

Pre-Analysis Plan

“Effects of Promoting Parent-Child Reading in Kenya”¹

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Summary: This document describes a randomized controlled trial (RCT) for parents and their children in Kenya that promotes parent-child reading by providing free and subsidized storybooks, along with information about the benefits of reading and reminders to read. This RCT was designed to (a) elicit demand for storybooks and (b) estimate the impacts of a reading encouragement on reading practices and human capital investment. This document outlines the plan for the latter analysis, using data from follow-up phone surveys an average of 6 months after the intervention. It builds on a previously-filed plan for estimating the demand for storybooks. These demand estimates have informed the development of this plan, though none of the survey data from the reading encouragement follow-up have been examined to date. This document outlines planned regression specifications and outcome variable definitions and descriptions; for more details, please see the pre-analysis plan for the demand analysis. We note that we anticipate possibly carrying out further analyses beyond those included in this document; hence, this document is not intended to be comprehensive or to preclude additional or exploratory analysis.

Appendices: Intervention Module, including information script read to primary caregivers as part of the intervention; informational poster provided to households as part of the intervention; follow-up SMS message to remind households to read, and KSI Module (storybook intervention follow-up phone survey).

¹As data collection launched prior to the registration of this pre-analysis plan, a Data Management Plan was registered under AEA RCT Registry #1191 (Experimental Evidence on Child Health and Long-run Outcomes in Kenya) on September 19, 2018, describing who would have access to any data collected prior to the registration of this pre-analysis plan.

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1. Introduction

1.1 Summary

Reading with young children is believed to be an especially important investment in human capital, preparing children for literacy and teaching them the importance of learning (Behrman et al. 2014, Curenton and Justice 2008, Gove and Cvelich 2011, Walker, Greenwood, Hart, and Carta 1994, Zhang 2006). However, many households in western Kenya lack reading materials for young children, and may or may not be aware of the benefits of early reading even if they do have age-appropriate books on hand. We seek to improve the early-childhood human capital investments of parents in Kenya by encouraging the practice of reading to young children at home. In particular, we conduct a randomized controlled trial that promotes reading by providing free and subsidized storybooks, along with information about the benefits of reading, suggestions on reading practices, and reminders to read. This project seeks to (a) elicit demand for storybooks and (b) estimate effects on reading practices and educational investments.³ We also estimate long-term complementarities with human capital interventions previously provided to parents.

A pre-analysis plan focused on the demand elicitation portion of the study, which is conducted prior to providing parents information on the benefits of reading, was already filed with the AEA Trial Registry. The authors have seen preliminary, pre-specified results on storybook demand.

This pre-analysis plan focuses on follow-up data collection to estimate the effects of the intervention on reading practices and human capital investments. Phone surveys (known as the **KSI Module**) were conducted with primary caregivers around 6 months after the intervention, and capture information on household reading materials, reading practices and investments in human capital.

1.2 Sample

The Kenya Life Panel Survey (**KLPS**) is a longitudinal dataset that contains educational, health, nutritional, demographic, labor market, and other information for nearly 10,000 Kenyan adults, spanning from their time in primary school up through early adulthood. The KLPS sample comprises individuals who participated in one of two previous randomized NGO programs: one which provided deworming medication to primary school students during 1998–2003 (known as the Primary School Deworming Program, or **PSDP**; Miguel and Kremer, 2004) and one which provided merit scholarships to upper primary school girls in 2001 and 2002 (known as the Girls' Scholarship Program, or **GSP**; Kremer, Miguel, and Thornton, 2009). An approximately 20% subset of these individuals also participated in the vocational training and cash grants programs during 2009–2014 (Hicks et al., 2015b).

³ As noted in the pre-analysis plan for the demand analysis, this study builds on Knauer et al. (2019), a randomized controlled trial which provided storybooks, both by themselves and in conjunction with reading training sessions. The training sessions were randomly varied in the degree of intensity, from group sessions to home visits. We thank authors of that study, along with Dr. Patricia Kariger, for helpful conversations that have informed the design and creation of materials for the current study.

The fourth round of the KLPS data collection effort (*KLPS-4*) focuses on the subsets of the KLPS sample who participated in the PSDP or the vocational training and cash grants interventions. KLPS-4 collects information from the KLPS focus respondent (through survey modules known as the E+ and *I Modules*) and also targets a subset of their children aged 3-9 and the primary caregivers (*PCs*) of these children.⁴ Selected children are administered a series of child assessments known as the KLPS-Kids modules (see Fernald et al. 2019 for more details), and PCs are administered a *PC Module*.

The sample for the reading promotion intervention is a subset of those participating in the KLPS-Kids modules. The child reading promotion intervention is provided to the primary caregiver of a 3-6 year old KLPS-Kids child.⁵ While we aim to promote child reading among all young children of a KLPS parent, and intervention materials are not child-specific, for the purposes of administering the intervention, tracking and assessment, we designate a specific *storybook child* for eligible KLPS parents. In cases where a KLPS parent has more than one sampled child in this age range, we designate the KLPS-Kids 3-5 year old child as the storybook child. The intervention is administered as part of the PC Module associated with the storybook child, and is framed around promoting parent-child reading. (For more specifics on the sample for the intervention, please see Bonds et al. 2019).

As previously mentioned, KLPS-4 data collection is currently ongoing. At the time of finalizing and registering this plan, 1,717 children have been sampled for the storybook intervention, 2,436 PC Modules have been completed, 2,411 children's assessments have been completed, and 1,090 KSI Module follow-up surveys have been completed (as of January 17, 2020). We anticipate a full sample of roughly 6,000 children across Waves 1 and 2 of the main KLPS-Kids activity, though the exact number will depend both on the tracking rate and the number of children that fall within the target age range. The reading promotion intervention is included as part of Wave 1 of the KLPS-4 Kids activity. Depending on evolution of interests of the research team and study results, we will make a decision on whether to include the reading promotion intervention in Wave 2 in advance of launching Wave 2. We note that we plan on using a two-stage tracking methodology to minimize the biases related to survey attrition.⁶

1.3 Child Reading Promotion Intervention⁷

The child reading promotion intervention entails the following:

- A small cash grant (up to 300 Kenyan Shillings, which is approximately 3 US Dollars) and an opportunity to purchase a subsidized storybook at a randomly-selected price; OR an opportunity to receive a free storybook;

⁴ Analyses on the adult respondents, in particular related to the long-term impacts of the PSDP intervention, have been pre-specified separately; see Baird et al. (2019) and references therein.

⁵ Specifically, the eligible sample for the reading promotion intervention in Wave 1 of KLPS-4 is the sub-sample of KLPS parents with at least one sampled child between 2.5 years and 6 years of age at time of Wave 1 survey launch (September 2018).

⁶ For more information on the two-stage tracking procedure we employ in the main KLPS study, see Baird, Hamory, and Miguel (2008) and Baird et al. (2016). Our approach is related to that used in the U.S. Moving to Opportunity evaluation project (Kling, Liebman and Katz, 2007; Orr et al., 2003).

⁷ Background information included here and in other sections is taken from Bonds et al. (2019).

- An informational script on the benefits of reading to young children and strategies for doing so;
- A poster summarizing the informational script;
- An SMS reminder message to encourage reading, sent 2.5-3.5 months after the initial encounter.

The storybooks are printed by Oxford University Press – East Africa, and include short stories with animations that are appropriate for children aged 3 to 6. We offer six different storybooks that were selected based on pilot work and focus groups in the local area. Two of the books are in English and the remaining four are in Kiswahili. These books can be purchased at textbook stores in larger urban areas or cities, including Busia Town, Kisumu, or Nairobi.

Please see the Appendix for the script, poster, and SMS reminder message. The instructions in the script are specifically tailored to account for the possibility that some parents may not be literate, and focus on the ways that parents can encourage familiarity with and love for books by creating stories based on the pictures, and engaging children with questions about the story. The poster includes drawings of parents reading to their children, and summarizes the key points of the information script. It also serves as a later reminder for parents to continue reading to their children.

1.4 Experimental Design: Child Reading Promotion

The RCT consists of three treatment groups and one control group. In Treatment Groups 1 and 2, caregivers are offered a small amount of cash plus the opportunity to purchase a subsidized storybook. In Treatment Group 3, the caregiver is offered a free storybook (full subsidy) instead of the cash plus subsidized book offer. All three treatment groups also receive the informational script and poster, as well as the SMS reminder message described above. The fourth group is the control group, which receives no storybook offer, informational materials, or SMS reminder message.

