

THE IMPACT OF RECIPIENT CHOICE ON AID EFFECTIVENESS*

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Abstract

This study compares the impact of several common development programs (agricultural extension, subsidized agricultural inputs and livestock transfers) to cash transfers equal to the cost of each program. Prior to program delivery, recipients were asked their valuation of each program (i.e., their cash indifference point between cash and the program). Subsequently, recipients were randomly assigned to receive cash or a program. I do not find any appreciable impact of incorporating respondent preferences in aid allocation. There is no discernible relationship between whether a recipient receives their preferred intervention (a program or cash) and components of well-being including consumption, food security, assets, psychological well-being and feelings of autonomy. I do find that cash transfers increase feelings of autonomy and produce more favorable views of the implementing organization than non-cash interventions. Finally, when comparing cash transfers to common development programs, I estimate that the effects of each are roughly equivalent.

JEL Codes: O12, O22, I30, I38

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1 Introduction

In the past three decades, cash transfer programs have spread across countries and continents to reach an estimated 700 million people (Evans, 2017). These programs serve a variety of goals, including increasing human capital (via conditions), providing emergency assistance and furnishing a general social safety net. The rise of cash transfer programs is driven by a combination of philosophical beliefs, political economics and the perception that cash transfers are attractive from a cost-benefit perspective. Development economists have focused in particular on evaluating the costs and benefits of cash transfers. The literature shows that cash transfers can be beneficial to payers in the form of reduced leakage (Muralidharan, Niehaus, and Sukhtankar, 2016), that transfers do not result in unwanted impacts such as increased spending on alcohol or tobacco (Evans and Popova, 2017) and reduced labor supply (Izmalkov, 2004), and that cash transfers have positive impacts on a wide variety of welfare indicators, such as consumption, assets and educational status. The literature has firmly established that cash transfers have significant benefits and limited costs (Bastagli et al., 2016). While cash transfers offer an attractive nominal cost-benefit ratio, this ignores opportunity cost and the relative cost-benefit ratio. The promotion of cash transfers rests on one of two assumptions: that cash transfers outperform other interventions in an absolute sense (e.g., measures of well-being are increased more by providing cash than by other common poverty reduction programs), or that cash is a superior mode of delivering aid (e.g., that enabling recipients to make their own choices is a good in its own right, that doing so leverages private information recipients have to improve the return on resources or that cash transfers are operationally more efficient). This study explicitly explores these assumptions by testing how the impacts of several common development programs (agricultural extension, subsidized agricultural inputs and livestock transfers) compare to equally valuable cash transfers, and by testing whether incorporating recipient preferences into the allocation of aid resources - as cash transfers do - has an effect on measures of well-being.

Direct comparison of cash transfers to alternative uses of aid dollars - necessary to assess the performance comparison assumption - are relatively uncommon, with the exception of the comparison of in-kind food transfers to cash. Hidrobo et al. (2014) compare cash transfers, food vouchers and in-kind food transfers in Ecuador, Uganda and Yemen, finding little impact of different modalities on food consumption overall but some impact on the composition of the basket consumed. Cunha (2014) finds similar results comparing cash to food transfers in Mexico. Other research contrasts studies evaluating the impacts of specific interventions with separate studies assessing the impact of cash transfers. Buera, Kaboski, and Shin (2016), for example, summarize the impacts of studies pertaining to cash transfers to micro-entrepreneurs, the impact of “graduation programs” targeting the very poor and micro-finance programs. Similarly a CGAP study compares studies evaluating the impacts of livelihood development programs, graduation programs and cash transfer programs (Sulaiman et al., 2016). Though illuminating, these studies are hindered by limited comparability across individual studies - each is conducted at separate times, in separate geographies using distinct measurement techniques and evaluating delivery by different implementing organizations. Thus it is difficult to make precise comparisons of the impact of cash transfers vs. alternative poverty reduction programs.

One reason that cash may be a more effective mode of resource delivery than alternative interventions is that aid recipients have private information about which use of aid resources is most likely to reduce poverty. A farmer, for instance, may know her skill and whether subsidized inputs will be of any use. Jack (2013), for example, shows that that landholders induced to reveal their private valuation for a tree-growing contract are more likely to produce surviving trees than randomly selected landholders. Similarly, Berry, Fischer, and Guiteras (2015) show that individuals with high willingness to pay for water filters experience greater benefits from acquisition of the filter.

Another branch of research assesses participatory approaches to development. A common form of this is community participation in the design and monitoring of programs implemented at the community level. By engaging

local communities in targeting and monitoring, government and NGOs acquire better information about program beneficiaries as well as beneficiaries' satisfaction with program implementation (Mansuri and Rao, 2013). Olken (2007) evaluates an intervention where villagers were invited to participate in accountability meetings for a locally provided public good (paved roads) as well as offer anonymous comments about their satisfaction with project implementation. Banerjee et al. (2010) conduct a randomized evaluation of interventions to encourage parental participation in local public schools: information provision, training community members to implement a testing tool for children, and training volunteers to hold remedial reading camps. Other studies simply assesses beneficiary feedback about program performance and value (Hoddinott et al. (2013), Khera (2014), Ghatak, Kumar, and Mitra (2013)). These studies typically find variation in recipient preference and an influence of contextual and program delivery factors on preferences.

Understanding beneficiary preferences may be useful in its own right, but it is also important to understand the impact of respecting such preferences. On the one hand, individuals do know their own skills, constraints, ambitions and preferences better than anyone else. On the other hand, people commonly make decisions that are not necessarily in line with their own long-term preferences (Bertrand, Mullainathan, and Shafir, 2004). Moreover, people may prefer to delegate complex decisions to others. Financial advisors, for example, charge a fee to make investment decisions for others even though they do not beat the market rate of return on average, similarly low-income households may prefer that governments and donors make choices about the allocation of aid dollars even if it comes at a cost in terms of the poverty reduction impact of those resources. While an emerging body of research contrasts the impacts of cash transfers and alternative uses of aid dollars, and another focuses on community participation and understanding beneficiary preferences, to my knowledge there are no studies that evaluate whether incorporating recipient preferences in the allocation of resources alters the welfare impacts of aid spending. This study addresses this topic by assessing whether individuals who express a high valuation for a particular assistance program benefit

more from that program than similar individuals who receive an equally valuable resource. The study also explores how the impacts of several common development programs (agricultural extension, subsidized agricultural inputs and livestock transfers) compare to equally valuable cash transfers. Through a randomized control trial low-income Kenyan were randomly selected to receive either a particular development program (agricultural extension, agricultural inputs, livestock transfers) or an amount of cash equal to the cost of the program. Prior to receiving any intervention, we elicited respondents' indifference point between cash and the program in question. Subsequently, we randomly assigned individuals to receive the program in question or a cash transfer equal to the cost of the program. This design allows us to compare cash transfers to various alternative interventions and to assess whether incorporating beneficiary preferences (measured by their indifference point for the program in question) in aid allocation affects welfare outcomes.

