

# More Cash, Bigger Impacts? A Field Experiment of Cash Transfers in Somalia\*

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## Abstract

Cash transfers in different forms is a major component of most social protection programmes. Unconditional cash transfer (UCT) typically in monthly instalments is common in humanitarian programming to support households achieve immediate food security. Business grants, on the other hand, are also found to be effective in assisting households to build their asset base and foster income growth, which are key elements for household resilience building. However, the effects of most of these programmes on children's are usually limited or not significant. In this study, we compare the livelihood and child level outcomes of four types of transfers. The study arms are a) small UCT of \$100-250 in two monthly instalments, b) small one-off business grant of \$100-\$250, c) "medium" business grant of \$500, and d) "large" business grant of \$1,000. The business grant recipients also participated in a business training. The study measures the marginal effects of business grants and training five months after the transfers completed using the UCT beneficiaries as the comparison group. We find that small business grants have positive effects on business ownership, business income, savings and food security compared to UCT. Larger grants have positive returns in term of business income and household assets. Based on the effects observed on income, we find medium sized business grants to be cost-effective. In terms of effects on children, we find positive effects on school enrolment for the large business grants group, and no significant difference in their health and nutrition. The study also piloted a "behavioural nudge" as part of the baseline survey to improve child wellbeing, which had significant effect only on one outcome – expenses for healthcare for girls who were sick. In general, the study reinforces the general concerns of cash transfer having limited effect on child wellbeing observed in many studies.

**Keywords:** Unconditional cash transfer, Business Grants, Micro-enterprise, child well-being

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## **1. Introduction**

Small businesses are everywhere in developing countries, with hundreds of millions of people engaged in some form of self-employed, micro-entrepreneurial activity (Kushnir et al, 2010). These micro-entrepreneurs face complex financial decisions each day – how much to invest, what to invest in, and where and how to find work on a daily basis – along with many challenges in running their business – limited access to credit, stagnant growth, and low business survival (Bruhn et al., 2010; McKenzie and Woodruff, 2016). At the same time, studies find that businesses are leaving profitable investments on the table, ranging from 5-20% per month (De Mel et al., 2008; Udry and Anagol, 2006; McKenzie and Woodruff, 2008; Banerjee and Duflo, 2014; Fafchamps et al., 2014).

The traditional explanation for the presence of these high-unrealized marginal returns is that small shops are constrained in their ability to access capital, whether that be physical and/or human. Microfinance organizations, governments, and NGO's alike, then stepped in to offer credit and managerial training to millions of small businesses around the world (Blattman and Ralston, 2015). Still, with the increased access to finance, firms are not showing sustained or improved outcomes across the range of studies and contexts: few people take up microcredit, it does not reach the poorest of the poor, and overall has had small and negligible effects on reducing extreme poverty (Banerjee et al., 2015).

Recently studies have unconditionalized the transfers and provide cash directly to poor households with “no strings attached” and find significant increases in business investment and sales (De Mel et al., 2008; Udry and Anagol, 2006; McKenzie and Woodruff, 2008; Fafchamps et al., 2014). GiveDirectly, an NGO set up for cash transfer with very low operational costs, have conducted randomized experiments on just giving out cash to poor households in Kenya and found large investments into the home, business, and health of the family (Haushofer and Shapiro, 2016). Such unconditional cash transfers (UCT) have become a common feature in social protection and humanitarian programming. However, there is a key distinction of the transfers being done in small instalments over longer period under humanitarian supports compared to lump sum business grant to start or expand micro-enterprise. The GiveDirectly study find that lump sum transfers are more likely to be spent on household durables and building assets compared to monthly transfers. A more recent study by Bastian et al (2017) in Northern Nigeria compared the transfer of the same amount in monthly vs. quarterly disbursements. This study finds similar effects across food security and assets outcomes, and conclude in favour of lumping transfer to improve cost-effectiveness. Our study in Somalia measure the marginal effects of lumping monthly transfers as well as the benefits of additional business capital transfers.

If the investments to be made face non-linearities/convexities<sup>1</sup>, such as a large piece of machinery or a new building to work out of, then credit constraints could be preventing an efficient allocation of resources back into the business. If, however, the investments can be made at a more granular margin, for instance with a divisible good such as fertilizer or airtime, then the lumpiness should not play a factor. This was shown to not be the case by Duflo et al. (2011) where many farmers do not adopt fertilizer despite high returns and the availability of fertilizer in small quantities. Kremer et al. (2015) demonstrate that some shop-owners in Western Kenya are losing sales by running out of simple products such as airtime, which has a negligible storage cost and can be bought in small packets.