In Treatment Group 1, caregivers are given KES 150 (approximately USD 1.50) with an opportunity to purchase up to one storybook at a randomly-selected subsidized price. In Treatment Group 2, caregivers are given KES 300 (approximately USD 3.00) with an opportunity to purchase up to two storybooks, each at a subsidized price.⁸ For both Groups 1 and 2, the caregivers are informed that they have been randomly selected to receive the monetary gift during the PC Module interview. The survey enumerator then provides information on the benefits of reading, and presents an opportunity to purchase the storybooks at a randomly-selected subsidized price. The market price of the storybooks offered is KES 195 (approximately USD 1.95). In both Treatment Groups 1 and 2, one of three subsidy levels are randomly offered: Low Subsidy (Subgroup L), Medium Subsidy (Subgroup M), or High Subsidy (Subgroup H). In Subgroup L, the final book price is KES 150, which is about a 25 percent subsidy. In Subgroup M, the final book price is KES 100, about a 50 percent subsidy. In Subgroup H, the final book price is KES 50, about a 75 percent subsidy. These subsidy levels are randomly assigned, and each caregiver has an equal chance of

⁸ We restrict the number of books a caregiver can purchase so that they can fund the entire purchase with the cash we give to them.

receiving each subsidy level. The caregiver receives any funds not used to purchase the book via M-Pesa (a mobile phone cash transfer platform) within 10 days after the survey.

Both Treatment Group 1 and 2 receive the cash and opportunity to purchase a subsidized storybook in advance of the informational script and poster. If the respondent changes their mind and decides to purchase or accept a storybook after hearing the information, we allow them to purchase or accept, and record the book title.

In Treatment Group 3, the final book price is KES 0, a 100 percent (full) subsidy. The four groups are summarized in the table below:

Table 1: Child Reading Promotion Intervention Group Assignment

	Treatment Group 1	Treatment Group 2	Treatment Group 3	Control
KES 150 w/ offer to purchase up to one storybook at one of three subsidized prices: KES 150 (L), KES 100 (M), or KES 50 (H)	✓			
KES 300 w/ offer to purchase up to two storybooks at one of three subsidized prices: KES 150 (L), KES 100 (M), or KES 50 (H)		✓		
Free Storybook			✓	
Informational Script	✓	✓	✓	
Informational Poster	✓	✓	✓	
SMS Reminder Message (2.5-3.5 months later)	✓	✓	✓	

Assignment to treatment groups was done as follows: since eligible children (aged 3-5) are not identified until the time of the I Module interview (as discussed in Section 1.2 above), the full sample of KLPS Wave 1 adults were assigned to one of the four groups (three treatment groups and one control group). Randomization was stratified by three adult characteristics: PSDP or GSP group,⁹ grade in school at baseline, and gender. Stratification by grade ensures that the age distribution of the caregivers is balanced across treatment groups.

At the time of the parent I Module survey, enumerators determine whether the respondent has a child (or children) eligible for the KLPS-Kids activity. For those with eligible children, sampled children are selected and information is collected about their primary caregivers. From this, the storybook child is determined, and the appropriate child reading promotion intervention for the KLPS parent's treatment assignment is implemented as part of the PC Module for the corresponding primary caregiver.

KLPS-4 data collection is still ongoing. We estimate the expected eligible sample for the child reading promotion intervention will be approximately 1,700 individuals for Wave 1 of the KLPS-4 round.

⁹ There are three PSDP/ GSP groups used for stratification: i) PSDP treatment (Groups 1 and 2), ii) PSDP control (Group 3), iii) GSP sample.

1.4 Data

1.4.1 Child Reading Promotion Baseline

KLPS-4 serves as a baseline for the child reading promotion intervention. Immediately before the intervention, a detailed Primary Caregiver (PC) Module is administered to each primary caregiver. This module asks detailed questions about the KLPS child, primary caregiver, and household environment. Particular sections include: caregiver characteristics, child health and development, child sleep patterns, home environment, and a child strengths and difficulties questionnaire (see the Appendix for the full module). The demand pre-analysis plan outlines ways we may use this for exploratory analysis.

As part of the reading promotion intervention, we collect data on whether or not the caregiver purchases/accepts a storybook (Question 1a); the number of storybooks purchased (Question 1ai, Treatment Group 2 only); the storybook(s) selected (Intervention Question 1b for Treatment Groups 1 and 2; Question 1a for Treatment Group 3); why the storybook was selected (Question 1c for Treatment Groups 1 and 2; Question 1b for Treatment Group 3) and who else in the household selected or helped to select the storybook (Primary Caregiver, spouse of primary caregiver, KLPS child of primary caregiver, other child in household, other adult in household, other child not in household, and/or other adult not in household) (Question 1d for Treatment Groups 1 and 2; Question 1c for Treatment Group 3). Lastly, if the caregiver chooses *not* to purchase a storybook (Treatment Groups 1 and 2) or *not* to accept the free storybook (Treatment Group 3), we ask why they did not purchase or accept a storybook (Question 2). If the caregiver initially decides not to purchase or accept a storybook, but then later changes their mind after the information is read, we record their selected storybook in Question 3. (All question numbers refer to the Intervention Module.) See the Appendix for more details on the administration of the intervention.

1.5 KSI Follow-up Phone Survey

The KSI follow-up phone survey asks detailed questions on reading practices and investment in the education of the storybook child in order to estimate effects of the storybook intervention. The interview lasts about 10 minutes and is conducted with the primary caregiver¹⁰ of each storybook child an average of six months after the intervention. Below, we highlight the questions asked in the follow-up survey:

- Reading Materials: indicator for purchased any additional storybooks (post-intervention; Question 2), total number of storybooks currently in household (Question 3)

¹⁰ We first attempt to interview the Primary Caregiver or spouse, if they have spent time with the child in the last week. If they both have not, but usually spend time with the child, we reschedule the interview. If the Primary Caregiver or spouse are not currently spending time with the child, we ask for an alternative contact. For the main analysis, we expect to include respondents regardless of their relationship to the storybook child or primary caregiver that received the intervention. If we find systematically worse data quality among non-primary caregiver respondents, we may also conduct robustness checks restricting the sample to primary caregiver respondents.

- Reading Practices: number of days in the last 7 days that an adult or teenager read with storybook child at home (Question 4), number of minutes in the previous day adult or teenager read with storybook child at home (Question 4a), number of days in the last 7 days storybook child read by herself or with other children (Question 5), number of minutes in the previous day storybook child read by herself or with other children (Question 5a), knowledge of best reading practices (Question 9, 10, 11a, 11b), knowledge of storybook character (Question 1b)
- Investment in Human Capital: enrollment in school, including ECD, pre-school, primary school, or other school (Question 6, 7), number of days storybook child attended school in the last 5 days school was in session (Question 6a).

1.6 Analysis and Data Examined to Date

At the time of registering this pre-analysis plan, we have collected information on and administered the intervention to a subset of the Wave 1 sample using a tablet-based survey instrument. The first thirteen rounds of SMS reminder messages were sent each month from mid-January 2019 through mid-January 2020. The pre-analysis plan covering the demand estimation was filed to the AEA Trial Registry on May 3, 2019. We have since estimated a subset of the pre-specified demand analyses. We find generally high levels of demand that increase our confidence that we are well-powered to conduct the analyses pre-specified here.

At the start of data collection, we registered a data management memo on the AEA registry to outline who would have access to KLPS-4 data in advance of filing pre-analysis plans, and have followed this with follow-up phone survey data collected prior to the registration of this pre-analysis plan. The data management memo specifies that all KLPS-4 data collected prior to the registration of this plan has been compiled, organized, and stored only by those team members who are *not* involved in writing of this pre-analysis plan. Research team members who have been involved in writing this pre-analysis plan have only seen summary statistics and tracking rates for the purposes of ensuring data quality for the KSI phone survey data. They have not examined the data nor performed any data analysis before registering this plan. No team members have performed any estimates of treatment effects using the KSI phone survey data. Access to the KSI phone survey data will be provided to research team members involved in writing the pre-analysis plan only after the pre-analysis plan is filed on the AEA RCT Registry.

2. Analysis

This pre-analysis plan outlines the planned analysis for estimating the impact of storybooks on reading practices and educational investment in this sample. We will focus on Intention-to-Treat (ITT) estimates of treatment group assignment.

2.1 Effects of Reading Promotion: Full Sample

As described in Section 1.4 above, each individual in Treatment Group 1 is given the opportunity to purchase up to one book at the given subsidy level, while each individual in Treatment Group 2 is given the opportunity to purchase up to two books at the given subsidy level. Individuals in Treatment Group 3 have the opportunity to accept a fully subsidized storybook. The full sample

includes children of parents who were in the Primary School Deworming Program (PSDP) sample and/or vocational education and cash grant samples.