I do not find any appreciable impact of incorporating respondent preferences in aid allocation. Utilizing a variety of measures of recipient preference, there is no discernible relationship between whether a recipient receives their preferred intervention (a program or cash) and components of well-being including consumption, food security, assets, psychological well-being and feelings of autonomy. Regardless of recipients' valuation of or preferences for specific interventions, I do find that cash transfers increase feelings of autonomy and produce more favorable views of the implementing organization than non-cash interventions. Cash transfer recipients score 0.13 standard deviations (CI = 0.05 to 0.20 standard deviations) on an index of autonomy related questions. They are more likely to believe they are trusted by the implementing NGO, that the aid they received was tailored to their needs and that they were treated as an individual. They are less likely to report being treated with contempt by the implementing organization, that they were persuaded to make a particular choice but report that they feel less able to ask the NGO for what they need. When comparing cash transfers equal to the total cost (including overhead) of several common poverty reduction strategies, I can rule out large differences in impacts on economic outcomes. Based on 95% confidence in-

tervals, cash transfer recipients consume no more than ~ 4.25 USD more per person per month ($\sim 10\%$ of mean consumption) than program recipients and score no higher than 0.07 standard deviations on an index of food security than program recipients. Program recipients have no more than $\sim \$25$ USD (8% of mean assets) than cash transfer recipients. In sum it does not appear that involving recipients in the decision of how to allocate aid dollars between cash and the programs studied here improves the impact of aid resources. Simply providing cash, however, does appear to improve recipients' subjective experience of aid, without reducing the poverty reducing impact of such aid.

2 Study design

2.1 Location selection

We selected areas with relatively high poverty. Beginning with a list of Kenyan counties, we filtered all counties with less than a 40% poverty rate, or just below the national rate of 46% (World Bank, 2015). Due to logistical considerations, we then filtered out counties with household density below the 33rd percentile. Remaining counties were then filtered or prioritized based on the poverty rate, household density, fertilizer use, HIV, diarrhea and malaria prevalence, bed net use and secondary school enrollment rates (all data comes from Kenya Open Data). Ultimately, we chose to work in Makueni county, specifically in the regions of Mbooni and Kilungu.

2.2 Program selection

In selecting programs to benchmark against cash we firstly prioritized those that have a plausible direct, private benefit for recipients. While the issues of recipient preference and self-knowledge apply to public goods, they are more directly relevant to private goods. Secondly, we chose to include both the provision of subsidized goods, which are most directly comparable to cash transfers, as well as knowledge transfer, which is a very common component of many

programs. Third, we prioritized programs that are commonly implemented by governments and development organizations.

Programs included in the study are:

1. Agricultural extension: we hired a team of 11 agriculture experts, with a combined experience of 66 years in the agricultural sector, to deliver in-person group training to randomly selected farming households. The training sessions ran from September to October 2016 - leading up to the “short rains” agricultural season in Kenya. The training included education on: land preparation, planting, soil fertility, crop selection, soil and water management, field management (fertilization, pest and disease management, weeding), record keeping and financial management, farmer group dynamics and conflict resolution, harvesting, post-harvest management, value addition and marketing.
2. Agricultural inputs: based on the advice of agricultural experts, we provided recipients with enough inputs to plant approximately 0.5 acres of cabbages or maize. The type of inputs to be provided were recommended by our agricultural consultants who determined the requirements based on terrain and crops grown in the study areas. Specifically, for the cabbage-growing region of Mbooni, we provided 50 grams of Baraka F1 seeds and 75 kilograms of planting fertilizer. For the maize-growing region of Kilungu, we provided 4 kg of Duma 43 seeds, 25 kg of planting fertilizer and 25 kg of top-dressing fertilizer. These inputs are roughly modeled after the Government of Kenya’s National Accelerated Agriculture Inputs Access Program. The program includes a voucher, valued at USD 60 - 80, to cover the cost of 10 kg of hybrid maize seed, 50 kg of basal fertilizer, and 50 kg of top-dressing fertilizer, inputs sufficient for approximately 1 acre (0.4 ha) of maize. Our agricultural inputs package also included a one-time information session on proper input usage provided by our extension agents.
3. Livestock transfers: recipients received 25 one-month old chicks vaccinated for common diseases as well as a starter pack of feed (~10 kg).

Recipients were also provided with basic information about taking care of their chicks by our team of agricultural experts and were visited occasionally by the agriculture team over the following 4 months.

4. Cash transfers: some households were randomly selected to receive direct cash transfers. The size of these transfers match the per-recipient cost of one of the above programs – \$15 for agricultural extension, \$75 for agricultural inputs in Mbooni and \$35 for agricultural inputs in Kilungu, and \$120 for livestock transfers. Cash transfers were delivered using the M-Pesa mobile money platform.

2.3 Baseline survey

Eligible individuals comprised those over 18 years of age residing in a home made of all or partially natural materials (e.g., wood, local stone or mud, excluding homes which include cement or cinder blocks) and with relatively small land holdings (less than 6 hectares). We surveyed ~3,000 individuals meeting these criteria. Each respondent was administered a baseline survey that elicited their indifference point between cash and the relevant programs (agricultural extension, agricultural inputs or livestock transfer). We chose a valuation based approach to estimating whether a respondent prefers cash or the program, as opposed to a direct choice between the two. This choice was made as a valuation approach could potentially be extended to multiple interventions of various costs (if preferences matter, it may be wise to provide the program with the highest ratio of valuation to cost). The survey also measured a variety of baseline characteristics. The survey was administered on tablet computers using SurveyCTO software. The baseline survey was conducted from August 10th, 2016 to September 24th, 2016.

Data integrity was maintained through the following checks:

- High Frequency Checks: this entails continuous monitoring of data coming into the server to check for missing observations and inconsistencies in responses. A standardized project-specific .do file was created and run regularly (at least weekly) on incoming data to check for errors. If any

errors were detected or discrepancies arose, corrective action was taken to resolve these issues. Further, these checks informed the content of refresher training for field officers.