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<sup>1</sup> This means they are relatively “lumpy” and should only delay the purchase as it just takes longer to save

On the human capital side, there has been a recent surge in experimental studies of business training programs that attempt to understand the direct impact of participating in a training program on shop owners financial literacy and business performance (e.g. Cho and Honorati (2013), Karlan and Valdivia (2011), Bjorvatn and Tungodde (2012), Gine and Mansuri (2014), Karlan et al (2015)). McKenzie and Woodruff (2014) provide a review of sixteen experimental training programs conducted around the world over the last ten years, and overall, find mixed results.

This study was conducted in Somalia to test the marginal effects of additional capital transferred to micro-entrepreneurs. The cash size was randomly varied at individual level whereby beneficiaries received a “small” (\$100-250), “medium” (\$500) and “large” (\$1,000) size of cash grants. Moreover, the small grants were labelled as unconditional cash transfer with transfers taking place in two equal instalments while others received as it as income generating activity (IGA) or business grant. Medium and large transfers were labelled as business grants. An experimental behavioural nudge was also introduced in baseline survey to influence the respondents to find ways of benefiting their children from the cash transfers. We find that the small business grants have positive impacts on business income, food security and savings compared to equal amount of unconditional transfers made in two monthly instalments. A quarter of the additional capital transferred to medium and larger business grants groups are found to have been invested in business and have resulted in higher income from business. However, the larger income has not yielded substantial effect on children, at least within the short period of this evaluation. We find about 6 percentage points positive effect on enrolment of primary school aged children for the large business grants. The particular behavioural nudge piloted in this study was not successful in making major changes in child wellbeing, except a positive effect on girls receiving healthcare if they fell sick in the two weeks prior to survey.

With this introduction, Section 2 explains the study design, data collection and analysis methods. Section 3 and 4 present findings from the impact analysis at household and child level respectively. Section 5 discusses robustness of the results and some limitations. Section 6 concludes the paper.

## **2. Evaluation Design**

This study was conducted by leveraging two projects implemented by Save the Children in Somalia. Both projects, “Humanitarian Support and Re-Integration of IDP and Returnees in Mogadishu” supported by German Federal Foreign Office (FFO) and “Building Resilience in Hiran” supported by International Cooperation and Development (DEVCO) of European Commission, included supports for micro-business establishment or expansion. Despite the humanitarian and development orientation of the two projects, the supports for micro-business development were identical. This study randomly varied the size of cash grants received by the selected beneficiaries to measure the marginal effects of additional capital transfers.

### **a. Context and Participants’ Profile**

With decades of conflict and severe drought in regular intervals, Somalia has been in chronic humanitarian crisis. The country is consistently ranked among the lowest in most social indicators. The basic social services such as education, health and nutrition are still predominantly reliant on humanitarian agencies. The economy is heavily dependent on livestock rearing and remittance. Agriculture is limited in small parts of the country, and highly dependent on rainfall. Consequently, humanitarian supports, in the form of UCT or food vouchers, are common phenomena for the country. In recent years, there have been increasing

focus on resilience building among the agencies working in the country. Creating economic opportunities through small business is one of the tools for such initiatives. Given a large portion of the population living at various internally displaced person (IDP) camps for years, humanitarian supports often focus in these areas. Another contextual factor to consider is the severe drought that affected the whole country during the study period.

The study was conducted at several IDP camps in Mogadishu and in urban setting of Beledweyne district in Hiran region. Baseline data from the study shows the limited economic opportunities for the population. About one third of the households had any wage income, predominantly casual labour, in the month preceding the survey. Only 20% of the households had any income from micro-businesses, and over 40% of the households did not have any cash earning in last one month. With average household size of 6.4 members and 0.7 earners per households, these households live in extreme poverty. However, the urban residents from Hiran were relatively better off compared to the beneficiaries from IDP camps in Mogadishu at baseline.

