

3a. How many are these new enterprises of the same type as your own that have opened up in the market in the last 1 month? |\_\_\_\_|

Section 6: Conclusion and FR contact information

**Read: Now I'm going to ask you about the best contacts to reach you in future.**

1. Which is the best phone number we can reach you in future even if you don't have your own? (Assume Kenyan number. Exclude leading 0. 77 if Non-Kenyan number. 88 if refuses. 98 if no phone. 99 if DK) |\_\_|\_\_|\_\_|\_\_|\_\_|\_\_|\_\_|\_\_|

1a. Who is the owner of this phone? (Use G4 codes) |\_\_\_\_|

2. If I can't reach you on this number, is there another phone number on which I could reach you? (1= Yes, 2= No) |\_\_\_\_|

**If YES, continue if NO, skip to conclusion**

Phone Number 2: (Assume Kenyan number. Exclude leading 0. 77 if Non-Kenyan number. 88 if refuses. 98 if no phone. 99 if DK) |\_\_|\_\_|\_\_|\_\_|\_\_|\_\_|\_\_|\_\_|

2a. Who is the owner of this phone? (Use G4 codes) |\_\_\_\_|

Conclusion

Do not read the following questions aloud. Simply record your own impressions.

A. Did the respondent refuse or terminate the survey early? (1= Yes, 2= No) |\_\_\_\_|

**If YES, continue. If NO, skip to question 1.**

B. Why did the respondent terminate the survey early? |\_\_\_\_|

- 1= Tired
- 2= Too busy, does not have time
- 3= Offended at question
- 4= Suspicious of FO / survey intent / IPA
- 5= Does not feel like continuing survey
- 6= Other (specify in end of interview comments)

1. Time end interview (24 hr clock) |\_\_|\_\_| : |\_\_|\_\_|

READ: Thank you for your time.

READ: Thank you for your time, all of this information will be kept strictly confidential. We would like to survey you again next month, and will call you then.

2. In what language was the survey conducted? |\_\_\_\_|

- 1= English
- 2= Kiswahili
- 3= Luo

2a. How was the respondent's skill in speaking and understanding the survey language? |\_\_\_\_|

- 1= Displayed no problems speaking or understanding survey language
- 2= Displayed a little difficulty speaking or understanding survey language
- 3= Displayed moderate difficulty speaking or understanding survey language
- 4= Displayed serious problems speaking or understanding survey language

3. Were any people present during all or part of this interview (other than the respondent and IPA staff) (1= Yes, 2= No) |\_\_\_\_|

**If YES, continue. If NO, skip to question 4.**

3a. What is their relationship to the respondent? List up to four others present (Use G4 codes)

|\_\_|\_\_|\_\_|\_\_|

4. Are you very confident, somewhat confident or not very confident in the overall quality and truthfulness of this respondent's responses? |\_\_\_\_|

- 1= Very confident
- 2= Somewhat confident
- 3= Not confident

4a. If SOMEWHAT or NOT CONFIDENT: Why?

---

Please enter any additional comments about the survey.