- **Back-Checks:** these checks consisted of revisiting respondents that were earlier surveyed and asking them time-invariant questions from the baseline survey. Responses in the back-check survey were matched with baseline responses to monitor the reliability and quality of the data collected. These back-check survey were also designed to confirm the identity and payment details (phone number for M-Pesa transfer) of respondents. Back-checks were conducted within a week of the original baseline survey. Back-checks surveys were conducted by field officers other than those who collected the baseline data.
- **Random Spot Checks and Field Observations:** field officers were supervised by project leads, who regularly sat with field officers to observe the manner in which questions are asked to respondents. Specifically, project leads observed if questions were asked as per the protocol discussed during the training, such as probing respondents with hints. This ensures consistency of questioning across field officers. Continual feedback was relayed to field officers on areas that needed improvement. Additionally, senior project management made random visits to the field.
- **GPS checks:** GPS coordinates were recorded for all baseline and back-check surveys. A separate team member checked these coordinates on Google Earth to confirm the existence of a house at the specified location.
- **M-Pesa confirmation:** for those receiving cash transfers, we confirmed that the M-Pesa numbers provided at baseline and back-check matched and that the name associated with the mobile money account matched the name of the intended recipient before the transfer was initiated.

2.4 Randomization and power calculation

We allocated ~1,000 respondents into the “extension or cash” group, ~1,000 into the “inputs or cash” group and ~1,000 into the “livestock or cash” group. Due to the timing of the agricultural season, we first allocated respondents to the extension (or cash) and inputs (or cash) groups, and subsequently formed the livestock (or cash) group. The survey began in Mbooni and then moved to Kilungu. Thus while intervention group is conditionally random within location it is not random across location (e.g., no recipients in Mbooni received livestock). I use intervention group fixed effects, which absorb location fixed effects, in all specifications unless otherwise noted. Within each intervention group, we randomized individuals to receive either the program or a cash transfer equal to the cost of the program. Randomization was conducted at the individual level. Though the informational components may have spillover effects, individual randomization is a deliberate choice: the primary goal of this study is to compare across cash or program arms in order to isolate the effect of the choice mechanism. In equilibrium, were recipients to be given a choice between programs and cash transfers, I expect some would choose the program, thus having a mix of those receiving cash and the program in the same village provides the most relevant comparison. Based on a sample of 3,000 (those receiving either a program or cash) I can detect an effect size of 0.09 standard deviations with 80% power. For reference, based on data from Haushofer and Shapiro (Haushofer and Shapiro, 2016), a 0.09 SD change corresponds to a 7% change in the value of assets and a 5% change in consumption.

2.5 Program delivery

For respondents receiving the program, the goods or services were delivered in person by an individual not involved in the initial data collection. At that visit, the respondent’s name, ID number and location were verified. In the event of discrepancies, the program delivery was delayed until further investigation. For respondents receiving cash, a transfer was sent through the M-Pesa digital payment platform. This platform allowed the researchers to confirm the name

from the survey matches the name associated with the mobile money account. Finally, we followed up with a sample of recipients (by phone or in person) to confirm receipt of goods, services or cash.

1. Agricultural extension: An agricultural training curriculum consisting of 6 sessions was developed by contracted agricultural consultants. These sessions were administered by our team of agriculture experts at a location convenient for the respondents to attend. Respondents randomly selected to receive this intervention were contacted via phone for identity verification and invited to attend training sessions at a nearby venue on specific dates. A few farmers who could not come to the training venue received training on their farms instead from one of our team members. Out of 500 respondents, 431 attended these training sessions.
2. Agricultural inputs: Inputs were procured from a well-known seed distributor in Nairobi and transported to the target areas by the supplier. Before the goods were disbursed, participants were contacted via phone and all identity and contact information provided at baseline was verified using a contact verification phone survey. After verification, respondents were contacted via phone and informed of the inputs collection point and were advised and encouraged to collect their inputs. 280 respondents in Mbooni and 179 in Kilungu collected their inputs, meaning 459 of 500 recipients collected the inputs. Following input collection, respondents received another call from field staff to confirm that the amount of inputs stipulated during the verification survey was exactly the same as that collected.
3. Livestock transfers: The chicks were procured from a well-known seed and livestock distributor in Nairobi and transported to the target areas by the supplier. Before the goods were disbursed, participants were contacted via phone and all identity and contact information provided at baseline was verified using a contact verification phone survey. After verification, respondents were contacted via phone and advised to construct suitable chicken coops in preparation for the storage of the

birds. This call was made two weeks before the chicks were scheduled to be collected by the respondents. A week after the first preparation call, respondents were again contacted via phone and reminded to construct suitable chicken coops if they had not yet done so and advised on suitable storage conditions for the chicks. After the preparation reminder calls, respondents were contacted via phone and informed of a date and venue to collect the chicks. At collections, respondents were advised on basic upkeep and care. 489 out of 500 respondents showed up to collect their chicks. Following the livestock collection, respondents that collected their chicks received another call from field staff to confirm that the amount of chicks stipulated for collection at the time of verification was exactly the same as that collected. In addition, two of our agricultural trainers visited the chick recipients on a rotating basis to answer any queries.

4. Cash transfers: As cash transfers were to be implemented through M-Pesa, respondents' M-Pesa numbers were verified before the transfer was initiated. Additionally, the name of the respondent was matched with the name under which the M-Pesa account was registered before the transfer was initiated. All respondents scheduled to receive cash transfers were contacted on the phone to be informed of the impending transfer and the amount. Out of 500 respondents in each category, 491 respondents received the agricultural extension equivalent cash transfer, 483 received the agricultural inputs equivalent cash transfer, and 497 received the livestock equivalent cash transfer. The remaining respondents refused the cash transfer when contacted.

2.6 Endline survey and outcomes

The endline survey was conducted from April 6th, 2017 to June 10th, 2017, or approximately 6 months after the intervention. This timing was selected by our agricultural team, to coincide with the harvest time (allowing time for sale) and when chicks would be sufficiently mature to sell. Of the initial 3,009

respondents, we resurveyed 2,887 or a re-contact rate of 96%. Attrition is not correlated with treatment status (see Appendix). In Tables 1 and 2 I show the means of various baseline characteristics in the estimation sample. As noted above, interventions were not randomized across locations, thus in Table 1 I see significant differences when comparing means across locations (columns 1 vs. 3, 1 vs. 4, 2 vs. 3 and 2 vs. 4). Within location, where interventions were randomized, I do not see statistical differences between individuals based on their assignment to intervention group (i.e., comparing columns 1 vs. 2 and 3 vs. 4). Moreover, the sample is balanced between the recipients of cash and recipients of programs.