Given the low income and lack of publicly provided social services, children from these households suffer from various deprivations. School enrolment rate of the primary school aged children (6-13 years) were only 16% in Mogadishu and 55% in Hiran. Girls in both sites were found to be less likely in school than the boys (12% vs. 20% in Mogadishu and 53% vs. 57%). Because of poor health, children frequently suffer from various illnesses. At baseline, 8% of the children (<18 years) were reported to have suffered any illness in last two weeks. More importantly, over 40% of these children did not seek any healthcare for their illnesses. Using mid-upper arm circumference (MUAC) as a proxy, we found extremely high level of malnutrition in these households with 26% their 6-59 months old children being malnourished at baseline. Only 22% of the 12-59 months old children received full immunization.

## **b. Treatment Groups**

This study followed randomized impact evaluation to measure the *marginal effects* of ‘lumpy’ and larger cash grants compared to a ‘typical’ UCT. Because of ethical concerns, we did not include a pure control group. Field officers of the two projects identified eligible beneficiaries following standard selection process.<sup>2</sup> The community was informed that the amount of transfer received by the households are to be determined at a later stage although all the selected households will receive grants. After the selection completed, the amount and method of transfer was determined through a public lottery attended by the beneficiaries. There were four types of transfers included in the lottery (Figure 1).

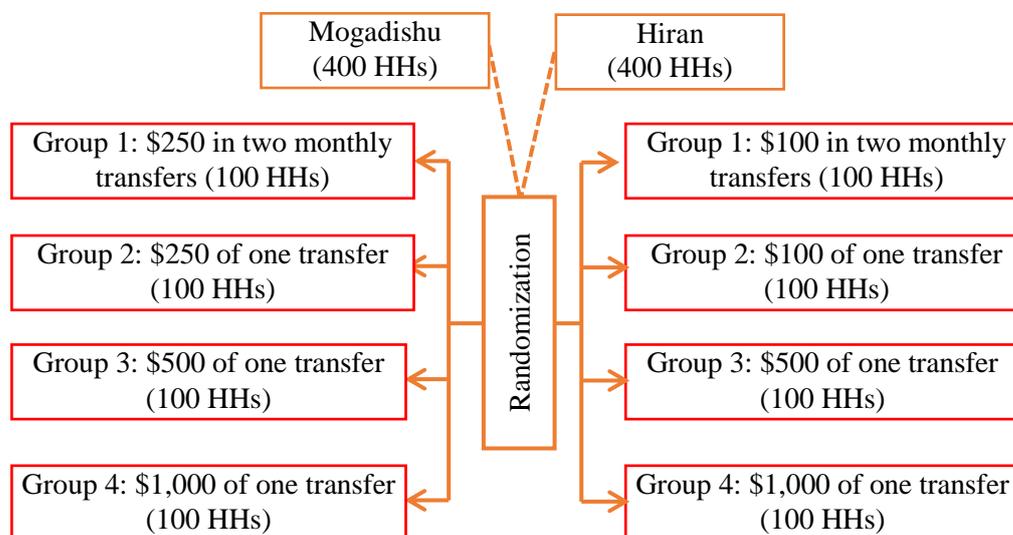
As Figure 1 shows, the size of transfer for the households of group 1 and 2 varied between the two sites. These was due to budget constraint of the two projects and the programmatic necessity of disbursing the amounts within the timeframe. In Mogadishu, the small transfer was \$250 whereas in Hiran it was \$100. However, in both cases, the same approach was adopted to make the transfer in two monthly (Group 1) and one instalment (Group 2). Grant size for Group

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<sup>2</sup> Beneficiary selection is done by forming a village relief committee in each community consisting of clan leaders and people respected in the communities. This committee organizes open meetings attended by Save the Children field officers. They collectively identify the characteristics of vulnerable households and determine the eligible beneficiaries. Verification of the eligible beneficiaries is done by the project team based on project specific criteria.

3 and 4 were \$ 500 and \$1,000 respectively. The transfer took place in Jan and Feb of 2017 after the baseline survey.

Figure 1. Randomized treatment arms by site



Besides the variation in transfer size, there is another important difference for Group 2, 3 and 4 compared to Group 1. For Group 1, the transfer was framed as unconditional cash transfer whereas the other three groups were told about the transfers as ‘business grants’. Beneficiaries of these three ‘business grant’ groups also participated in weeklong business training conducted by a consultant for 1-2 hours per day. The training covered generic modules on planning, accounting, costing and marketing. This training took place after the business grants were disbursed, and there was no conditionality attached for the use of cash.