---

---

---

## CODE SHEET

<p><b>Business Category Codes</b></p> <p>1= Tea buying centre            2= Small retail / M-PESA / mobile charging            3= Large retail            4= Restaurant            5= Bar            6= Hardware store            7= Barber shop            8= Beauty shop / Salon            9= Butcher            10= Video Room/Football watching hall            11= Cyber café            12= Tailor            13= Bookshop            14= Posho mill            15= Welding / metalwork            16= Carpenter            17= Guest house/ Hotel (lodging)            18= Food stand / Prepared food vendor            19= Food stall / Raw food vendor            20= Chemist            21= Mechanic shop            22= Petrol station            23= Piki driver            24= Boda driver            25= Sale or brewing of homemade alcohol / liquor            26= Livestock / Animal Sale            27= Fishing            28= Fish Sale / Mongering            29= Cereals            30= Agrovot            31= Non-Food Vendor / Producer            32= None</p>	<p><b>Material Codes</b></p> <p><b>Roof</b></p> <p>1= Iron/ Metal/ Steel            2= Grass thatch (no reeds)            3= Grass thatch (with reeds)            4= Mud, branches            5= Tiles            6= Palm leaves/ reeds            7= Cement            8= Unfinished/incomplete            9= Canvas/ polythene            10= None</p> <p><b>Wall</b></p> <p>1= Iron sheets/ Metal/ Steel            2= Mud            3= Cement            4= Brick            5= Cement/mud mixed            6= Stone            7= Reed            8= Canvas/ polythene/Other materials            9= Wood            10= Unfinished/incomplete            11= None</p> <p><b>Floor</b></p> <p>1= Cement            2= Mud            3= Half mud, half cement            4= Tiles            5= Earth            6= Wood            7= None</p>
<p><b>Product Codes</b></p> <p>1= Charcoal sale / burning            2= Clothes / Mtumba / Boutique            3= Electric accesory/repair            4= Paraffin            5= Timber / Firewood            6= Shoes / Cobbler            7= Craftwork (mats, basket weaving, ropes, moulding pots, walkig sticks)            8= Sand Sale / Harvesting            9= Bakery            10= Brick Sale / Production            11= Other            12= Groceries            13= Household goods            14= Charging mobile phones            15= Mpesa            16= All other retail</p>	<p><b>G4 Codes</b></p> <p>1 Self            2 Current spouse/ partner            3 Mother            4 Father            5 Daughter            6 Son            7 Sister            8 Brother            9 Co-wife            10 Mother-in-law            11 Father-in-law            12 Brother/ sister-in-law            13 Cousin            14 Grandchild            15 Nephew/ niece            16 Step dad            17 Step mother            18 Step brother/ sister            19 Half-brother/ sister            20 Maternal aunt/ uncle</p> <p><i>(continued on next page)</i></p>



	<b>G4 codes (continued)</b>
	21 Maternal grandparent
	22 Paternal aunt/ uncle
	23 Paternal grandparent
	24 Current neighbor
	25 Former neighbor
	26 Former spouse/ partner
	27 Friend from church
	28 Friends from school
	29 Teacher/ school official
	30 Village elder/ guide
	31 Work friend colleague
	32 Employee
	33 Employer
	34 Orphan
	35 Other friends
	36 Other relative
	37 Daughter/son-in-law

**Appendix C: KLPS Round 3 Consumption and Expenditure Questionnaire**

## SECTION 8. Economic Activities

**Note: We are interested in livestock this household owns, plus any livestock the respondent owns that is at another location**

**Read:** For the following questions on expenditures, I would like you to consider expenditures for your household as a whole. Recall that, by your household, I mean the place where you usually sleep, not necessarily your ancestral lands or family home. By the individuals in your household, I mean those who “eat from the same pot” and spend 4 nights or days (or more) in an average week sleeping in your home. Boarding school students are a 1-person household, therefore their class-mates are not part of their household. **Note that we will use this household definition for all of the questions in sections 8 through 13.**

1. How many of the following livestock did you purchase in the past **12 months**? How much money **IN TOTAL** did you pay for it? Ask each individually.

	No of animals	KSh
A) Cattle	_____	_____  /=
B) Goat	_____	_____  /=
C) Sheep	_____	_____  /=
D) Chicken	_____	_____  /=
E) Ducks	_____	_____  /=
F) Donkey	_____	_____  /=
G) Pigs	_____	_____  /=
H) Turkey	_____	_____  /=
I) Other 1 (specify): _____	_____	_____  /=
J) Other 2 (specify): _____	_____	_____  /=

1a. List currency of above responses if not Ksh. Use G12 codes. |\_\_| Other: \_\_\_\_\_

2. Did you sell any livestock in the past **12 months**? (1=Yes, 2=No) |\_\_|

3. If Yes: how much did you earn? |\_\_\_\_\_| /=

3a. List currency if not Ksh. Use G12 codes. |\_\_| Other: \_\_\_\_\_

4. In the past **12 months** how much did your household spend in total on veterinary expenses?

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

4a. **List currency if not Ksh. Use G12 codes.** |\_\_\_| Other: \_\_\_\_\_

## SECTION 9. Durables

**NOTE: For the following sections 9 – 13: If the FR is a boarding school student and the ITEM (e.g. food, medicine, lamps) is already included in the tuition paid, DO NOT record it. However, if the ITEM is an additional out-of-pocket payment the FR made, record the ITEM. Purchases that are made by the boarding school (e.g. a TV) SHOULD NOT be listed.**