Table 1: Baseline Balance across Extension, Inputs and Livestock Recipients at Endline

	(1) Extension (Mbooni)	(2) Inputs (Mbooni)	(3) Inputs (Kilungu)	(4) Livestock (Kilungu)	p-value: (1) = (2)	p-value: (1) = (3)	p-value: (1) = (4)	p-value: (2) = (3)	p-value: (2) = (4)	p-value: (3) = (4)	N
Age of respondent	43.849 (0.500)	43.779 (0.594)	44.375 (0.827)	43.484 (0.493)	0.928	0.587	0.603	0.559	0.702	0.355	2887
Gender of respondent (dummy = 1 if female)	0.596 (0.016)	0.616 (0.020)	0.654 (0.026)	0.622 (0.016)	0.434	0.054*	0.256	0.237	0.827	0.275	2887
Psychological wellbeing index (CESD, GHQ-12, WVS)	0.015 (0.033)	0.066 (0.039)	-0.043 (0.052)	-0.041 (0.033)	0.319	0.349	0.231	0.096*	0.038**	0.976	2887
Growth mindset	31.905 (0.242)	31.812 (0.313)	33.256 (0.409)	32.286 (0.243)	0.814	0.005***	0.266	0.005***	0.231	0.042**	2887
Grit	3.395 (0.016)	3.430 (0.021)	3.400 (0.028)	3.388 (0.016)	0.184	0.888	0.734	0.379	0.107	0.703	2887
Valuation for Extension (in 10,000 KES)	2.878 (0.167)	2.744 (0.213)	1.999 (0.176)	2.138 (0.104)	0.622	0.000***	0.000***	0.007***	0.010**	0.496	2887
Valuation for Inputs (in 10,000 KES)	1.994 (0.083)	1.816 (0.093)	1.586 (0.109)	1.447 (0.044)	0.153	0.003***	0.000***	0.107	0.000***	0.236	2887
Valuation for Livestock (in 10,000 KES)	4.095 (0.147)	4.159 (0.193)	2.737 (0.168)	2.688 (0.095)	0.795	0.000***	0.000***	0.000***	0.000***	0.799	2887
Number of household members	5.118 (0.075)	5.212 (0.102)	4.767 (0.125)	4.917 (0.077)	0.453	0.016**	0.062*	0.006***	0.021**	0.306	2887
Share of household expenditure on food in past week	0.656 (0.007)	0.646 (0.009)	0.643 (0.012)	0.656 (0.007)	0.386	0.328	0.950	0.794	0.416	0.350	2887
Household wealth (in 10,000 KES)	80.665 (4.277)	81.915 (4.937)	52.233 (4.911)	51.198 (2.701)	0.848	0.000***	0.000***	0.000***	0.000***	0.853	2887

Notes: Table shows balance for variables measured at baseline which are listed on the left across all baseline recipients allocated to receive extension, inputs or livestock. Respondent's valuation for interventions and household wealth are top-coded at 99th percentile. Each row is a linear regression of a respondent characteristic on indicators for each of the intervention types (extension, inputs, livestock). Standard errors are in parenthesis. * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 2: Baseline Balance across Cash and Program Recipients at Endline

	(1) Cash	(2) Program	p-value: (1) = (2)	N
Age of respondent	43.930 (0.572)	43.766 (0.578)	0.773	2887
Gender of respondent (dummy = 1 if female)	0.589 (0.018)	0.604 (0.018)	0.402	2887
Psychological wellbeing index (CESD, GHQ-12, WVS)	0.027 (0.038)	0.002 (0.037)	0.502	2887
Growth mindset	32.032 (0.280)	31.776 (0.280)	0.365	2887
Grit	3.377 (0.018)	3.414 (0.019)	0.046**	2887
Valuation for intervention allocated (in 10,000 KES)	2.871 (0.176)	2.885 (0.185)	0.919	2887
Number of household members	5.119 (0.086)	5.117 (0.088)	0.981	2887
Share of household expenditure on food in past week	0.656 (0.008)	0.657 (0.008)	0.903	2887
Household wealth (in 10,000 KES)	80.605 (4.950)	80.726 (4.541)	0.977	2887

Notes: Table shows balance for variables measured at baseline which are listed on the left across all baseline recipients allocated to receive cash or program. Respondent's valuation for intervention and household wealth are top-coded at 99th percentile. Each row is a linear regression of a respondent characteristic on indicators for cash and program allocation. Regression includes intervention fixed effects. Standard errors are in parenthesis. * p < 0.1, ** p < 0.05, *** p < 0.01.

Our primary outcomes of interest for this study are:

1. Consumption - total monthly per capita consumption, including the value of own production, in Kenyan shillings. Consumption is winsorized at the 99th percentile.
2. Food security - weighted standardized index.
3. Assets - total value of household assets, excluding land and buildings, in Kenyan shillings. Assets are winsorized at the 99th percentile and the 1st percentile (due to negative outliers occurring due to household debt).
4. Psychological well-being - weighted standardized index.
5. Autonomy, dignity, trust - weighted standardized index.