We also conducted a “cross-cutting” randomization whereby half of the participants received a nudge intervention. Towards the end of our baseline survey questionnaire, we introduced a module on ‘planning for children’. To explore possible behavioural intervention to nudge the respondents into investing more in their children, this section of the interview asked them about how they can utilize the cash transfer for better wellbeing of their children (“goal setting”) and how they think good parents are able to utilize cash transfers for their children. Five questions were asked to nudge the beneficiaries to think of the transfers are for benefitting their children. Nudges/labelling/earmarking/mental accounting has been shown to be effective in a number of areas, such as saving, saving for health, saving for education. We decided to see how a simple labelling of the accounts as “for the children” might impact the ways in which they spend the business grants.

### c. Data and Impact Measurements

Baseline data was collected between Dec 2016 and Jan 2017 after the beneficiary selected was completed. Out of the 800 selected households, 795 households were successfully interviewed at baseline. The public lottery took place after the baseline survey was conducted. The cash transfers were done in late Jan and Feb of 2017, and the business training was rolled out in Feb and Mar. We conducted a follow-up survey in May-Jun of 2017. Therefore, the study measures short-term effects of the cash transfers.

In the follow-up survey, we managed to interview 752 of the baseline household with a 5% attrition rate. Given the limited focus on collecting panel data in most evaluations in Somalia,

this can be considered as a reasonable attrition rate despite the short interval between the surveys. Moreover, as mentioned earlier, this has been a period of severe drought for the whole country, which caused many households to migrate to different locations. The attrition rates are similar between the two sites (5.6% in Mogadishu and 5.3% in Hiran). However, there is significant difference in attrition rate between the treatment arms (Table 1).

Table 1. Attrition rate between baseline and follow-up

	Mogadishu	Hiran	Total
Group 1 (UCT)	7.0	2.0	4.5
Group 2 (Low cash)	5.1	1.0	3.0
Group 3 (\$500)	4.2	18.0	11.2
Group 4 (\$1,000)	6.0	0.0	3.0
Nudge treatment	4.4	3.0	3.7
Nudge control	6.6	7.5	7.0
Total	5.6	5.3	5.4

The medium sized business grant recipients of Hiran (Group 2) had an attrition rate of 18%, which is remarkably higher than the rest of the groups. We could not find any valid explanation for this differentially high attrition rate for this particular group. In terms of the questionnaire experiment with “nudge”, which was embedded in the survey form at baseline for randomization, 412 households at baseline responded to the question and 383 households did not. Table A1 shows the association of the treatment arms and household characteristics with their likelihoods of being attired at follow-up survey. Given that the randomization was done through public lottery, we also look at the balance in baseline characteristics of the panel households (Table A2).

We used the randomization as the key to identify the impacts attributable to the different cash sizes, and used respective outcome indicators and site dummy as control variable in the following regression.

$$y_{iF} = a + \beta_1 SBG_i + \beta_2 MBG_i + \beta_3 SBG_i + \beta_4 nudge_i + \delta_1 y_{iB} + \delta_2 S_i + \varepsilon_i$$

Where  $y_{iF}$  are the outcome indicators for household  $i$  at follow-up period, and  $y_{iB}$  are the corresponding values at baseline,  $\delta_2$  is the fixed effects for Hiran site. In this specification,  $\beta_1$  measures the *marginal effect* of receiving the small cash transfers *in one instalment and the business training*.  $\beta_2$  and  $\beta_3$  measures the *marginal effects* of receiving the *additional cash and the business training*. Finally,  $\beta_4$  assesses the average effects of the nudge component. Given the differential attrition, we used inverse probability weight factors in all regressions following Wooldridge (2002). To address the effects of possible outliers, for all monetary outcomes, we winsorized the top 5% values.

There are a couple of important general points to note in interpreting the results from this analysis. Firstly, we are able to measure additional effects of lumping two instalments into one, and the effects of the additional grants made to Group 3 and 4. Since we use the two instalments of small cash transfers (which is equivalent to typical UCT in the county) as our control group, we are not able to measure the effect of that transfer. Our assessments are whether the other treatments have any effect “over and above” the UCT. Secondly, the “nudge” intervention was almost a “shooting in the dark” type of efforts. A proper evaluation of nudge in behavioural

economics usually go through a formative phase before testing it.<sup>3</sup> There are other possible concerns, such as spillover effects through resource sharing by the larger cash recipients with their less lucky counterparts, in interpreting the results as causality are discussed in section 5.