1. Has your household bought or spent money on any [ITEM] during the past 12 months? Has your household received gifts of any [ITEM] during the past 12 months?  <b>If YES to either, mark “1”. If NO to both, mark “2”.</b>			2. How many [ITEMS] did you acquire in the past twelve months, through gift AND purchase?	3. When was the last time you acquired this [ITEM]?	4. Did you purchase it, or receive it as a gift or by barter? 1=PURCHASE 2=GIFT / BARTER 3=BOTH	5. How much did you pay for it?	6. If gift /barter what was the <b>value</b> of the item?
THEN ASK Q.2-6 FOR EACH ITEM. IF Q1 = “2” SKIP TO THE NEXT ITEM	1=YES 2=NO	CODE	QTY ACQUIRED IN PAST 12 MONTHS (ALWAYS FILL NONE=0)	MM/YY	IF “1” → Q5 IF “2” → Q6 IF “3” → Q5 THEN 6	AMOUNT(/=)	AMOUNT(/=)
Bicycle		201					
Motorcycle / scooter		202					
Car / truck		203					
Jiko Stove		204					
Kerosene Stove		205					
Torch		206					
Radio/cassette		207					
Thermos flask		208					
Sewing machine		209					
Lamps		210					
Hand cart		211					
Ox cart		212					
Ox plough		213					

1. Has your household bought or spent money on any [ITEM] during the past 12 <i>months</i> ? Has your household received gifts of any [ITEM] during the past 12 months? <b>If YES to either, mark "1". If NO to both, mark "2".</b>		2. How many [ITEMS] did you acquire in the past twelve months, through gift AND purchase?	3. When was the last time you acquired this [ITEM]?	4. Did you purchase it, or receive it as a gift or by barter? 1=PURCHASE 2=GIFT / BARTER 3=BOTH	5. How much did you pay for it?	6. If gift /barter what was the <b>value</b> of the item?	
THEN ASK Q.2-6 FOR EACH ITEM. IF Q1 = "2" SKIP TO THE NEXT ITEM	1=YES 2=NO	CODE	QTY ACQUIRED IN PAST 12 MONTHS (ALWAYS FILL NONE=0)	MM/YY	IF "1" → Q5 IF "2" → Q6 IF "3" → Q5 THEN 6	AMOUNT(/=)	AMOUNT(/=)
Hoe		214					
Machete		215					
Chairs		216					
Tables		217					
Beds		218					
Mosquito nets		219					
Mattress		220					
Sofa set		221					
Sifuria		222					
Pots		223					
Buckets, basins		224					
Hammers		225					
Clocks, watches		226					
Suitcases/ <i>mkoba</i>		227					
Jerry cans, Water Drums		228					
Charcoal Iron		229					
Electric Iron		230					

1. Has your household bought or spent money on any [ITEM] during the past 12 months? Has your household received gifts of any [ITEM] during the past 12 months? <b>If YES to either, mark "1". If NO to both, mark "2".</b>		2. How many [ITEMS] did you acquire in the past twelve months, through gift AND purchase?	3. When was the last time you acquired this [ITEM]?	4. Did you purchase it, or receive it as a gift or by barter? 1=PURCHASE 2=GIFT / BARTER 3=BOTH	5. How much did you pay for it?	6. If gift /barter what was the <b>value</b> of the item?	
THEN ASK Q.2-6 FOR EACH ITEM. IF Q1 = "2" SKIP TO THE NEXT ITEM	1=YES 2=NO	CODE	QTY ACQUIRED IN PAST 12 MONTHS (ALWAYS FILL NONE=0)	MM/YY	IF "1" → Q5 IF "2" → Q6 IF "3" → Q5 THEN 6	AMOUNT(/=)	AMOUNT(/=)
Telephone (Landline phone)		231					
Television		232					
Car Battery		233					
Motor boat		234					
Other boat		235					
Computer		236					
Generator		237					
Solar panel		238					
Fishing rods		239					
Mobile Phones and SIM cards		240					
Other durables 1 (specify): _____		241					
Other durables 2 (specify): _____		242					
Other durables 3 (specify): _____		243					

6a. List currency for purchases / gifts / barter of all durables if NOT Ksh. Use G12 code. |\_\_\_| Other: \_\_\_\_\_

## **SECTION 10. Frequent Non-Food Purchases**

**Read:** In the following questions, I want to ask about all purchases made for your household, regardless of which person made them. Please exclude from your answer anything purchased for processing or resale in a household enterprise. Now I am going to ask you about personal care items that you use in your home.