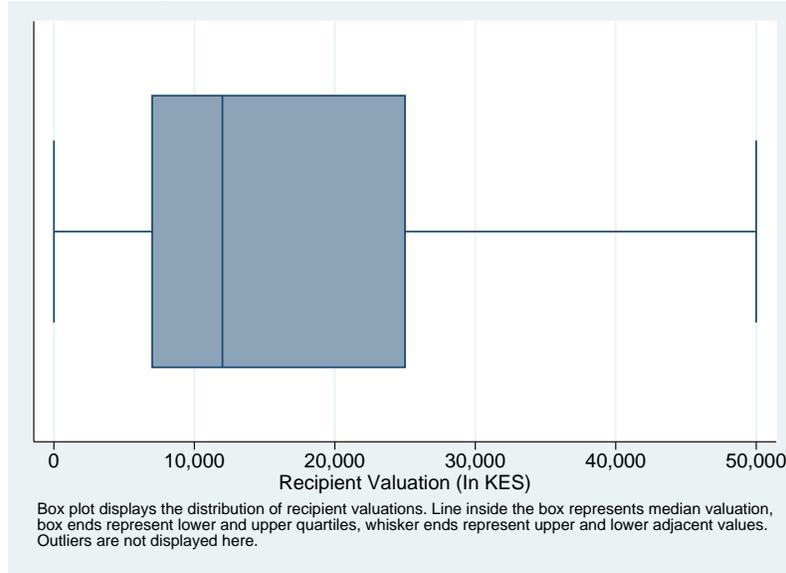
In constructing weighted standardized indices I follow Anderson (2008), 1481–1495). For a group of related outcomes, I first calculate the co-variance matrix. I then invert the matrix and define weights for each variable as the row sums of the inverted co-variance matrix. Related outcomes are then de-measured and divided by the standard deviation of one treatment group (cash recipients). The index is constructed as the weighted sum of standardized outcomes, and is finally re-centered by the mean and standard deviation of the index for the cash recipient group. Details on the construction of these outcomes is discussed in the appendix. When estimating each of the equations below for these primary outcomes, I adjust p -values based on 5 outcomes of interest, reporting both Family Wise Error Rate adjustments and False Discovery Rate adjustments. In addition, I report impacts on sub-components of each overall outcome.

3 Results

3.1 *Estimating the impact of recipient choice*

To answer the question of whether individuals who value a particular program highly benefit more from receiving that program as compared to similar in-

Figure 1: Recipient Valuations - Overall



dividuals receiving a cash transfer, I pool data across the three interventions and estimate:

$$y_i = \alpha_p + \beta_1 Program_i + \beta_2 Program_i v_i + \beta_3 v_i + \varepsilon_i \quad (1)$$

where v is the ratio of the respondent's expressed value for the program to the cost of the program, and $Program$ is an indicator for the recipient receiving a program rather than cash. Receiving a cash transfer of any value is the omitted category. If individuals who value programs much more than the cost benefit from the programs more than others, I expect that $\beta_2 > 0$. As seen in Figures 1 and 2, even without displaying the very extreme outliers, the distribution of v exhibits a long right tail. Therefore I report results for several transformations of v , including: $v/10000$ which simply aids in reading otherwise small coefficients, v winsorized at 95th percentile, $\log(v)$ and v where any value-cost ratio above 10 is capped at 10. These transformations of v were not specified in the pre-analysis plan and were added upon observing the distribution of v .

Figure 2: Valuation & Program Cost - By Intervention

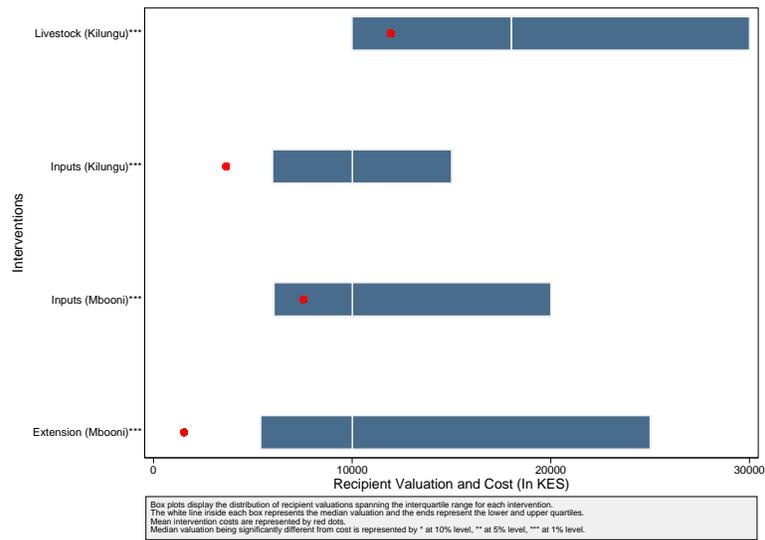


Table 3: Effect of type of program or cash allocation on primary outcome variables

	Program X Val-Cost Ratio	Program X Val-Cost Ratio (trimmed)	Program X ln(Val-Cost Ratio)	Program X Val-Cost Ratio (capped)	N
Monthly Per-Capita Cons (KES)	25395.901 (16583.380) [0.820]	72300.344 (139697.660) [0.960]	41.661 (90.645) [0.900]	87264.159 (362087.676) [0.980]	2887
Food Security Index	4.684 (5.359) [0.840]	-23.538 (38.055) [0.960]	-0.032 (0.025) [0.710]	-137.021 (112.465) [0.670]	2887
Household Assets (KES)	309395.643 (278921.710) [0.750]	1819738.739 (1460928.197) [0.690]	1025.844 (916.244) [0.710]	3834458.899 (3395524.079) [0.680]	2887
Psychological Wellbeing Index	20.575*** (7.049) [0.130]	4.714 (44.568) [0.960]	0.006 (0.027) [0.900]	25.386 (107.271) [0.980]	2887
Autonomy Index	3.973 (9.573) [0.840]	-53.694 (47.341) [0.730]	-0.040 (0.030) [0.580]	-80.258 (114.829) [0.890]	2887

Notes: Outcome variables are listed on the left. Each cell displays the coefficient for the interaction term from a regression of the outcome variable on program assignment, variants of the valuation-cost ratio and their interaction along with intervention fixed effects. Program is a dummy which takes the value 1 if respondent received a program instead of cash. Valuation is the respondent's stated valuation at baseline for the program into which they were randomized. Cost is estimated as the cost incurred to deliver a program per respondent. Costs are fixed for all respondents who were randomized to receive a given program or its cash equivalent in a given location. Valuation-cost ratio is expressed per 10000 units. Standard errors are reported in parenthesis, FWER-adjusted p-values are reported in brackets. * p < 0.1, ** p < 0.05, *** p < 0.01

In Table 3 I present the coefficient of interest (β_2) for all transformations of v . For the sake of readability, other terms in the regressions are omitted. Column 1 suggests that recipient preferences do not impact future consumption, food security, assets and feelings of autonomy. None of the estimated coefficients are statistically different from zero, and the upper bound of the confidence intervals are tiny in comparison to the variable mean. The estimates in column 1 suggest that recipients receiving a program they value has a slight impact on psychological well-being i.e., shifting from the 25th percentile to the 75th percentile of v increases psychological well-being by 0.01 standard deviation. This impact is statistically significant when accounting for multiple hypothesis testing. Columns 2, 3 and 4 - which use transformations of v to reduce the impact of outliers - indicate that the small result on psychological well-being is driven by extreme values in v . In these specifications the degree to which respondents value the program they receive has no impact on outcomes.