### 3. Impacts at Household Level

Since the study intends to measure the effects of the business grants, we present the impacts on labour supply and income followed by the downstream effects on assets, savings and food security. The impacts on several child level outcomes are presented in a separate section.

#### a. Labour Supply, Micro-business Management and Income

Table 2 shows the impact findings on labour supply. As discussed in measurement methods, the coefficients for Group 2, 3 and 4 shows the average differences for the respective groups from Group 1 (i.e. unconditional transfer). As we can see, there is no significant impacts on the number of individuals from the households who are involved in earning activities or the amount of work. In other words, at household level, the additional transfer or lump sum amount do not increase labour supply. It is important to note that the total labour supply by the households is extremely low, which is determined by limited work opportunities.

Table 2. Impact on labour supply and income sources

	Number of HH members worked	# of days worked by all HH members	# of hours worked by all HH members	Earned from non-farm business	Earned from wage work
	(1)	(2)	(3)	(4)	(5)
Group 2 (One-off low cash)	-0.005 (0.061)	-0.054 (1.588)	6.438 (15.651)	0.109** (0.051)	-0.068* (0.040)
Group 3 (medium cash)	0.037 (0.060)	1.202 (1.551)	17.731 (16.032)	0.176*** (0.052)	-0.024 (0.043)
Group 4 (high cash)	0.084 (0.058)	1.752 (1.507)	14.620 (14.861)	0.196*** (0.050)	-0.043 (0.041)
Nudge (goal setting)	-0.017 (0.043)	-0.976 (1.117)	-13.907 (11.258)	-0.007 (0.036)	0.073** (0.028)
Group 1 (mean)	0.66	14.20	128.66	0.45	0.22
Observation	752	752	752	752	752
R-square	0.091	0.083	0.056	0.019	0.075

Note: \*, \*\* and \*\*\* denote significance from the control group at 10%, 5% and 1% respectively. Average value for Group 1 is taken from the follow-up survey for assessing the magnitude of impacts. Total number of days and hours are calculated for the last month preceding the survey date.

However, we find significant increase in the likelihood of household getting income from non-farm businesses because of larger size of IGA grants as well as lump sum transfer. Getting the same amount as the UCT (Group 1) as one-off grant (instead of two transfers) and the IGA training increase the likelihood of the households earning profit from non-farm businesses by 11 percentage points. This suggests possibilities of leveraging cash transfers to build resilience. When comparing the effect size among the IGA grant recipients, additional capital also increase the likelihoods of generating income from non-farm businesses. The effect size are 18 and 20 percentage points for \$500 and \$1,000 grant recipients respectively compared. The effect size for the large cash recipient (Group 4) is also statistically significantly different

<sup>3</sup> Given the almost zero marginal cost of testing this in the questionnaire, it could still be useful to try alternative ways of nudging. However, any positive result out of such initiative will need to be replicated before drawing any conclusion.

from the 11 percentage points effects on Group 2.<sup>4</sup> Considering the fact that 45 percent of the households had business income at baseline, the effects are remarkable. It is also noteworthy that around 35% of the medium and large cash recipients did not have any income from non-farm business at the follow-up survey. Equally importantly, the increase in non-farm income has not come at a cost of reduction in wage employment for \$500 and \$1,000 IGA grants groups while there is a 6 percentage points reduction in wage employment<sup>5</sup> for Group 2. In other words, the medium and large IGA grants groups have been able to increase their involvement in non-farm without reducing their chances of engaging in wage work.

We do not find much significant effects of the “questionnaire nudge” on labour supply, which is understandable. However, there is a 7 percentage points increase in their likelihood of receiving wage income compared to the households of other respondents who were not asked those questions. Although this is an interesting effect, it is not possible to establish a causal chain between the nudge and this increase wage employment because of the atheoretical nature of the intervention. It is possible that the nudge questions influenced the respondents to be more pro-active in seeking casual work. In terms of other economic activities, there is very limited scale of livestock rearing by the study population (only 4% and 3% at baseline and follow-up survey respectively), and agriculture or fishing are even lower.