The main estimating equation looks at effects from receiving any treatment (i.e., an indicator equal to one for respondents in Treatment 1, 2 or 3). To the extent that demand for storybooks is high, respondents in all treatment arms will also have received storybooks, and this pools all arms together. We estimate:

$$Y_i = \alpha_0 + \alpha_1 AnyTreat_i + X_i' \lambda + \varepsilon_i, \quad (1)$$

where Y_i is an outcome of interest for respondent i , $AnyTreat_i$ is an indicator equal to 1 if respondent i was in any treatment group, and X_i' is a vector of control variables. The main specification will include a vector of control variables X_i' , containing the variables used for stratification during storybook treatment randomization: PSDP or GSP treatment group, gender of KLPS parent, and baseline (1998) grade of KLPS parent. We will also include an indicator for PSDP program participation, gender of interviewer; months elapsed since the start of the survey wave; and an indicator for inclusion in the vocational education / cash grant sample as well as treatment groups within that intervention.¹¹ We will use weights that take into account the two-stage tracking strategy of KLPS-Kids data collection. Standard errors will be robust to heteroscedasticity.

Our main hypothesis test is a two-sided t-test of the null hypothesis that $\alpha_1=0$, which captures the effect of being assigned to any treatment group. It is an average effect for receiving either a free storybook or the offer to purchase subsidized storybooks (and the corresponding small amount of cash), as well as the reading promotion information and reminders.

Next, we estimate effects separately by treatment arm. For this analysis, we pool across subsidy levels within each treatment arm.¹² The estimating equation is thus:

$$Y_i = \beta_0 + \beta_1 T_i^F + \beta_2 T_i^1 + \beta_3 T_i^2 + X_i' \lambda + \varepsilon_i, \quad (2)$$

where T_i^F is an indicator for being assigned to receive a free storybook (treatment arm 3), T_i^1 is an indicator for being assigned a subsidy to purchase one book (treatment arm 1), and T_i^2 is an indicator for being assigned a subsidy to purchase up to two books (treatment arm 2). Controls, weights and standard errors follow Equation 1.

We are interested in the sign and magnitude of the treatment coefficients. We will conduct two-sided t-tests on the null-hypothesis that $\beta_1=0$, $\beta_2=0$, and $\beta_3=0$, and for differences between coefficients as a secondary analysis. We will also conduct a joint test of the significance of the treatment indicators ($\beta_1 = \beta_2 = \beta_3 = 0$).

2.2 Complementarities with Human Capital Interventions

¹¹ If we continue the intervention in Wave 2, we will also include an indicator for surveys conducted during wave 2.

¹² Since, in initial analysis of the storybook demand information, demand appears high for all subsidy groups, we believe this is a sensible decision. We take advantage of the variation in subsidy levels when estimating heterogeneous treatment effects.

Next, we explore whether there are complementarities between human capital interventions previously provided to KLPS respondents and the effects of the reading promotion intervention. Throughout the rest of this section, we use the treatment status of the KLPS respondent in the corresponding intervention, even if the KLPS respondent is not the primary caregiver of the storybook child.

2.2.1 Deworming (PSDP) Sample

We first look for complementarities with a deworming intervention, known as the Primary School Deworming Program (**PSDP**), which took place between 1998 and 2003. Primary schools were assigned to one of three treatment groups, and that individuals in Group 1 and 2 schools were assigned 2.41 more years of deworming on average than Group 3 individuals. See the demand pre-analysis plan (Bonds et al. 2019), Miguel and Kremer (2004), Miguel et al. (2014) and Baird et al. (2016) for more details.

For the PSDP sample, we exclude those who were additionally treatment group individuals in the vocational training and cash grants intervention (described in the next section). The sample thus includes PSDP individuals who were not involved in the training/grant program, as well as PSDP individuals who were part of the training/grant program control group. Because the voucher/grant winners and non-winners were randomly selected, the analysis will adjust the survey weights for individuals in the non-winner comparison group in order to maintain initial (baseline PSDP) population representativeness.

Our main estimating equation for PSDP complementarities interacts PSDP treatment status with the indicator for any reading promotion treatment (Equation 1):

$$Y_i = \alpha_0 + \alpha_1 AnyTreat_i + \alpha_2 T_i^{PSDP} + \alpha_3 T_i^{PSDP} * AnyTreat_i + X_i' \lambda + \varepsilon_i, \quad (1a)$$

where Y_i is an outcome of interest for individual i . The binary variable T_i^{PSDP} is an indicator for individual i in the PSDP Deworming Groups 1 or 2 (versus Group 3) in 1998. We will include a vector of control variables X_i' , containing the variables used for stratification during storybook treatment randomization: gender of KLPS parent, and baseline grade (1998) of KLPS parent. We will also include a vector of controls used either to stratify the original PSDP sample, or in the sampling of the KLPS sample, as well as other key controls used in Baird et al. (2016, 2017). This vector comprises an indicator for gender of interviewer; month of interview fixed effects; the total density of primary school children in a 6 km radius around the parents' PSDP school in 1998; an indicator for inclusion in the vocational education / cash grant sample; indicator for geographic zone of parent's school in 1998; population of parent's school in 1998; indicator for participation in deworming cost-sharing in 2001 (Kremer and Miguel 2007); and average 1996 test score of parent's PSDP school.¹³ We will include survey weights to maintain initial (baseline PSDP) population representativeness. We also take into account both the sampling for the KLPS and the two-stage tracking strategy of KLPS-Kids data collection. We will report robust standard errors clustered at the 1998 school level.

¹³ If we continue the intervention in Wave 2, we will also include an indicator for surveys conducted during wave 2.

Our main coefficient of interest is α_3 , the differential effect of the reading intervention for the PSDP treatment group. The main hypothesis test is a two-sided t-test of the null hypothesis that $\alpha_3=0$. We are interested in both the magnitude and the statistical significance of the coefficient.

For completeness, we also will present results that interact PSDP treatment status with the child reading intervention treatment variables from Equation 2:

$$Y_i = \beta_0 + \beta_1 T_i^F + \beta_2 T_i^1 + \beta_3 T_i^2 + \beta_4 T_i^{PSDP} + \beta_5 T_i^{PSDP} * T_i^F + \beta_6 T_i^{PSDP} * T_i^1 + \beta_7 T_i^{PSDP} * T_i^2 + X_i' \theta + \varepsilon_i. \quad (2a)$$

As above, the binary variable T_i^F indicates whether individual i was randomly assigned into the full (i.e. free storybook) arm, and the binary variables T_i^1 and T_i^2 indicate whether individual i was assigned a subsidy to purchase one book or two books, respectively. The main coefficients of interest are β_5 , β_6 , and β_7 in Equation 2a, which capture differential effects by PSDP treatment status and storybook treatment group. We will conduct two-sided t-tests on the null-hypotheses $\beta_5=0$, $\beta_6=0$, and $\beta_7=0$, and compare the magnitudes of the coefficients to one another. We will also conduct an F-test of the joint significance of these three coefficients.

Of secondary interest for both Equations 1a and 2a is the magnitude and significance of the coefficient on the indicator for PSDP treatment status (α_2 and β_4 , respectively), which captures whether PSDP treatment increases the level of outcomes of interest in this pre-analysis plan. We will also test the null hypothesis that there is no effect of PSDP treatment status on reading and investment outcomes using a joint test significance of all PSDP terms. For Equation 1a, this is an F-test of the joint significance of α_2 and α_3 ; for Equation 2a, this is an F-test of the joint significance of β_4 , β_5 , β_6 , and β_7 .

2.2.2 Vocational Training and Cash Grant Samples

The vocational training and cash grant program we study, which took place during 2009-2014, included 2,163 adolescents and young adults ranging from roughly 17 to 28 years of age who applied for vocational education tuition vouchers. Approximately 70% of these individuals were participants of PSDP, and the others were participants in the Girls' Scholarship Program (**GSP**), a separate randomized education intervention that took place in a neighboring area.¹⁴ A randomly selected half of all training program applicants were awarded a vocational training voucher worth approximately 35,000 Kenyan shillings (about US \$460), an amount sufficient to fully (or almost fully) cover the tuition costs for most public or private vocational education programs in Kenya. Voucher winners attended courses during 2009-2011. In 2013 and 2014, a random half of voucher winners and voucher non-winners were given an unconditional cash grant worth Ksh 20,000 (about US \$230 at the time). In the present analysis, we consider voucher winners as “treated” with respect to the vocational training program if they were randomly selected to receive a voucher, and the cash grant winners as “treated” with respect to the cash grant program if they were selected to

¹⁴ We do not provide more details on this program here, as it is not analyzed separately in the proposed study. For more details on this program, see Kremer, Miguel, and Thornton (2009).

receive a grant.