As an alternative method to assess the impact of recipient preferences, I define an indicator variable R which takes value 1 if either: a) the respondent values the program less than the cost of the program and receives cash, or b) the respondent values the program more than the cost and receives the program. Thus R can be interpreted as an indicator that the respondent's preferences were respected in the (random) decision to provide the program or cash. I pool data across the three programs and estimate:

$$y_i = \alpha_p + \beta_1 R_i + \varepsilon_i \quad (2)$$

where α_p are dummies for each program / cash group.

Considering the impact of respecting a respondents' preferences (i.e., provide cash if they value the program less than the cost and the program otherwise) Table 4 presents the results. I can rule out meaningful impacts on economic outcomes (consumption, food security and assets), however it appears providing respondents with the item they value most reduces psychological well-being by 0.07 standard deviations (not significant when correcting for multiple hypotheses) and reduces feelings of autonomy by 0.11 standard deviations. The latter result is robust to accounting for multiple hypotheses ($p = 0.03$). This result is driven primarily by individuals receiving a program: of those who received what they most valued, 79% received a program and 21% received cash. As shown in Figure 2, most respondents valued programs more than the cost, for these respondents receiving the program is their preference and forms the majority of the group receiving their preference. Thus, to the extent receiving a program is correlated with receiving the more valued intervention, the former might also influence the results. When controlling for whether the individual received a program or cash, which is randomly determined, the relationship between receiving the more valued intervention no longer holds, as show in Table 5. In this table I also see a positive impact of receiving cash on our autonomy index, even when controlling for whether the respondent receives the intervention they most prefer.

Table 4: Effect of recipient preferences being respected in allocation (as per cost) on primary outcome variables

	Constant	Respondent preferences respected (as per cost)	N
Monthly Per-Capita Cons (KES)	4362.703*** (117.575)	-140.129 (131.417) [0.520]	2887
Food Security Index	0.037 (0.044)	-0.041 (0.035) [0.520]	2887
Household Assets (KES)	34991.659*** (1188.447)	-423.570 (1174.823) [0.620]	2887
Psychological Wellbeing Index	-0.032 (0.036)	-0.067* (0.036) [0.250]	2887
Autonomy Index	-0.207*** (0.038)	-0.111*** (0.038) [0.040]**	2887

Notes: Outcome variables are listed on the left. Regression includes intervention fixed effects with agricultural extension as omitted category. Respondent preferences respected is an indicator that takes the value 1 if either the respondent values the program less than the cost and receives cash, or the respondent values the program more than the cost and receives the program. Standard errors are reported in parenthesis, FWER-adjusted p-values are reported in brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Effect of recipient preferences being respected in allocation (as per cost) on primary outcome variables, with controls

	Constant	Respondent preferences respected (as per cost)	Cash	N
Monthly Per-Capita Cons (KES)	4257.767*** (179.374)	-62.885 (164.139) [0.710]	132.797 (164.320) [0.750]	2887
Food Security Index	0.069 (0.049)	-0.065 (0.040) [0.480]	-0.040 (0.040) [0.750]	2887
Household Assets (KES)	35669.138*** (1637.535)	-922.266 (1411.689) [0.710]	-857.347 (1411.359) [0.750]	2887
Psychological Wellbeing Index	-0.056 (0.051)	-0.049 (0.045) [0.600]	0.030 (0.045) [0.750]	2887
Autonomy Index	-0.280*** (0.052)	-0.058 (0.046) [0.600]	0.091** (0.046) [0.300]	2887

Notes: Outcome variables are listed on the left. Regression includes intervention fixed effects with agricultural extension as omitted category. Respondent preferences respected is an indicator that takes the value 1 if either the respondent values the program less than the cost and receives cash, or the respondent values the program more than the cost and receives the program. Cash is a dummy which takes the value 1 if respondent received cash instead of a program. Standard errors are reported in parenthesis, FWER-adjusted p-values are reported in brackets. * p < 0.1, ** p < 0.05, *** p < 0.01

3.2 Cash vs. “stuff”

I estimate the impact of receiving a cash transfer of any value compared to receiving any program, noting that the values of the goods and services received is equal in aggregate for those receiving cash or programs:

$$y_i = \alpha_p + \beta_1 \text{Cash}_i + \varepsilon_i \quad (3)$$

Table 6 shows the results from this specification. The point estimate suggests that households receiving cash transfers have monthly per capital consumption KSH 169 (~1.5 USD) higher than those who received programs costing an equivalent amount but this difference is not significantly different from zero. Moreover, the 95% confidence interval rules out large differences in consumption among cash and program recipients - the upper bound of the interval is ~4.25 USD which is approximately 10% of the sample mean monthly consumption. The results similarly rule out large impacts of cash on food security and assets in comparison to programs - the 95% confidence interval puts the maximum increment of cash over programs at 0.07 standard deviations for food security and negative ~25 USD, or 8% of the sample mean for assets. With regards to psychological well-being, there are no significant differences between cash and program recipients with the 95% confidence interval ruling out differences greater than 0.13 standard deviations. Even when adjusting for multiple hypotheses, the estimates suggest that cash transfer recipients score 0.13 standard deviations higher on the autonomy index, significant at the 1% level.

Table 7 shows the drivers of the autonomy index. The results indicate that cash transfer recipients are more likely to believe they are trusted by the implementing NGO, that the aid they received was tailored to their needs and that they were treated as an individual. They are less likely to report being treated with contempt by the implementing organization, that they were persuaded to make a particular choice and that they can ask the NGO for what they need.