			<b>PURCHASES PAST 7 DAYS</b>	<b>PURCHASES AVERAGE MONTH IN THE PAST 12 MONTHS</b>	<b>GIFTS PAST 12 MONTHS</b>
1. Has your household bought or spent money on or any [ITEM] during the past 12 months? Has your household received gifts of [ITEM] during the past 12 months? <b>If YES to either, mark "1". If NO to both, mark "2". If NO, skip to next row.</b>			2. How much did your household spend on [ITEM] in the past 7 days?	3. How much did your household spend for [ITEM] in a typical month in the past 12 months?	4. What is the value of all the [ITEM] that you received as a gift during the past 12 months? <b>ASK QUESTION ALOUD. DO NOT CALCULATE BASED ON PREVIOUS QUESTION.</b>
	<b>1=YES 2=NO</b>	<b>CODE</b>	<b>AMOUNT (/=)</b>	<b>AMOUNT(/=)</b>	<b>AMOUNT (/=)</b>
Soap to wash (Imperial, Dettol, Sunlight)		1			
Toothpaste		2			
Vaseline or other similar lotions		3			
Household cleaning articles (Washing powder, OMO, JIK, Bleach)		4			
Matches		5			
Panadol and Aspirin		6			
Tobacco, Cigarettes or Snuff		7			

6a. **List currency for purchases / gifts of all items if NOT Ksh. Use G12 code.** | \_\_\_ | Other: \_\_\_\_\_



## **SECTION 11. Non-Frequent Non-Food Purchases**

**Read:** In the following questions, I want to ask about all purchases made for your household, regardless of which person made them. Please exclude from your answer anything purchased for processing or resale in a household enterprise. Now I am going to ask you about non-food consumption items that you use in your home.

			<b>PURCHASES PAST 7 DAYS</b>	<b>PURCHASES AVERAGE MONTH IN THE PAST 12 MONTHS</b>	<b>GIFTS PAST 12 MONTHS</b>
1. Has your household bought or spent money on or any [ITEM] during the past 12 months? Has your household received gifts of [ITEM] during the past 12 months?  <b><i>If YES to either, mark "1". If NO to both, mark "2". If NO, skip to next row.</i></b>			2. How much did your household spend on [ITEM] in the past 7 days?	3. How much did your household spend for [ITEM] in a typical month in the past 12 months?	4. What is the value of all the [ITEM] that you received as a gift during the past 12 months?
	<b>1=YES 2=NO</b>	<b>CODE</b>	<b>AMOUNT (/=)</b>	<b>AMOUNT (/=)</b>	<b>AMOUNT (/=)</b>
Linens (sheets, blankets, towels)		1			
Women's clothing, cloth, tailoring expenses and footwear		2			
Men's clothing, cloth, tailoring expenses and footwear		3			
Children's clothing, cloth, tailoring expenses and footwear		4			
Plates, cutlery, glassware		5			
Batteries (not car battery)		6			
Haircuts and hairstyling		7			

			<b>PURCHASES PAST 7 DAYS</b>	<b>PURCHASES AVERAGE MONTH IN THE PAST 12 MONTHS</b>	<b>GIFTS PAST 12 MONTHS</b>
1. Has your household bought or spent money on or any [ITEM] during the past 12 months? Has your household received gifts of [ITEM] during the past 12 months?  <b>If YES to either, mark "1". If NO to both, mark "2". If NO, skip to next row.</b>			2. How much did your household spend on [ITEM] in the past 7 days?	3. How much did your household spend for [ITEM] in a typical month in the past 12 months?	4. What is the value of all the [ITEM] that you received as a gift during the past 12 months?
	<b>1=YES 2=NO</b>	<b>CODE</b>	<b>AMOUNT (/=)</b>	<b>AMOUNT (/=)</b>	<b>AMOUNT (/=)</b>
Doctor, Hospital, and clinic fees		8			
Medicines (Not including Panadol, Aspirin)		9			
Health insurance (e.g. NHIF)		10			
Books, stationery, newspapers		11			
Postal expenses and telegrams		12			
Repair and maintenance of radio, stove		13			
Bicycle, motorbike, vehicle repair, and licenses (not gasoline)		14			
Home repair and improvements (i.e., mabati roof, cement floor, furniture)		15			
House Decoration (e.g., curtains, carpets, flowers)		16			