Ongoing research on these programs find evidence of human capital effects for the vocational training intervention, but limited labor market effects. Those receiving the cash grant had short-run gains that appear to have dissipated over time. Given these, it is unclear what we should expect to see now in terms of demand for storybooks.¹⁵

The vocational training and cash grants sample consists of individuals who previously participated in either the PSDP or the GSP, and applied to participate in the vocational training voucher program which launched in 2009. For this sample, we proceed similarly as for the PSDP sample. The main estimating equation will interact indicators vocational training and cash grant treatment status with the any reading intervention indicator from Equation 1:

$$Y_i = \alpha_0 + \alpha_1 AnyTreat_i + \alpha_2 T_i^{VOCED} + \alpha_3 T_i^{VOCED} * AnyTreat_i + \alpha_4 T_i^{SCY} + \alpha_5 T_i^{SCY} * AnyTreat_i + X_i' \lambda + \varepsilon_i, \quad (1b)$$

As before, Y_i is an outcome for individual i . The binary variable T_i^{VOCED} indicates whether individual i is in the vocational training treatment group. The binary variable T_i^{SCY} indicates whether individual i is in the cash grant treatment group. Note that some individuals were in only one treatment group (or none), while others were in both voucher and cash grant treatment groups. We will include a vector of control variables X_i' , containing the variables used for stratification during the reading promotion randomization: PSDP/ GSP treatment group, gender of KLPS parent and baseline grade of KLPS parent. We will also include an indicator for PSDP or GSP program participation, gender of interviewer and months elapsed since the start of the survey wave.¹⁶ We will calculate standard errors that are robust for heteroscedasticity.

The main coefficients of interest are α_3 and α_5 . The main hypothesis tests will be two-sided t-tests for i) the null hypothesis that $\alpha_3=0$, which tests for differential effects of the reading intervention by vocational education treatment status, and ii) the null hypothesis that $\alpha_5=0$, which tests for differential effects of the reading intervention by SCY treatment status.

For completeness and parallelism with previous sections, we also estimate an analogous equation to Equation 2:

$$Y_i = \beta_0 + \beta_1 T_i^F + \beta_2 T_i^1 + \beta_3 T_i^2 + \beta_4 T_i^{VOCED} + \beta_5 T_i^{VOCED} * T_i^F + \beta_6 T_i^{VOCED} * T_i^1 + \beta_7 T_i^{VOCED} * T_i^2 + \beta_8 T_i^{SCY} + \beta_9 T_i^{SCY} * T_i^F + \beta_{10} T_i^{SCY} * T_i^1 + \beta_{11} T_i^{SCY} * T_i^2 + X_i' \theta + \varepsilon_i. \quad (2b)$$

As in Equation 2, the binary variables T_i^F , T_i^1 , and T_i^2 indicate whether individual i was randomly assigned into the full subsidy, subsidy to purchase one book, or subsidy to purchase two books, respectively. The remaining variables are defined as in Equation 1b.

¹⁵ For more details on the vocational training voucher program, see Hicks et al. (2015b); for more details on the cash grant program, see Hicks et al., (2015a). As described in these references, there were two variants of the vocational education voucher, but both are considered treatment here for simplicity.

¹⁶ If we continue the intervention in Wave 2, we will also include an indicator for surveys conducted during wave 2.

The main coefficients of interest are β_5 , β_6 , β_7 , β_9 , β_{10} , and β_{11} , for Equation 2b, which capture differential effects of the reading intervention by vocational training treatment status and cash grant treatment status. We will conduct two-sided t-tests on the null-hypothesis that $\beta_5=0$, $\beta_6=0$, $\beta_7=0$, $\beta_9=0$, $\beta_{10}=0$, and $\beta_{11}=0$, and tests comparing the magnitudes of the coefficients to one another. We will also conduct F-tests of the joint significance of (i) vocational education interaction terms (β_5 , β_6 , and β_7), and (ii) SCY treatment interaction terms (β_9 , β_{10} , and β_{11}).

Of secondary interest is the magnitude and significance of the coefficients on the indicator for vocational training and SCY treatment status (α_2 and α_4 , respectively in Equation 1b, and β_4 and β_8 in Equation 2b), which captures whether these treatments increase the level of outcomes of interest in this pre-analysis plan. We will also test the null hypothesis that there is no effect of vocational training and SCY treatment status on reading and investment outcomes using a joint test significance of all terms. For vocational training, with Equation 1b, this is an F-test of the joint significance of α_2 and α_3 ; for Equation 2b, this is an F-test of the joint significance of β_4 , β_5 , β_6 , and β_7 . For SCY, with Equation 1 this is an F-test of the joint significance of α_4 and α_5 , and for Equation 2b, this is an F-test of the joint significance of β_8 , β_9 , β_{10} , and β_{11} .

We may explore interaction effects between the vocational training voucher and cash grant, but anticipate limited statistical power given the smaller sample size for individuals that received both interventions, and thus do not consider this to be primary.

2.4 Heterogeneous Effects

In additional analyses beyond the main regression specification above, we will investigate heterogeneity in two dimensions. First, we estimate heterogeneous treatment effects based on household socioeconomic and demographic variables of particular interest.

- KLPS parent education level, split above and below median years of educational attainment (KLPS-4 I Module, Section 13)
- Total income of KLPS household, split above and below median (KLPS-4 E+ Module, Sections 15.1-15.4)
- Urban residence of KLPS respondent, where urban status is defined as those living in Nairobi, Mombasa or Kampala (KLPS-4 I Module, question 3.1). We may also study effects based on the amount of time spent in urban areas, and including those that live in towns as well.
- Gender of storybook child (KLPS-4 I Module child selection)
- Gender of KLPS parent (KLPS-4 I Module, Section 1)
- Total number of children in household (KLPS-4 E+ household roster, Section 4 Question 10)¹⁷

We estimate effects by interacting these covariates with the treatment indicator variables in Equations 1 and 2.¹⁸ We note that some of these dimensions may have been affected by human

¹⁷ We may also look at the number of biological children reported in the KLPS-4 I Module, Section 4, though not all biological children may live in the same household.

¹⁸ If we find limited evidence of heterogeneous effects, we may focus on reporting results from Equation 1.

capital treatments for KLPS respondents, which may affect interpretation of our estimates, and we may also look at heterogeneity for the human capital complementarities by interacting these variables with our measures of heterogeneity. We may also explore other dimensions of heterogeneity, using KLPS-4 (baseline) data described in Section 1.4.1, in secondary exploratory tests.

To assess statistical significance for heterogeneous effects, we plan to compute the False Discovery Rate (FDR) adjusted q-values across the six dimensions of heterogeneity following Anderson (2008), Casey et al. (2012) and the references cited therein.

Second, we look at heterogeneity by the randomly-assigned subsidy levels, including full subsidies (free books). We first do this by looking at pooling subsidy levels across treatment arms 1 and 2, estimating the following equation:

$$Y_i = \gamma_0 + \gamma_1 T_i^F + \gamma_2 T_i^H + \gamma_3 T_i^M + \gamma_4 T_i^L + X_i' \lambda + \varepsilon_i \quad (3)$$

Here, T_i^H , T_i^M , and T_i^L denote respondents assigned to high, medium and low subsidies, respectively. The rest of the terms are defined as above, and we follow weighting and controls as outlined in Section 2.1.

If we find significant effects, we may further explore subsidy level by treatment arm interaction effects.

2.5 Tracking and attrition by group

We will follow procedures outlined in Baird et al. (2019) for checking for balance and attrition, and for handling problematic levels of differential attrition. For this study, we will check tracking rates for a) the administration of the intervention and b) conducting follow-up surveys by child reading promotion treatment arm. We will also check to ensure that characteristics such as original program treatment statuses and demographic variables are balanced across treatment arms (see Baird et al. 2019 for a list of variables we plan to include).

3. Outcomes

We estimate effects for three families of outcomes. For each family, we define a mean effects index that serves as a summary measure for the family. To account for multiple hypothesis testing, we will calculate False Discovery Rate (FDR) adjusted q-values following Anderson (2008), Casey et al. (2012) and the references therein across the three mean effects index. When looking at outcomes within each family, we calculate FDR adjusted q-values based on the number of outcomes within each family.

3.1 Family 1: Storybook Ownership

Our first family looks at storybook ownership, in order to document whether child reading

materials are indeed higher for those in treatment groups. We construct a mean effects index of the following two outcomes:

1. Indicator for purchased any additional storybooks (KSI Follow-up Question 2)
2. Total number of storybooks in the household (Question 3)

3.2 Family 2: Reading Practices

Our main measure of reading practices is a mean effects index of the following outcomes:

1. Number of days any adults / teenagers read to child at home in the last week (KSI Follow-up Question 4)
2. Number of minutes any adults/teenagers spent reading to child yesterday (coded as 0 for those with no minutes reading in the previous day) (Question 4a)
3. Number of days child spent reading by themselves in the last week (Question 5)
4. Number of minutes child spent reading by themselves in the previous day (Question 5a)

We will also look at the following secondary outcomes related to attitudes and knowledge of reading practices:

1. Indicator for correctly indicating at least one way to make reading with their children interactive (KSI Follow-up Question 9)
2. Indicator for correctly giving the minimum recommended time to spend reading each day (KSI Follow-up Question 10)
3. Indicator for correctly naming the main character in (at least one of) the storybooks received as part of the intervention, among those in treatment arms (KSI Follow-up Questions 1a and 1b, where those that do not recall receiving a storybook (1a) are coded as zero)

Secondary outcomes 1 and 2 can be compared between treatment and control groups using the regression specifications outlined above. As secondary outcome 3 is only collected from those in treatment groups, we can only compare this across treatment arms. The level of this outcome is also of interest.¹⁹ We will correlate these secondary measures with other outcomes to understand their relationship with attitudes and behaviors.