Table 6: Effect of cash allocation on primary outcome variables

	Constant	Cash	N
Monthly Per-Capita Cons (KES)	4208.517*** (128.553)	169.366 (131.556) [0.540]	2887
Food Security Index	0.018 (0.033)	-0.003 (0.035) [0.960]	2887
Household Assets (KES)	34946.850*** (1235.305)	-321.023 (1174.576) [0.960]	2887
Psychological Wellbeing Index	-0.094*** (0.036)	0.059 (0.036) [0.350]	2887
Autonomy Index	-0.325*** (0.040)	0.125*** (0.038) [0.010]***	2887

Notes: Outcome variables are listed on the left. Regression includes intervention fixed effects with agricultural extension as omitted category. Cash is a dummy which takes the value 1 if respondent received a cash transfer instead of a program. Standard errors are reported in parenthesis, FWER-adjusted p-values are reported in brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Effect of cash allocation on autonomy sub-outcome variables

	Constant	Cash	N
Autonomy Index	-0.325*** (0.040)	0.125*** (0.038)	2887
> I make important decisions in my life for myself	3.611*** (0.022)	-0.014 (0.021)	2883
> Other people and orgs enable me to live with dignity	3.076*** (0.037)	-0.022 (0.035)	2880
> NGOs trust the people they seek to help	3.374*** (0.030)	0.065** (0.026)	2866
> I would rather have little money but make my own decisions	3.534*** (0.026)	0.026 (0.024)	2876
> Org from whom I received aid treated me as an equal	3.620*** (0.030)	0.025 (0.027)	2407
> Org from whom I received aid treated me with contempt	1.655*** (0.047)	-0.111*** (0.038)	2412
> Org from whom I received aid was arrogant	1.175*** (0.023)	-0.006 (0.021)	2413
> Aid was tailored to solve my problems	3.187*** (0.035)	0.250*** (0.032)	2415
> Org from whom I received aid treated me as an individual	3.223*** (0.041)	0.247*** (0.032)	2411
> Org from whom I received aid ridiculed me	0.011*** (0.004)	-0.004 (0.003)	2416
> I felt that I could ask the org for what I needed	0.380*** (0.021)	-0.064*** (0.019)	2416
> Org from whom I received aid reduced my sense of control	0.213*** (0.018)	0.004 (0.016)	2416
> Org tried to persuade me to make a particular decision	0.177*** (0.017)	-0.038*** (0.015)	2416
> Org made me feel in control of my life	0.774*** (0.017)	0.020 (0.016)	2416

Notes: Outcome variables are listed on the left. Regression includes intervention fixed effects with agricultural extension as omitted category. Cash is a dummy which takes the value 1 if respondent received a cash transfer instead of a program. Standard errors are reported in parenthesis, FWER-adjusted p-values are reported in brackets. * p < 0.1, ** p < 0.05, *** p < 0.01

All additional analysis discussed in the pre-analysis plan, including detailed index component results, results by program and heterogeneous results, are shown in the appendix.

4 Conclusion

Through a randomized control trial low-income Kenyans were randomly selected to receive either a particular development program (agricultural extension, agricultural inputs, livestock transfers) or an amount of cash equal to the cost of the program. Prior to receiving any intervention, we elicited respondents' indifference point between cash and the program in question. Subsequently, we randomly assigned individuals to receive the program in question or a cash transfer equal to the cost of the program. This design addresses two questions: first, what is the relative impact of common development programs relative to cash transfers equal to the cost of the program? Second, does incorporating recipient preferences into the allocation of aid dollars affect the impact of aid programs?

I do not find any appreciable impact of incorporating respondent preferences in aid allocation. Utilizing a variety of measures of recipient preference, there is no discernible relationship between whether a recipient receives their preferred intervention (a program or cash) and components of well-being including consumption, food security, assets, psychological well-being and feelings of autonomy. Regardless of recipients valuation or preferences for specific interventions, I do find that cash transfers increase feelings of autonomy and produce more favorable views of the implementing organization than non-cash interventions. Cash transfer recipients score 0.13 standard deviations (CI = 0.05 to 0.20 standard deviations) on an index of autonomy related questions. They are more likely to believe they are trusted by the implementing NGO, that the aid they received was tailored to their needs and that they were treated as an individual. They are less likely to report being treated with contempt by the implementing organization, that they were persuaded to make a particular choice and that they can ask the NGO for what they need. When comparing

cash transfers equal to the total cost (including overhead) of several common poverty reduction strategies, I can rule out large differences in impacts on economic outcomes. Based on 95% confidence intervals, cash transfer recipients consume no more than ~ 3.5 USD more per person per month ($\sim 10\%$ of mean consumption) than program recipients and score no higher than 0.07 standard deviations on an index of food security than program recipients. Program recipients have no more than $\sim \$25$ USD (8% of mean assets) than cash transfer recipients.

In sum it does not appear that involving recipients in the decision of how to allocate aid dollars between cash and the programs studied here improves the impact of aid resources. Simply providing cash, however, does appear to improve recipients' subjective experience of aid without reducing the poverty reducing impact of such aid. Moreover, I do not see appreciable differences in impacts between the aid programs studies here and comparable cash transfers. The results suggest that factors other than impact (such as ease of delivery, scalability or operational efficiency) are important in determining which poverty reduction strategies to pursue. These results should not be generalized broadly at this point, however, since they pertain only to several specific development interventions in one country. Confirmation is necessary to establish whether cash transfers perform better, worse or the same as programs on average or only in specific instances, and to understand the drivers of relative performance. Further, these results suggest that there may be little gain from an impact perspective of incorporating recipient preferences into determining how to allocate aid resources. Again, however, this finding should not be generalized at this point. There is an argument that respecting recipient preferences is a good in its own right, regardless of the effect on program impacts. For example that respecting recipient preferences has psychological benefits. This study finds, however, that the choice enabled by cash transfers results in greater feelings of autonomy and favorable opinions of NGOs than incorporating recipient preferences in aid allocation.

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Appendix

Indices and Variables

Variables or indices below marked with a ⁺ are primary outcomes of interest. Variables or indices below marked with a # are secondary outcomes. Impacts on variables or indices below marked with a * will also be reported to illuminate the specific cause of the change in the primary outcome.