Table 3. Impact on business management practices

	Keep written records of business (1)	Hired anyone for the business (2)	Sought loan for business (3)	Did any credit purchase for business (4)	Value of businesses (USD) (5)
Group 2 (One-off low cash)	0.122*** (0.047)	0.001 (0.027)	-0.007 (0.036)	-0.041 (0.040)	36.854 (24.607)
Group 3 (medium cash)	0.110** (0.048)	-0.006 (0.028)	-0.049 (0.035)	0.006 (0.041)	83.988*** (26.799)
Group 4 (high cash)	0.157*** (0.048)	-0.004 (0.028)	-0.085** (0.034)	-0.021 (0.040)	217.654*** (30.971)
Nudge (goal setting)	-0.010 (0.035)	0.024 (0.020)	-0.019 (0.024)	-0.018 (0.028)	-21.845 (20.675)
Group 1 (mean)	0.24	0.09	0.19	0.25	167.19
Observation	752	752	752	748	752
R-square	0.016	0.060	0.159	0.182	0.154

Note: \*, \*\* and \*\*\* denote significance from the control group at 10%, 5% and 1% respectively. Average value for Group 1 is taken from the follow-up survey for assessing the magnitude of impacts. The business practices questions were added at follow-up survey, and hence the regression do not control for baseline value.

In Table 3 we look at the impact on non-farm business management. Since the IGA training emphasizes on keeping written business records, we find significant positive effects on this indicator. The effect size is between 11 and 16 percentage points compared to the average of 24% for the households in Group 1, and there is no significant difference among the other three treatment groups. This indicates the observed effects are driven by the training rather than the size of business capital. The businesses are almost exclusively petty trading of different sorts (e.g. groceries, vegetable, charcoals, tea stalls etc.), which are managed by the household themselves. During key informant interviews of the project staffs, it was reported some of the

<sup>4</sup> P-value of the differences in coefficients are 0.08 for Group 2 vs. Group 4, and 0.20 for Group 2 vs. Group 3.

<sup>5</sup> Wage employment almost entirely consist of casual day labour.

IGA grants recipients are creating employment opportunities for others by hiring people. However, we do not find any significant effects of the additional grants on hiring (Column 2 in Table 3). In fact, about 90 of the businesses do not hire anyone for operating the business.

Column 3 and 4 present the effects on taking cash loan for business (expansion or as working capital) and use of credit purchase from wholesalers. On the one hand, additional capital can relax their credit constraint and thereby reduce the extent of borrowing. Conversely, having larger amount of working capital in their business through the IGA grants can increase their creditworthiness to lenders or wholesalers. The impact estimates show the net effects of these two possible effects. The impact evidence suggest credit constraint being relatively stronger force as the large grant recipients (Group 4) are significantly less likely (9 percentage points) than UCT beneficiaries in seeking cash loans. The point estimate for \$500 cash group is 5 percentage points, but not significant.

Column 5 shows the estimated impacts on the total value of their businesses. To measure business values, the respondents were asked to consider all capital items (furniture, shops etc.) and stocks for their businesses as of the day of the interview. The estimates can be used to interpret how much of the additional IGA grants are actually invested. The effect is the largest for Group 4 at \$218, and significantly larger the effects on Group 3 (\$84) and Group 2 (\$37). This shows that the additional \$500 (after the first \$500) results in an impact of \$134 dollars, which is about a quarter of the additional \$500 grant. This rate of investment is similar when we compare Group 1 vs. Group 3, which is about 26% for the additional 350 dollars.<sup>6</sup> This propensity to investment accounting suggests a linear pattern. Although not significant at conventional levels, the effects of \$37 for Group 2 is interesting as this suggest potential value of combining multiple UCT into lump-sum with IGA training. We do not find any effect of our nudge intervention on business management although in the goal setting question a few households responded by saying that they will use the transfer in for investment.