3.3 Family 3: Child Investments

This family of outcomes looks at additional education-related outcomes for children, which may be less directly influenced by the child reading promotion intervention, but nonetheless provide an indication of the households' overall level of investment in children.

The main measure is a mean effects index of the following outcomes:

1. Indicator for being enrolled in school / ECD program (KSI Follow-up Question 6)

¹⁹ It should be noted, however, that in some cases the phone survey respondent may not be the principal household member reading with the child, and thus may not be able to answer these questions despite the child being read to by adults within the household.

2. Number of days attending school / ECD out of the last 5 days school was in session (Question 6a)

3.4 Additional analyses

As secondary analysis, we estimate treatment-on-treated effects. We generate an indicator equal to one for households that received or purchased a storybook, then estimate two-stage least squares regressions, instrumenting for take-up with assignment to any treatment group.²⁰

We also study whether effects differ based on the type of storybook selected. While these may be endogenous to household characteristics, they nonetheless provide an interesting window into potential mechanisms. First, we interact an indicator for households that received or purchased a storybook with an indicator for whether an English storybook was selected, including both indicators and their interaction in a regression. Second, we do the same with the difficulty of the book selected, where we create an indicator equal to one for the three “hardest” books, based on their reading level as classified by the publisher.

We also anticipate conducting several exploratory analyses. We will explore heterogeneity by the age of the storybook child and/or other children in the household.

We note that we anticipate possibly carrying out further analyses beyond those included in this document; hence, this document is not intended to be comprehensive or to preclude additional or exploratory analysis.

²⁰ We may further explore alternate specifications taking into account treatment group and subsidy levels in the first stage.

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Appendix I: Intervention Module

Log Number: | | | | |

PC-Int

**KLPS-KIDS
WAVE 1
CHILD READING PROMOTION
INTERVENTION SCRIPT**

VERSION: OCTOBER 24, 2018 — ENGLISH

CHILD ID
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This survey should be administered to the PRIMARY CAREGIVER of the child identified above. This should only be administered to the primary caregiver of the storybook child.

DO NOT READ out loud, but please enter the following pre-assigned information:

A. GROUP NUMBER: (Group 1, Group 2, Group 3, or Group 4)

If Group 1 or 2, please enter the following:

B. SUBSIDY LEVEL (Ksh 150, Ksh 100, Ksh 50)

If Group 1, please proceed to Version 1. If Group 2, proceed to Version 2. If Group 3, proceed to Version 3. If Group 4, go to conclusion of PC Module.

VERSION 1

Say: We are happy to inform you that you have been randomly selected to receive a gift of **Ksh 150**. We will send you this gift through M-Pesa after the survey.

Read: We would now like to tell you about the work we do related to education. As you may know, reading can be very useful for your children's growth and development. It is also a fun activity that you can do with your children. We do not work for a storybook company, but we are trying to make more children's storybooks available to families with young children, by offering storybooks in your area at a discounted price. The market value of each of these storybooks is Ksh 195. However, we would like to offer you the opportunity to buy one today for a reduced price instead – whichever price is randomly selected by this tablet. If you do wish to buy a storybook, you could use the money that you just earned in order to purchase the storybook, and we will send you the remaining balance through M-Pesa.

Read: The tablet will now randomly select your reduced price for the storybook.

Congratulations! You have been offered a reduced storybook price of **[PRE-ASSIGNED SUBSIDY LEVEL]**.

Read: Now I would like to show you our storybook selection for your children. We have four available Kiswahili options and two available English options. You are welcome to take a minute to look through the storybooks and decide whether you want to purchase one, and if so, which one.

Give respondent 5 minutes to look through the storybooks. When they have finished looking (or when the 5 minute time limit is up) please continue to Question 1a.

1a. Would you like to purchase a storybook today for your children? (1=Yes, 2=No)

If YES, continue to 1b. Otherwise skip to Question 2.

1b. Which storybook would you like to purchase?

[1=Nyimbo zetu (Swa), 2=Nikicheka, anachekeka (Swa), 3=Sungura Mjanja (Swa), 4= Mwanasayansi (Swa), 5= A New King (Eng), 6=Goat Matata (Eng)]

1c. Why did you choose to purchase this storybook? ***Please do not read the answer options out loud, but select all that apply.***

I like the pictures.

I like the story/ topic.

My children like the story/ topic.

My children can relate to this story/ topic.

I want my children to learn from this storybook.

No reason.

Other (specify) _____

1d. **DO NOT read the following question out loud, but please select all that apply:**

Who selected or helped to select the storybooks?

- Primary Caregiver (PC)
- Spouse of PC
- KLPS child of PC
- Other children in household
- Other household member
- Other adult (non-household member)
- Other child (non-household member)

Skip to INFORMATION SCRIPT A.

2. Why don't you want to purchase a storybook? **Please do not read the answer options out loud, but select all that apply.**

- I need the money for something else.
- I can get cheaper storybooks elsewhere.
- My children already have storybooks at home.
- My children are not interested in reading storybooks.
- I am not interested in reading storybooks.
- Storybooks are already provided by schools.
- I do not know how to read.
- I don't have time to read to my children.
- I don't like any of these storybook options.
- Don't know/ no reason.
- Other (specify) _____

Skip to INFORMATION SCRIPT B.

INFORMATION SCRIPT A

Please put storybooks away for the Information Script. Keep the respondent engaged during the information script by making eye contact and using a dynamic voice. Read out loud.

Now I would like to give you some information about reading with your children. Research has shown that reading to your young children, especially those who are not yet reading themselves, can help them love books and love learning. It also gives you and your children something special to do together. Try to read with your children every day - even 10 or 15 minutes is good. Pick a time when your children are not tired or hungry, and when you can give them your full attention. When reading together, you can sit side-by-side or with your children on your lap.

When you read the story, point to the words as you read. Stop and talk about the words, and point to where the words are in the picture. Even if you cannot read yourself, you can still use the pictures to create your own story. If some of your children know a word, let them sound it out. Listen to your children and encourage them to talk about the story. Make the experience interactive by asking them questions about the story. For example: "What do you see here in this picture?", "Where have you seen these things before?", "What is this person feeling?", "Why do they feel that way?", "What is this person doing?", "Who is your favorite character?". When your children respond, repeat what your children say and add more details. Connect what is happening in the story to previous experiences for your children.

It is normal for your children to want to read the story over and over again, so be patient. When you have fun, your children will have fun too!

Books are precious, so you should keep this storybook in the house and make sure your children treat it with care. If you like this storybook, you can get more storybooks just like this at your nearest bookstore. If you have a smart phone or tablet you can also download stories for free by visiting the African Storybook website. Here is a poster with a link to the African Storybook website and some information about reading, that you can hang on your wall as a reminder.

Give respondent poster.

To summarize:

- Remember to read with your children every day! Reading will help them to love learning.
- Even 10 to 15 minutes is good.
- Ask your children questions about the story, and point to where the words are in the picture.

Go to end of Information Script B.

INFORMATION SCRIPT B

Please put storybooks away for the Information Script. Keep the respondent engaged during the information script by making eye contact and using a dynamic voice. Read Out Loud.

We would like to give you some information about reading with your children just for your reference. Research has shown that reading to your young children, especially those who are not yet reading themselves, can help them love books and love learning. It also gives you and your children something special to do together. Try to read with your children every day - even 10 or 15 minutes is good. Pick a time when your children are not tired or hungry, and when you can give them your full attention. When reading together, you can sit side-by-side or with your children on your lap.

When you read a storybook, point to the words as you read. Stop and talk about the words, and point to where the words are in the picture. Even if you cannot read yourself, you can still use the pictures to create your own story. If some of your children know a word, let them sound it out. Listen to your children and encourage them to talk about the story. Make the experience interactive by asking them questions about the story. For example: "What do you see here in this picture?", "Where have you seen these things before?", "What is this person feeling?", "Why do they feel that way?", "What is this person doing?", "Who is your favorite character?". When your children respond, repeat what your children say and add more details. Connect what is happening in the story to previous experiences for your children.

It is normal for your children to want to read a story over and over again, so be patient. When you have fun, your children will have fun too!