1. Consumption⁺ - monthly KES consumption per capita
 - (a) Food*
 - i. Food own production*
 - ii. Food bought
 - A. Meat, fish & dairy*
 - B. Fruit & vegetables*
 - C. Cereals*
 - D. Other food*
 - (b) Temptation good expenditure*
 - i. Alcohol
 - ii. Tobacco
 - iii. Gambling
 - (c) Airtime, internet, other phone expenses*
 - (d) Travel, transport, hotels*
 - (e) Personal and household items*
 - i. Clothing and shoes
 - ii. Personal items such as soap, shampoo, etc.
 - iii. Household items such as matches, kerosene, etc.
 - iv. Cooking fuel
 - (f) Recreation/entertainment*
 - (g) Housing*
 - i. Rent
 - ii. Electricity
 - iii. Water

- (h) Education expenditures*
- (i) Medical expenditure*
- (j) Social expenditure*
 - i. Religious expenses or other ceremonies
 - ii. Weddings
 - iii. Funerals
 - iv. Charitable donations
 - v. Dowry/bride price
 - vi. Fees paid to the village elder, chiefs or other officials
- (k) Other expense greater than KSH 1,000

2. Food security⁺ - weighted standardized index of:

- (a) Number of times last month adults cut or skipped meals (negatively coded)*
- (b) Number of times last month children cut or skipped meals (negatively coded)*
- (c) Number of times last month had to borrow food or rely on help from a friend or relative (negatively coded)*
- (d) All household members eat two meals a day (indicator)*
- (e) All household members usually eat until content (indicator)*
- (f) Number of times last week respondent has eggs, meat or fish*

3. Income[#] - sum (KSH) of monthly household income from:

- (a) Livestock*
 - i. Cows
 - A. Value of milk (sold and consumed)
 - B. Value of meat (sold and consumed)
 - C. Value of animals sold
 - D. Value of other products
 - E. Cost of care (e.g. fodder, veterinary care, etc.)
 - ii. Small ruminants
 - A. Value of meat (sold and consumed)
 - B. Value of animals sold

- C. Value of other products
 - D. Cost of care (e.g. fodder, veterinary care, etc.)
 - iii. Birds
 - A. Value of eggs (sold and consumed)
 - B. Value of meat (sold and consumed)
 - C. Value of animals sold
 - D. Cost of care (e.g. fodder, veterinary care, etc.)
 - (b) Agricultural income (monthly average)*
 - i. Value of crops harvested in short rains season
 - ii. Costs of seeds, fertilizers/herbicides/pesticides, hired machines, water, labor and other expenses in short rains season
 - (c) Enterprise income*
 - i. Sales in prior month (prorated for share of enterprise owned if applicable)
 - ii. Costs of electricity, wages, water, transport, purchase of inputs, other costs (prorated for share of enterprise owned if applicable)
 - (d) Wage income*
 - i. Sum of income from outside labor
4. Assets⁺ - sum (in KSH) of value of:
- (a) Productive assets*
 - i. Irrigation pump
 - ii. Hose pipe
 - iii. Ox-Ploughs
 - iv. Oxen/work bulls
 - v. Knapsack sprayers
 - vi. Wheelbarrows
 - vii. Ox-carts/donkey carts
 - viii. Hand carts
 - ix. Other farming tools
 - x. Fishing equipment (boats, canoes, etc)
 - xi. Other asset used for agriculture or business
 - (b) Vehicles*

- i. Bicycle
 - ii. Motorbike
- (c) Furniture*
 - i. Sofas
 - ii. Chairs
 - iii. Table
 - iv. Clock/Watch
 - v. Beds
 - vi. Mattresses
 - vii. Cupboards
 - viii. Other furniture
- (d) Household durables*
 - i. Cell phone
 - ii. Sewing machine
 - iii. Radio, tape- OR CD player
 - iv. Battery
 - v. Solar panel
 - vi. Television or computer
 - vii. Kerosene stove
 - viii. Refrigerator
 - ix. Insecticide treated bed net
- (e) Other
- (f) Livestock*
 - i. Cows
 - ii. Birds
 - iii. Small ruminants
- (g) Financial assets* - net balance (KSH) of savings minus outstanding loans:
 - i. Savings with an institution (bank, SACCO, micro-finance organization)
 - ii. Savings with M-Pesa
 - iii. Savings in any other place (e.g., with family or friends)
 - iv. Loans made by friends or family

v. Loans from moneylenders, micro-finance institutions, shops, banks or other sources

5. Psychological well-being⁺ - weighted standardized index of:

- (a) CESD (depression)* with standard scoring (<https://www.outcometracker.org/library/CESD.pdf>)
- (b) GHQ-12* with standard scoring
- (c) WVS (happiness)* (1-4 scale)
- (d) WVS (life satisfaction)* (1-10 scale)

6. Autonomy, dignity, trust⁺ - weighted standardized index of:

- (a) “I feel that I am autonomous - I make the important decisions in my life for myself”* (1-4 scale)
- (b) “Other people and organizations enable me to live with dignity”* (1-4 scale)
- (c) “NGOs and organizations that try to lift people from poverty trust the people they seek to help”* (1-4 scale)
- (d) “I would rather have little money and make my own decisions than have more money and let others make my decisions” (1-4 scale)
- (e) “The organization and people from whom I received the aid treated me as an equal” (1-4 scale)
- (f) “The organization and people from whom I received the aid treated me with contempt” (1-4 scale)
- (g) “The organization and people from whom I received the aid behaved arrogantly” (1-4 scale)
- (h) “The aid I received was tailored for my benefit and to solve my problems” (1-4 scale)
- (i) “The organization providing the aid treated me as an individual, not just another one of the masses” (1-4 scale)
- (j) “Did anyone from the organization from whom you received the aid ridicule you?” (0-1)
- (k) “Did you feel that you could ask the person who gave you the aid for what you needed, and make demands upon them?” (0-1)

- (l) “Did the organization and people from whom you received the aid do anything to reduce your sense that you could control your own life?” (0-1)
 - (m) “Did the organization and people from whom you received the aid try to persuade you to make a particular decision?” (0-1)
 - (n) “Did the organization and people from whom you received the aid do anything to help you feel in control of your life?” (0-1)
7. Labor[#]- Hours spent per week per capita on income generating activities, including:
- (a) Working in agriculture for this household*
 - (b) Tending animals for this household*
 - (c) Working in a non-farm or livestock business owned by this household*
 - (d) Working for pay for someone outside the household (in agriculture, livestock, housework, casual labor, salaried job or other paid work)*
8. Education index[#]
- (a) Weighted standardized index of:
 - i. Proportion of children (<19) in school*
 - ii. Average days of school missed per child (<19)* - *negatively coded*
 - iii. Average perception of child (<19) school performance*
 - iv. Average spending on school expenses per child (<19)*
 - v. Average of highest level of education expect children (<19) will complete*
 - vi. Average time studying or in school per child (<19)*
9. Sources of heterogeneity (as measured at baseline)
- (a) Age (of respondent)
 - (b) Gender (indicator for female)
 - (c) Wealth
 - i. Land and buildings - sum (in KSH) of value of:

- A. House and the land under it
 - B. Fish pond
 - C. Other buildings (e.g., sheds)
 - D. Land
- ii. Assets - defined above (excluding value of livestock)
- (d) Mindset
 - (e) Grit