Table 4. Impact on household income

	Last month income from wage work	Last month profit from micro- business	Total income in last month	Profit from micro- business in last 6 months
	(1)	(2)	(3)	(4)
Group 2 (One-off low cash)	-2.373 (2.807)	5.428* (2.900)	3.115 (4.474)	23.942* (13.943)
Group 3 (medium cash)	1.887 (3.071)	10.329*** (3.102)	12.774*** (4.786)	44.864*** (14.694)
Group 4 (high cash)	-0.370 (2.871)	16.727*** (3.262)	19.828*** (4.939)	97.448*** (16.711)
Nudge (goal setting)	6.725*** (2.068)	-1.187 (2.333)	5.890* (3.475)	-5.697 (11.483)
Group 1 (mean)	11.97	18.09	32.74	83.69
Observation	752	752	752	752
R-square	0.018	0.090	0.060	0.127

Note: \*, \*\* and \*\*\* denote significance from the control group at 10%, 5% and 1% respectively. Average value for Group 1 is taken from the follow-up survey for assessing the magnitude of impacts.

To measure impacts on income, we collected information on their income from various in the last 30 days as well as total profit from businesses in the last 6 months. Estimated impact on

<sup>6</sup> The accounting is “84/(500-175)” done by taking average of 250 and 100 dollars transferred to UCT group.

income (Table 4) correspond to the effects observed on their labour supply and business management. The four cash transfer groups do not have any significant difference in their last months' wage income although nudge intervention resulted in additional \$6 wage income. Compared to the UCT beneficiaries (Group 1), last month income from non-farm businesses are significantly higher for all other three groups. The impact estimates are 5, 10 and 16 dollars for Group 2, 3 and 4 respectively. Similar trend is observed when we look at the impacts on their total last month's income (Column 3). Significant difference (by \$24) between Group 1 and 2 in business income in the last 6 months reinforces the earlier conclusion of improving grant effectiveness by combing transfers for supporting IGAs (Column 4). Using the impact estimates of the additional capital, we find that the \$500 grant recipients (Group 3) need to maintain the additional \$10 income from business for 2.7 years to equalize the additional \$325 transfer whereas the \$1,000 grant recipients need to maintain their extra income for 4 years. The corresponding figures are 3.6 and 4.2 years if we use the impact estimates for last 6 months' income. From this calculation, \$500 of IGA grant appears more cost-effective than \$1,000 grant.

### b. Assets

In this section, we look at the impacts on household physical and financial assets. As noted earlier, very few of the households in this study own livestock and there is no significant difference for the three treatment groups compared to Group 1 (Table 5). For household assets, we counted number of asset items owned out of 13 items.<sup>7</sup> We find significant positive effects on asset ownership for Group 4.

Table 5. Impact on assets and savings

	Whether own any livestock	Number HH assets owned	Have any outstanding loan	Amount of outstanding loans (USD)	Have any savings	Amount of savings (USD)
	(1)	(2)	(3)	(4)	(5)	(6)
Group 2 (One-off low cash)	-0.005 (0.017)	0.185 (0.163)	0.019 (0.034)	2.942 (8.510)	0.083** (0.040)	7.707** (3.607)
Group 3 (medium cash)	0.003 (0.018)	0.100 (0.168)	-0.008 (0.033)	-1.722 (8.642)	0.093** (0.041)	10.552*** (4.027)
Group 4 (high cash)	0.009 (0.019)	0.314* (0.162)	-0.015 (0.033)	-5.094 (8.501)	0.170*** (0.043)	17.693*** (4.317)
Nudge (goal setting)	0.003 (0.013)	0.019 (0.118)	0.008 (0.023)	0.813 (6.110)	0.041 (0.031)	2.411 (3.104)
Group 1 (mean)	0.03	5.40	0.14	30.35	0.15	9.84
Observation	752	752	752	752	752	752
R-square	0.015	0.316	0.131	0.212	0.032	0.030

Note: \*, \*\* and \*\*\* denote significance from the control group at 10%, 5% and 1% respectively. Average value for Group 1 is taken from the follow-up survey for assessing the magnitude of impacts.

There is no significant effect on outstanding loans, either at extensive margin (likelihood of having outstanding loan in Column 3) or intensive margin (amount of outstanding loan Column 4). However, we find significant differences for all three IGA grant recipients compared to UCT groups at both margins. While 15% of the UCT group reported having any cash savings, the effects of IGA grants are 8, 9 and 17 percentage points for Group 2, 3 and 4 respectively. Impact on amount of cash savings is between \$8 and \$18 corresponding to the likelihood of

<sup>7</sup> The assets counted are mobile phone, radio, television, watch, charcoal stove/jiko, wheel barrow, vacuum flask, kerosene lamp, mat, bed, Somali stool and sitting cushion/pillow.