			<b>PURCHASES PAST 7 DAYS</b>	<b>PURCHASES AVERAGE MONTH IN THE PAST 12 MONTHS</b>	<b>GIFTS PAST 12 MONTHS</b>
1. Has your household bought or spent money on or any [ITEM] during the past 12 months? Has your household received gifts of [ITEM] during the past 12 months?  <b>If YES to either, mark "1". If NO to both, mark "2". If NO, skip to next row.</b>			2. How much did your household spend on [ITEM] in the past 7 days?	3. How much did your household spend for [ITEM] in a typical month in the past 12 months?	4. What is the value of all the [ITEM] that you received as a gift during the past 12 months?
	<b>1=YES 2=NO</b>	<b>CODE</b>	<b>AMOUNT (/=)</b>	<b>AMOUNT (/=)</b>	<b>AMOUNT (/=)</b>
Traveling and lodging expenses (not transport)		17			
Transport expenses (Matatu, Bus)		18			
Charity, donations (including church and mosque)		19			
Local village council taxes and fees, and community group fees (e.g. water group, women's group)		20			
School fees and other education/training fees		21			
Contributions to informal credit schemes (ROSCAs)		22			
Losses due to theft		23			
Gambling / Lottery spending		24			
Deposits to savings accounts		25			
Legal services/fees		26			

			<b>PURCHASES PAST 7 DAYS</b>	<b>PURCHASES AVERAGE MONTH IN THE PAST 12 MONTHS</b>	<b>GIFTS PAST 12 MONTHS</b>
1. Has your household bought or spent money on or any [ITEM] during the past 12 months? Has your household received gifts of [ITEM] during the past 12 months?  <b>If YES to either, mark "1". If NO to both, mark "2". If NO, skip to next row.</b>			2. How much did your household spend on [ITEM] in the past 7 days?	3. How much did your household spend for [ITEM] in a typical month in the past 12 months?	4. What is the value of all the [ITEM] that you received as a gift during the past 12 months?
	<b>1=YES 2=NO</b>	<b>CODE</b>	<b>AMOUNT (/=)</b>	<b>AMOUNT (/=)</b>	<b>AMOUNT (/=)</b>
Marriages, births, other ceremonies and bride price		27			
Funeral expenses		28			
Telephone Calling card/Scratch card		29			
Internet café expenses/Internet connection charge		30			
Car/Motorcycle fuel		31			
Other fishing equipments (not fishing rods/boats)		32			
Cinema, Video show		33			
House/Apartment rent		34			
Interest payment on loans		35			
Electricity expenses (from all sources)		36			
Water expenses (from all sources)		37			

	<b>PURCHASES PAST 7 DAYS</b>		<b>PURCHASES AVERAGE MONTH IN THE PAST 12 MONTHS</b>	<b>GIFTS PAST 12 MONTHS</b>
1. Has your household bought or spent money on or any [ITEM] during the past 12 months? Has your household received gifts of [ITEM] during the past 12 months?  <b>If YES to either, mark "1". If NO to both, mark "2". If NO, skip to next row.</b>	2. How much did your household spend on [ITEM] in the past 7 days?		3. How much did your household spend for [ITEM] in a typical month in the past 12 months?	4. What is the value of all the [ITEM] that you received as a gift during the past 12 months?
	<b>1=YES 2=NO</b>	<b>CODE</b>	<b>AMOUNT (/=)</b>	<b>AMOUNT (/=)</b>
Sports expenses (Gym, Athletics, Soccer Clubs e.t.c )		38		
Misc. other non-food expense ( <b>specify</b> ): 1: _____		39		
Misc. other non-food expense ( <b>specify</b> ): 2: _____		40		
Misc. other non-food expense ( <b>specify</b> ): 3: _____		41		