Books are precious, so you should keep any books in the house and make sure your children treat them with care. If you decide to purchase a storybook later, you can get other storybooks just like these at your nearest bookstore. If you have a smart phone or tablet you can also download stories for free by visiting the African Storybook website. Here is a poster with a link to the African Storybook website and some information about reading, that you can hang on your wall as a reminder.

Give respondent poster.

To summarize:

- Remember to read with your children every day! Reading will help them to love learning.
- Even 10 to 15 minutes is good.
- Ask your children questions about the story, and point to where the words are in the picture.

NOTE: DO NOT ASK the respondent if they want to purchase a storybook after reading the information script. However, if they change their mind and decide to purchase a storybook, please answer **Question 3** below.

3. Which storybook did they decide to purchase *after* the script was read? Remember that the respondent can only purchase **one storybook**.

[1=Nyimbo zetu (Swa), 2=Nikicheka, anacheka (Swa), 3=Sungura Mjanja (Swa), 4= Mwanasayansi (Swa), 5= A New King (Eng), 6=Goat Matata (Eng)]

END INTERVENTION FOR GROUP 1. GO TO PC MODULE CONCLUSION.

VERSION 2

Say: We are happy to inform you that you have been randomly selected to receive a gift of **Ksh 300**. We will send you this gift through M-Pesa after the survey.

Read: We would now like to tell you about the work we do related to education. As you may know, reading can be very useful for your children's growth and development. It is also a fun activity that you can do with your children. We do not work for a storybook company, but we are trying to make more children's storybooks available to families with young children, by offering storybooks in your area at a discounted price. The market value of each of these storybooks is Ksh 195. However, we would like to offer you the opportunity to buy up to two today for a reduced price instead – whichever price is randomly selected by this tablet. If you do wish to buy storybooks, you could use the money that you just earned in order to purchase one or two storybooks, and we will send you the remaining balance through M-Pesa.

Read: The tablet will now randomly select your reduced price for the storybooks.

Congratulations! You have been offered a reduced storybook price of Ksh [**PRE-ASSIGNED SUBSIDY LEVEL**].

Read: Now I would like to show you our storybook selection for your children. We have four available Kiswahili options and two available English options. You are welcome to take a minute to look through the storybooks and decide whether you want to purchase one or two, and if so, which storybooks.

Give respondent 5 minutes to look through storybooks. When they have finished looking (or when the 5 minute time limit is up) please continue to Question 1a.

1a. Would you like to purchase storybooks today for your children? Remember that you can choose up to two at this subsidized price. (1=Yes, 2=No)

If YES, continue to 1ai. Otherwise skip to Question 2.

1ai. How many storybooks would you like to purchase? **May choose 1 or 2.**

1b. Which storybook(s) would you like to purchase? **Select up to 2.**
[1=Nyimbo zetu (Swa), 2=Nikicheka, anacheka (Swa), 3=Sungura Mjanja (Swa), 4= Mwanasayansi (Swa), 5= A New King (Eng), 6=Goat Matata (Eng)]

1c. Why did you choose to purchase the storybook(s)? **Please do not read the answer options out loud, but select all that apply.**

- I like the pictures.
 I like the story/ topic.
 My children like the story/ topic.
 My children can relate to this story/ topic.
 I want my children to learn from this storybook.
 No reason.
 Other (specify) _____

1d. **DO NOT read the following question, but please select all that apply:**

Who selected or helped to select the storybooks?

- Primary Caregiver (PC)
 Spouse of PC
 KLPS child of PC

- Other children in household
- Other household member.
- Other adult (non-household member)
- Other child (non-household member)

Skip to INFORMATION SCRIPT A.

2. Why don't you want to purchase a storybook? ***Please do not read the answer options out loud, but select all that apply.***

- I need the money for something else.
- I can get cheaper storybooks elsewhere.
- My children already have storybooks at home.
- My children are not interested in reading storybooks.
- I am not interested in reading storybooks.
- Storybooks are already provided by schools.
- I do not know how to read.
- I don't have time to read to my children.
- I don't like any of these storybook options.
- Don't know/ no reason.
- Other (specify) _____

Skip to INFORMATION SCRIPT B.

INFORMATION SCRIPT A

Please put storybooks away for the Information Script. Keep the respondent engaged during the information script by making eye contact and using a dynamic voice. Read out loud:

Now I would like to give you some information about reading with your children. Research has shown that reading to your young children, especially those who are not yet reading themselves, can help them love books and love learning. It also gives you and your children something special to do together. Try to read with your children every day - even 10 or 15 minutes is good. Pick a time when your children are not tired or hungry, and when you can give them your full attention. When reading together, you can sit side-by-side or with your children on your lap.

When you read a story, point to the words as you read. Stop and talk about the words, and point to where the words are in the picture. Even if you cannot read yourself, you can still use the pictures to create your own story. If some of your children know a word, let them sound it out. Listen to your children and encourage them to talk about the story. Make the experience interactive by asking them questions about the story. For example: "What do you see here in this picture?", "Where have you seen these things before?", "What is this person feeling?", "Why do they feel that way?", "What is this person doing?", "Who is your favorite character?". When your children respond, repeat what your children say and add more details. Connect what is happening in the story to previous experiences for your children.

It is normal for your children to want to read stories over and over again, so be patient. When you have fun, your children will have fun too!

Books are precious, so you should keep storybooks in the house and make sure your children treat them with care. If you like these storybooks, you can get more storybooks just like this at your nearest bookstore. If you have a smart phone or tablet you can also download stories for free by visiting the African Storybook website. Here is a poster with a link to the African Storybook website and some information about reading, that you can hang on your wall as a reminder.

Give respondent poster.

To summarize:

- Remember to read with your children every day! Reading will help them to love learning.
- Even 10 to 15 minutes is good.
- Ask your children questions about the story, and point to where the words are in the picture.

NOTE: DO NOT ASK the respondent if they want to purchase a storybook after reading the information script. However, if they change their mind and decide to purchase a storybook or purchase an additional storybook, please answer ***Question 3*** below. Remember they can only choose up to two storybooks.

Go to end of Information Script B.

INFORMATION SCRIPT B

Please put storybooks away for the Information Script. Keep the respondent engaged during the information script by making eye contact and using a dynamic voice. Read Out Loud.

We would like to give you some information about reading with your children just for your reference. Research has shown that reading to your young children, especially those who are not yet reading themselves, can help them love books and love learning. It also gives you and your children something special to do together. Try to read with your children every day - even 10 or 15 minutes is good. Pick a time when your children are not tired or hungry, and when you can give them your full attention. When reading together, you can sit side-by-side or with your children on your lap.

When you read a storybook, point to the words as you read. Stop and talk about the words, and point to where the words are in the picture. Even if you cannot read yourself, you can still use the pictures to create your own story. If some of your children know a word, let them sound it out. Listen to your children and encourage them to talk about the story. Make the experience interactive by asking them questions about the story. For example: “What do you see here in this picture?”, “Where have you seen these things before?”, “What is this person feeling?”, “Why do they feel that way?”, “What is this person doing?”, “Who is your favorite character?”. When your children respond, repeat what your children say and add more details. Connect what is happening in the story to previous experiences for your children.

It is normal for your children to want to read a story over and over again, so be patient. When you have fun, your children will have fun too!

Books are precious, so you should keep any storybooks in the house and make sure your children treat them with care. If you decide to purchase a storybook later, you can get other storybooks just like these at your nearest bookstore. If you have a smart phone or tablet you can also download stories for free by visiting the African Storybook website. Here is a poster with a link to the African Storybook website and some information about reading, that you can hang on your wall as a reminder.

Give respondent poster.

To summarize:

- Remember to read with your children every day! Reading will help them to love learning.
- Even 10 to 15 minutes is good.
- Ask your children questions about the story, and point to where the words are in the picture.

NOTE: DO NOT ASK the respondent if they want to purchase a storybook, or an additional storybook after reading the information script. However, if they change their mind and decide to purchase a storybook or purchase an additional storybook, please answer **Question 3** below.

3. Which storybook(s) did they decide to purchase *after* the script was read? Remember that the respondent can only purchase up to **two storybooks**.

[1=Nyimbo zetu (Swa), 2=Nikicheka, anacheka (Swa), 3=Sungura Mjanja (Swa), 4= Mwanasayansi (Swa), 5= A New King (Eng), 6=Goat Matata (Eng)]

END INTERVENTION FOR GROUP 2. GO TO PC MODULE CONCLUSION.

VERSION 3

Say:

We are happy to inform you that you have been randomly selected to receive a gift of a free storybook. We do not work for a storybook company, but we are trying to make more children's storybooks available to families with young children, by offering storybooks to selected participants for free.

We have four available Kiswahili storybooks and two available English storybooks. Please feel free to take a minute to look through the storybooks and decide which one you would like for free.