4a. **List currency for purchases / gifts of all items if NOT Ksh. Use G12 code.** | \_\_\_ | Other: \_\_\_\_\_

## **SECTION 12. Daily Meal/Snack Consumption**

**Read:** Now I would like to ask you about meals eaten outside of the home.

1. How many [MEALS/SNACKS] were eaten by all household members outside of the home during the past 7 days? For example in a hotel, or in someone else's home ( <i>Please try to avoid "DK"!</i> )		Number of meals in the last 7 days	2. What was the value of these [MEALS/ SNACKS] eaten outside of the home in the last 7 days? <b>Record the value of all of these meals (all sodas, not the cost per soda).</b> (DK=999)
	<b>CODE</b>	<b>NUMBER</b>	<b>AMOUNT</b>
a. Breakfast	1		
b. Lunch	2		
c. Dinner/supper	3		
d. Snacks (doughnuts, chapati, chips, crisps, Samosa)	4		
e. Sodas / Bottled water	5		
f. Alcoholic drinks	6		
g. Other 1 ( <b>specify</b> ): _____	7		
h: Other 2 ( <b>specify</b> ): _____	8		
i. Other 3 ( <b>specify</b> ): _____	9		

2a. **List currency for all above meals snacks if NOT Ksh. Use G12 code.** |\_\_\_| Other: \_\_\_\_\_



11	Other grains (specify):			11										
----	----------------------------	--	--	----	--	--	--	--	--	--	--	--	--	--

**Read:** Now I will ask you about vegetable and legumes that you eat at home.

	[FOOD]	PURCHASES IN LAST 7 DAYS		HOME PRODUCTION			MARKET PURCHASES			GIFTS		UNIT CODES		
		Q1. Has your household consumed [FOOD] during the past 12 months?	Q2. Has your household grown or produced [FOOD] during the past 12 months?  IF Q1 = 2 SKIP TO NEXT ITEM	Q3. How much [FOOD] have the members of your household purchased in the last 7 days?  PROMPT FOR SHILLINGS  IF Q2 = 2 → Q6.	Q4. During the last 12 months how many months was your household consuming [FOOD] that your household grew or produced?  If "0" → Q6	Q5. During these months that your household grew or produced, how much did your household consume in a typical week?  PROMPT FOR SHILLINGS	Q6. How many months in the past 12 months did your household purchase [FOOD]?  IF "0" → Q8	Q7. How much do you usually spend on [FOOD] in a typical week of the months that your household purchases [FOOD]?  PROMPT FOR SHILLINGS	Q8. What is the total amount of the [FOOD] consumed that your household received as a gift in the past 12 months?	AMT	UNIT		AMT	UNIT
12	Groundnuts			12										
13	Beans			13										
14	Cowpea leaves			14										
15	Green grams			15										
16	Tomatoes			16										
17	Onions			17										
18	Kales			18										
19	Cabbage			19										
20	Mrenda (Local Vegetable)			20										
21	Saka (Local Vegetable)			21										

- UNIT CODES**  
1=KENYAN SHILLINGS  
2=KILO  
3=GRAM  
4=GOROGORO-2KG  
5=DEBE-20KG  
6=GUNIA-90KG  
7=LITRE  
8=FANTA BOTTLE-700ML  
9=BEER BOTTLE-500ML  
10=ORANGE BOTTLE-700ML  
11=KASUKU-1KG  
12=KASUKU-2KG  
13=JERRY CAN/DUMU-20L  
14=NUMBER  
15=PACK/PACKET  
16=BUNDLE  
17=OTHER (DESCRIBE)  
18=UGANDAN SHILLINGS



22	Other Vegetable: <b>(specify):</b>			22										
----	---------------------------------------	--	--	----	--	--	--	--	--	--	--	--	--	--