Give respondent 5 minutes to look through storybooks. When they have finished looking (or when the 5 minute time limit is up) please continue to Question 1a.

1a. Which storybook would you like for free today?

[1=Nyimbo zetu (Swa), 2=Nikicheka, anacheka (Swa), 3=Sungura Mjanja (Swa), 4= Mwanasayansi (Swa), 5= A New King (Eng), 6=Goat Matata (Eng), 8=Refusal to accept storybook]

If refuse to accept storybook, skip to Question 2. Otherwise CONTINUE to Question 1b.

1b. Why did you select this storybook? ***Please do not read the answer options out loud, but select all that apply.***

- I like the pictures.
- I like the story/ topic.
- My children like the story/ topic.
- My children can relate to this story/ topic.
- I want my children to learn from this storybook.
- No reason.
- Other (specify) _____

1c. ***DO NOT read the following question, but please select all that apply:***

Who selected or helped to select the storybook?

- Primary Caregiver (PC)
- Spouse of PC
- KLPS child of PC
- Other children in households
- Other household member
- Other adult (non-household member)
- Other child (non-household member)

2. Why don't you want a free storybook? ***Please do not read the answer options out loud, but select all that apply.***

- My children already have storybooks at home.
- My children are not interested in reading storybooks.
- I am not interested in reading storybooks.
- Storybooks are already provided by schools.
- I do not know how to read.
- I don't have time to read to my children.
- I don't like any of these storybook options.
- Don't know/ no reason.
- Other (specify) _____

Skip to INFORMATION SCRIPT B.

INFORMATION SCRIPT A

Please put storybooks away for the Information Script. Keep the respondent engaged during the information script by making eye contact and using a dynamic voice. Read out loud.

Now I would like to give you some information about reading with your children. Research has shown that reading to your young children, especially those who are not yet reading themselves, can help them love books and love learning. It also gives you and your children something special to do together. Try to read with your children every day - even 10 or 15 minutes is good. Pick a time when your children are not tired or hungry, and when you can give them your full attention. When reading together, you can sit side-by-side or with your children on your lap.

When you read the story, point to the words as you read. Stop and talk about the words, and point to where the words are in the picture. Even if you cannot read yourself, you can still use the pictures to create your own story. If some of your children know a word, let them sound it out. Listen to your children and encourage them to talk about the story. Make the experience interactive by asking them questions about the story. For example: “What do you see here in this picture?”, “Where have you seen these things before?”, “What is this person feeling?”, “Why do they feel that way?”, “What is this person doing?”, “Who is your favorite character?”. When your children respond, repeat what your children say and add more details. Connect what is happening in the story to previous experiences for your children.

It is normal for your children to want to read the story over and over again, so be patient. When you have fun, your children will have fun too!

Books are precious, so you should keep this storybook in the house and make sure your children treat it with care. If you like this storybook, you can get more storybooks just like this at your nearest bookstore. If you have a smart phone or tablet you can also download stories for free by visiting the African Storybook website. Here is a poster with a link to the African Storybook website and some information about reading, that you can hang on your wall as a reminder.

Give respondent poster.

To summarize:

- Remember to read with your children every day! Reading will help them to love learning.
- Even 10 to 15 minutes is good.
- Ask your children questions about the story, and point to where the words are in the picture.

INFORMATION SCRIPT B

Please put storybooks away for the Information Script. Keep the respondent engaged during the information script by making eye contact and using a dynamic voice. Read out loud.

We would like to give you some information about reading with your children just for your reference. Research has shown that reading to your young children, especially those who are not yet reading themselves, can help them love books and love learning. It also gives you and your children something special to do together. Try to read with your children every day - even 10 or 15 minutes is good. Pick a time when your children are not tired or hungry, and when you can give them your full attention. When reading together, you can sit side-by-side or with your children on your lap.

When you read a storybook, point to the words as you read. Stop and talk about the words, and point to where the words are in the picture. Even if you cannot read yourself, you can still use the pictures to create your own story. If some of your children know a word, let them sound it out. Listen to your children and encourage them to talk about the story. Make the experience interactive by asking them questions about the story. For example: “What do you see here in this picture?”, “Where have you seen these things before?”, “What is this person feeling?”, “Why do they feel that way?”, “What is this person doing?”, “Who is your favorite character?”. When your children respond, repeat what your children say and add more details. Connect what is happening in the story to previous experiences for your children.

It is normal for your children to want to read a story over and over again, so be patient. When you have fun, your children will have fun too!

Books are precious, so you should keep any storybooks in the house and make sure your children treat them with care. If you decide to purchase a storybook later, you can get other storybooks just like these at your nearest bookstore. If you have a smart phone or tablet you can also download stories for free by visiting the African Storybook website. Here is a poster with a link to the African Storybook website and some information about reading, that you can hang on your wall as a reminder.

Give respondent poster.

To summarize:

- Remember to read with your children every day! Reading will help them to love learning.
- Even 10 to 15 minutes is good.
- Ask your children questions about the story, and point to where the words are in the picture.

NOTE: For those respondents who refused the book, ***DO NOT ASK*** the respondent if they want to purchase a storybook after reading the information script. However, if they change their mind and decide to purchase a storybook, please answer ***Question 3*** below.

3. Which storybook did they choose *after* the script was read? Remember that the respondent can only purchase **one storybook**.

[1=Nyimbo zetu (Swa), 2=Nikicheka, anacheka (Swa), 3=Sungura Mjanja (Swa), 4= Mwanasayansi (Swa), 5= A New King (Eng), 6=Goat Matata (Eng)]

END INTERVENTION FOR GROUP 3. GO TO PC MODULE CONCLUSION.

Appendix II: Poster

English Translation:

“Remember to read with your children today.

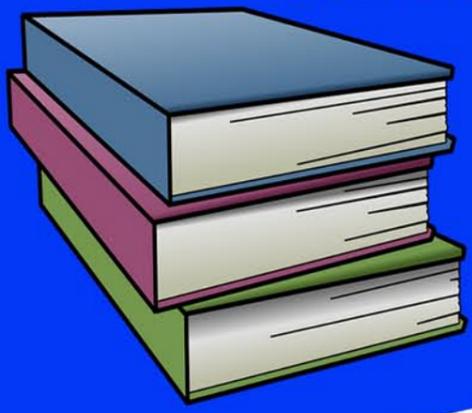
Reading with your children helps them love learning.

Ask your children questions about the story: When? Where? Who? How? What?

Point to where the words are in the picture

Even 10 to 15 minutes is good”

KUMBUKA **KUSOMA** PAMOJA NA **WATOTO** WAKO LEO



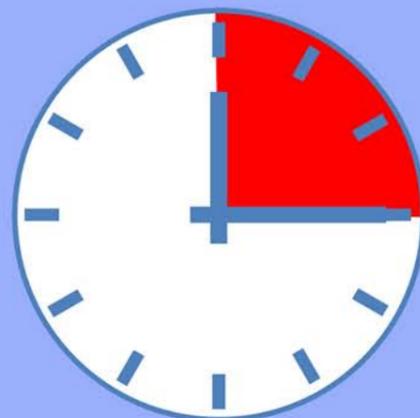
Kusoma pamoja na watoto wako huwasaidia kupenda masomo



Uliza watoto wako maswali kuhusu hadithi

Onyesha mahali ambapo maneno yapo kwenye picha

Hata dakika 10 hadi 15 ni nzuri



Follow the link below on your smartphone or tablet to download more storybooks for free
<https://www.africanstorybook.org>
Normal internet browsing charges will apply if one visits this site



ipa
INNOVATIONS FOR
POVERTY ACTION

Appendix III: SMS Reminder Text

"Habari! Huu ni ujumbe wa bure kutoka IPA. Tafadhali usijibu. Tungependa kukukumbusha kusoma pamoja na watoto wako leo. Kusoma pamoja na watoto wako huwasaidia kupenda masomo. Hata dakika 10 hadi 15 ni nzuri!"

English Translation: "Hello! This is a free message from IPA. Please do not respond. We would like to remind you to read with your children today. Reading together with your children helps them love learning. Even 10 or 15 minutes is good!"

Appendix IV: KSI Module (follow-up phone survey)

SECTION 1. Pre-Interview Information and Consent

Fill in this information before the interview FROM IDENTITY SECTION OF TRACKING SHEET:

1. Identification Number of Focus Respondent (Pupil ID):

2. Pupil Family Name: _____

3. Pupil (a) Name 1 / (b) Name 2: (a) _____ / (b) _____

4. Pupil Gender: (1=Male, 2=Female)

5. Baseline Program: **Response is either "PSDP" or "GSP".**

6. Baseline Pupil School ID / Name: / _____

7. Baseline Pupil Standard: **Standard should be between 2 and 7 for those in PSDP, or between 5 and 6 for those in GSP.**

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

9. Time start interview: (24 hr clock) :

10. Interviewer ID:

10a. Interviewer name: (first) _____ / (surname) _____

**First, please call the Primary Caregiver [PC NAME] at the following phone number:
[PC PHONE NUMBER]**

READ:
Hello, I am [name] from IPA, in [Busia Town/ Nairobi].

0a. Is this [PC name]?

(1= Yes, 2 = No)

If yes skip to Consent Statement before question 0a.

- If no:**
- **First ask if the PC is available to speak.**
 - **If they are not available, you may continue the interview with a spouse of PC or other caregiver that has spent time with the child in the last week. (continue to Consent statement and verification of time spent with child)**

Record name of the person you are speaking with and their relationship with the child:

Name: _____
Relationship with Child: _____

If PC or Spouse

Consent Statement

Read: We visited your household in [month of survey] to interview you, and to ask your child to participate in a series of child assessment exercises. Today, we wanted to conduct a short follow-up interview to ask you a few additional questions about the time you spent with [Child Name] in the last week. We will keep your and the children's study data as confidential as possible. If we publish or present results of this study, we will not use individual names or other personally identifiable information. To help protect confidentiality, any information that identifies you will be separated from your other answers. Your identifying information will be replaced with a code, so that only our researchers will be able to track your answers back to you. We plan to keep this identifying information for the foreseeable future, in case we want to conduct future studies, but we will follow the same steps we just described to keep it as confidential as possible. Participation in research is completely voluntary. You have the right to decline to participate or to withdraw at any point in this study without penalty. To thank you for your participation, we will offer you and the participating children a gift following the interview.

We anticipate that this survey will take less than 10 minutes of your time, and as a small token of our appreciation we would like to offer you 50 KES of airtime following the completion of this survey.

If Non-PC and Non-Spouse

Consent

Read: Hello, I am [name] from IPA, in [Busia Town / Nairobi]. IPA is an organization that was established by the research team who formerly worked with ICS on health and education projects in Kenya. I work with a research team from the University of California, Berkeley, in the United States. We visited your household in [month of survey] to interview the care giver of [Child Name] and asked [Child Name] to participate in a series of child assessment exercises. We are speaking with you because you are currently the guardian or caregiver of [Child Name] who is a child of one of the individuals who participated in or applied to these IC and IPA programs. Today, we wanted to conduct a short follow-up interview to ask you a few additional questions about the time you spent with [Child Name] in the last week. We anticipate that this survey will take less than 10 minutes of your time, and as a small token of our appreciation we would like to offer you 50 KES of airtime following the completion of this survey.

We will keep your and the children's study data as confidential as possible. If we publish or present results of this study, we will not use individual names or other personally identifiable information. To help protect confidentiality, any information that identifies you will be separated from your other answers. Your identifying information will be replaced

with a code, so that only our researchers will be able to track your answers back to you. We plan to keep this identifying information for the foreseeable future, in case we want to conduct future studies, but we will follow the same steps we just described to keep it as confidential as possible.

Participation in research is completely voluntary. You have the right to decline to participate or to withdraw at any point in this study without penalty. To thank you for your participation, we will offer you and the participating children a gift following the interview. We anticipate that this survey will take less than 10 minutes of your time, and as a small token of our appreciation we would like to offer you 50 KES of airtime following the completion of this survey within 24hrs.

0b. May we have your permission to ask you some questions?
(1=Yes - caregiver agrees to participate, 2= No- caregiver refuses to participate, 3=No – caregiver does not refuse, but is unable to participate).

If yes, skip to question 0c. If no, continue.

0bi. **Describe your impressions of the refusal / inability to participate. Do not ask.**

1 = Wants to reschedule (**skip to “Rescheduling instructions” below**) –

2 = Refusal

10 = Unable to survey

Rescheduling instructions: Please ask the caregiver when they are next available, and then record this information below. End the interview.

||| Other: _____

Refusal Instructions: Please ask the caregiver if there is an alternative person we can contact that has spent time with the child recently and may be able to answer these questions. Record their phone number and relationship with child below. End the interview.

Phone number: _____

Relationship: _____

0c. Have you spent time with [child] in the last week?

If yes, skip to Question 0c (Verification). If no continue.

If the caregiver typically spends time with the child and was only away in the past week, follow the rescheduling instructions above and call caregiver back in a week.

Otherwise, please ask the caregiver if there is an alternative person you can contact that has spent time with the child recently and may be able to answer these questions. Record their phone number below and this person's relationship with child. End the interview.

Phone number: _____

Relationship: _____

Section 2: Interview

If household purchased or received a free storybook from IPA during the storybook intervention [to be prefilled], ask Question 1a. Otherwise skip to Question 2.

1a. Do you remember you or anyone in your household buying or receiving a storybook from IPA in [INSERT MONTH]?
(1 = Yes, 2=No, 3 = DK)

If yes, continue to 1b. Otherwise skip to question 2.

1b. Which of the following is a main character or theme from your storybook(s) from IPA? Please select all that apply. (**Note: Read possible answers out loud, select all that apply**):

- (A) Goat
- (B) Sheep
- (C) Scientist
- (D) Songs
- (E) Mechanic
- (F) Wafula
- (G) Lion
- (H) Rabbit
- (I) Tortoise
- (J) Other (Specify)

2. Did you purchase any children’s storybooks since [INSERT MONTH], when you and your child were interviewed by Innovations for Poverty Action (IPA)? Please DO NOT include any gifts. **Note: DO NOT include any free storybooks received as part of the KLPS storybook intervention.**

(1=Yes, 2=No, 3 = DK)

3. How many storybooks or picture books are currently in your household? Now you can include any storybooks or picture books you received as a gift. Please only include children’s storybook and/or picture books. DO NOT include any textbooks or magazines. **Note: Here you SHOULD include any books that were received for free from IPA as part of the KLPS storybook intervention.** (99 = DK)

Read: Now think about [storybook child] in particular.

4. In the last 7 days, how many days did you or another adult or teenager (age 13 or older) read with [storybook child] at home? Here we mean any form of reading,

including reading from a storybook, textbook, or magazine, as long as you or another adult or teenager were reading to the child. DO NOT include any reading that occurred at school.

(Enter number of days from 0 to 7; 9 = DK) days

If 1 or more days, continue to 4a. Otherwise skip to 5.

4a. Now think about yesterday. How many minutes did you or another adult or teenager (age 13 or older) read with **[storybook child]** yesterday? Here we mean any form of reading, including reading from a storybook, textbook, or magazine, as long as you or another adult or teenager were reading to the child. DO NOT include any reading that occurred at school.

(Enter number of minutes, 99 = DK) minutes

5. In the last 7 days, how many days did **[storybook child]** read by themselves (or with other children) at home. Here we mean any form of reading, including reading from a storybook, textbook, or magazine. DO NOT include any reading that occurred at school.

(Enter number of days from 0 to 7; 9 = DK) days

If 1 or more days, continue to 5a. Otherwise skip to 6.

5a. Now think about yesterday. How many minutes did **[storybook child]** read by themselves or with other children yesterday? Do not include any time spent reading while in school.

(Enter number of minutes, 99 = DK) minutes

6. Is **[storybook child]** currently enrolled in school, including ECD, pre-school, primary school, or another school?

(1=Yes, 2=No, 9=DK)

If yes, continue to question 6a. If no, skip to question 7.

6a. Of the last five days school was in session, how many days did **[child]** attend?

(Enter number of days from 0 to 5, 99 = DK)

7. Why is **[storybook child]** not enrolled in any type of ECD or schooling program?

1=Child is too young

2=Child would not do well / is not smart

3=There is not enough money to pay for it / those programs are too expensive

- 4=Distance/too far away
- 5=Program is not available
- 6=Child refuses/doesn't want to
- 7= Child helps with work around the house/ takes care of other children
- 8=Dropped out
- 9=Other (specify)_____

8. Do you remember you or someone else in your household receiving an SMS message from IPA reminding you to read with your child?

(1 = Yes, 2 = No) |__|

9. How can you make reading with your children interactive?

Did the respondent give an answer including at least one of the following: "ask your children questions about the story", "connect the story to your children's experiences", "encourage them to talk about the story", "read the story together", and/or "let your children sound out the words"? Note: the FR does not need to use the exact language above as long as they are describing one of these concepts.

(1 = Yes, 2 = No, 9 = respondent answered DK)

10. When reading with your children, what is the minimum amount of time in minutes recommended to spend reading? **Enter number of minutes that respondent states. If they answer in a unit other than minutes, probe them to get minutes. (99=DK)** |__|

11a. Do you know of any platform and/or website where you can read storybooks for free, apart from school? **Note: FR should not count books given by IPA** |__|
(1= Yes, 2 = No, 9 = DK)

11b. How many books have you downloaded/ accessed from the African Storybook Project at www.africanstorybook.org |__|

Read: Thank you so much for your time.