**Read:** Now I will ask you about meats and dairy products that you eat at home.

				PURCHASES IN LAST 7 DAYS		HOME PRODUCTION			MARKET PURCHASES			GIFTS			
		Q1. Has your household consumed [FOOD] during the past 12 months?	Q2. Has your household grown or produced [FOOD] during the past 12 months?  IF Q1 = 2 SKIP TO NEXT ITEM	Q3. How much [FOOD] have the members of your household purchased in the last 7 days?  PROMPT FOR SHILLINGS  IF Q2 = 2 → Q6.	Q4. During the last 12 months how many months was your household consuming [FOOD] that your household grew or produced?  If "0" → Q6	Q5. During these months that your household grew or produced, how much did your household consume in a typical week?  PROMPT FOR SHILLINGS	Q6. How many months in the past 12 months did your household purchase [FOOD]?  IF "0" → Q8	Q7. How much do you usually spend on [FOOD] in a typical week of the months that your household purchases [FOOD]?  PROMPT FOR SHILLINGS	Q8. What is the total amount of the [FOOD] consumed that your household received as a gift in the past 12 months?	UNIT CODES 1=KENYAN SHILLINGS 2=KILO 3=GRAM 4=GOROGORO-2KG 5=DEBE-20KG 6=GUNIA-90KG 7=LITRE 8=FANTA BOTTLE-700ML 9=BEER BOTTLE-500ML 10=ORANGE BOTTLE-700ML 11=KASUKU-1KG 12=KASUKU-2KG 13=JERRY CAN/DUMU-20L 14=NUMBER 15=PACK/PACKET 16=BUNDLE 17=OTHER (DESCRIBE) 18=UGANDAN SHILLINGS					
	[FOOD]	1=YES 2=NO	1=YES 2=NO	AMT	UNIT	MONTHS	AMT	UNIT	MONTHS	AMT	UNIT	AMT	UNIT		
23	Beef			23											
24	Goat			24											
25	Chicken, duck, poultry			25											
26	Fish			26											
27	Other meat (eg. pork, lamb): <b>(specify):</b>			27											
28	Eggs			28											

29	Milk (fresh, fermented)			29										
30	Milk powder			30										

**Read:** Now I will ask you about other food purchases consumed at home.

				PURCHASES IN LAST 7 DAYS		HOME PRODUCTION			MARKET PURCHASES			GIFTS		
[FOOD]	Q1. Has your household consumed [FOOD] during the past 12 months?	Q2. Has your household grown or produced [FOOD] during the past 12 months?  IF Q1 = 2 SKIP TO NEXT ITEM	Q3. How much [FOOD] have the members of your household purchased in the last 7 days?  ALWAYS PROMPT FOR SHILLINGS  IF Q2 = 2 → Q6.	Q4. During the last 12 months how many months was your household consuming [FOOD] that your household grew or produced?  If "0" → Q6	Q5. During these months that your household grew or produced, how much did your household consume in a typical week?  PROMPT FOR SHILLINGS	Q6. How many months in the past 12 months did your household purchase [FOOD]?  IF "0" → Q8	Q7. How much do you usually spend on [FOOD] in a typical week of the months that your household purchases [FOOD]?  PROMPT FOR SHILLINGS	Q8. What is the total amount of the [FOOD] consumed that your household received as a gift in the past 12 months?	UNIT CODES 1=KENYAN SHILLINGS 2=KILO 3=GRAM 4=GOROGORO-2KG 5=DEBE-20KG 6=GUNIA-90KG 7=LITRE 8=FANTA BOTTLE-700ML 9=BEER BOTTLE-500ML 10=ORANGE BOTTLE-700ML 11=KASUKU-1KG 12=KASUKU-2KG 13=JERRY CAN/DUMU-20L 14=NUMBER 15=PACK/PACKET 16=BUNDLE 17=OTHER (DESCRIBE) 18=UGANDAN SHILLINGS					
	1=YES 2=NO	1=YES 2=NO	AMT UNIT	MONTHS	AMT UNIT	MONTHS	AMT UNIT	AMT UNIT	AMT UNIT					
31	CookingFat		31											
32	Sugar		32											
33	Salt		33											
34	Pepper		34											
34a	Other spices (ie, Royco)		34a											
35	Tea, Coffee		35											
36	Breads, biscuits, cakes		36											
37	Soda, squash		37											
38	Alcoholic drinks		38											

39	Other food 1: <b>(specify):</b> _____			39										
----	---	--	--	----	--	--	--	--	--	--	--	--	--	--

**Read:** Now I will ask you about fruits that you eat at home.

	[FOOD]	Q1.	Q2.	PURCHASES IN LAST 7 DAYS		HOME PRODUCTION			MARKET PURCHASES			GIFTS		UNIT CODES	
		Has your household consumed [FOOD] during the past 12 months?	Has your household grown or produced [FOOD] during the past 12 months?	How much [FOOD] have the members of your household purchased in the last 7 days?	PROMPT FOR SHILLINGS	IF Q2 = 2 → Q6.	During the last 12 months how many months was your household consuming [FOOD] that your household grew or produced?	During these months that your household grew or produced, how much did your household consume in a typical week?	PROMPT FOR SHILLINGS	How many months in the past 12 months did your household purchase [FOOD]?	IF "0" → Q8	How much do you usually spend on [FOOD] in a typical week of the months that your household purchases [FOOD]?	PROMPT FOR SHILLINGS		What is the total amount of the [FOOD] consumed that your household received as a gift in the past 12 months?
		1=YES 2=NO	1=YES 2=NO		AMT	UNIT	MONTHS	AMT	UNIT	MONTHS	AMT	UNIT	AMT	UNIT	
40	Papaya (pawpaw)			40											
41	Water Melon			41											
42	Bananas			42											
43	Orange, other citrus			43											
44	Pineapple			44											
45	Avocado			45											
46	Mango			46											
47	Passion			47											
48	Jack fruit			48											

- UNIT CODES**
- 1=KENYAN SHILLINGS
  - 2=KILO
  - 3=GRAM
  - 4=GOROGORO-2KG
  - 5=DEBE-20KG
  - 6=GUNIA-90KG
  - 7=LITRE
  - 8=FANTA BOTTLE-700ML
  - 9=BEER BOTTLE-500ML
  - 10=ORANGE BOTTLE-700ML
  - 11=KASUKU-1KG
  - 12=KASUKU-2KG
  - 13=JERRY CAN/DUMU-20L
  - 14=NUMBER
  - 15=PACK/PACKET
  - 16=BUNDLE
  - 17=OTHER (DESCRIBE)
  - 18=UGANDAN SHILLINGS

49	Other fruits (specify): _____			49										
----	----------------------------------	--	--	----	--	--	--	--	--	--	--	--	--	--

**Read:** We are almost finished with the survey. Now I will ask you about the fuels you use.

				PURCHASES IN LAST 7 DAYS		HOME PRODUCTION			MARKET PURCHASES			GIFTS		
		Q1.	Q2.	Q3.	Q4.	Q5.	Q6.	Q7.	Q8.	UNIT CODES				
		Has your household consumed [FUEL] during the past 12 months?	Has your household grown or produced during the past 12 months? <b>IF Q1 = 2 SKIP TO NEXT ITEM</b>	How much [FUEL] have the members of your household purchased in the last 7 days?  <b>PROMPT FOR SHILLINGS</b>  <b>IF Q2 = 2 → Q6.</b>	During the last 12 months how many months was your household consuming [FOOD] that your household grew or produced?  <b>if "0" → Q6</b>	During these months how much did you consume in a typical week?  <b>PROMPT FOR SHILLINGS</b>	How many months in the past 12 months did your household purchase [FUEL]?  <b>IF "0" → Q8</b>	How much do you usually spend on [FOOD] in a typical week of the months that your household purchases [FOOD]?  <b>PROMPT FOR SHILLINGS</b>	What is the total amount of the [FOOD] consumed that your household received as a gift in the past 12 months?	1=KENYAN SHILLINGS 2=KILO 3=GRAM 4=GOROGORO-2KG 5=DEBE-20KG 6=GUNIA-90KG 7=LITRE 8=FANTA BOTTLE-700ML 9=BEER BOTTLE-500ML 10=ORANGE BOTTLE-700ML 11=KASUKU-1KG 12=KASUKU-2KG 13=JERRY CAN/DUMU-20L 14=NUMBER 15=PACK/PACKET 16=BUNDLE 17=OTHER (DESCRIBE) 18=UGANDAN SHILLINGS				
[FOOD]		1=YES 2=NO	1=YES 2=NO	AMT	UNIT	MONTHS	AMT	UNIT	MONTHS	AMT	UNIT	AMT	UNIT	
50	Firewood			50										
51	Charcoal			51										
52	Kerosene			52										
53	Cooking gas			53										
54	Other fuel: (specify): _____			54										