having savings. This impact on savings, especially for Group 2, reinforces the potential benefit of IGA grant over UCT. The primary goal behind UCT is to enable households to maintain a minimum level of consumption, and there are ample evidence on the critical role of savings in consumption smoothing. With the same amount of cash transfers, IGA grant is able to influence savings compared to UCT. Although the \$8 difference seems small in absolute value, this is substantial compared to the average \$10 savings for the UCT group. Larger IGA grants (group 3 and 4) yielding higher impact on cash savings is expected, but the magnitude of the effects (\$11 and \$18 for Group 3 and 4 respectively) are not substantial enough to influence cost-effectiveness comparisons.

### c. Food security and wellbeing

While income and assets are the immediate outcomes of IGA grants, it is important to look into the impacts on food security and household wellbeing for proper comparison with UCT. In Table 6, we present the impacts of IGA grants on household expenditure. We categorized the household expenditures into three groups – food expenditure (in the last one month), recurrent non-food expenses (such as fuel, transport, children’s education in the last one month) and lumpy expenses (such as clothes, utensils, ceremonial expenses in the last 6 months). We do not find any impact on any of the three indicators (Column 1 – 3) for Group 2. However, both medium and high IGA grants recipients have spent larger amount for all three types of consumption. The large IGA grant recipients (Group 3) made additional \$30 lumpy expenses compared to UCT, which is larger than Group 2. However, there is no significant difference in the impacts between the two groups in monthly expenses. Using per capita expenditure as a wellbeing indicator, we find that both Group 3 and 4 are better-off than the UCT group (Column 4 and 5). Despite small effects of nudge on wage income, we do not find any effect on household expenditure.

Table 6. Impact on consumption expenditure

	Last month food expenditure	Monthly non-food recurrent expenses	Last 6 months’ lumpy expenses	Per capita monthly food expenditure	Per capita monthly total exp.
	(1)	(2)	(3)	(4)	(5)
Group 2 (One-off low cash)	0.423 (2.761)	2.511 (6.386)	8.395 (8.492)	0.187 (0.574)	-0.008 (1.486)
Group 3 (medium cash)	11.065*** (3.083)	17.022** (6.829)	13.233 (9.154)	2.431*** (0.627)	3.051** (1.506)
Group 4 (high cash)	5.258* (2.862)	15.966** (6.719)	30.024*** (9.688)	1.173* (0.600)	3.641** (1.529)
Nudge (goal setting)	-1.330 (2.062)	-3.195 (4.822)	-6.561 (6.829)	0.105 (0.430)	-0.163 (1.069)
Group 1 (mean)	58.53	108.48	55.99	10.79	22.19
Observation	752	752	752	750	750
R-square	0.042	0.161	0.164	0.238	0.121

Note: \*, \*\* and \*\*\* denote significance from the control group at 10%, 5% and 1% respectively. Average value for Group 1 is taken from the follow-up survey for assessing the magnitude of impacts.

Table 7 shows impacts of IGA grants on household food security. We use dietary diversity as indicator of food security, which were measured separately for the households and children (aged 2-17 years). There is no significant difference across the treatment arms in either of the indicators. The difference in food expenditure and lack of difference in dietary diversity indicates that there is high level of food insecurity in general, and additional income is used for increasing amount of food consumption than improving diet. To assess the adequacy of food

consumed, we asked the household if every member of their household had enough food to eat in the last one week. We find significant effects of IGA grants on this indicator. Compared to UCT beneficiaries, the IGA grant recipients are 11-15 percentage points more likely to have reported eating enough last week.

Table 7. Impact on food security

	HH dietary diversity score	Dietary diversity score for children	Had enough food last week	Have at least 1 week's food stock	Coping strategy index
	(1)	(2)	(3)	(4)	(5)
Group 2 (One-off low cash)	0.186 (0.264)	0.022 (0.288)	0.106** (0.046)	0.008 (0.038)	-0.792* (0.407)
Group 3 (medium cash)	-0.133 (0.249)	-0.263 (0.276)	0.143*** (0.045)	0.034 (0.039)	-1.397*** (0.380)
Group 4 (high cash)	0.215 (0.255)	-0.061 (0.284)	0.151*** (0.044)	0.067* (0.040)	-1.204*** (0.406)
Nudge (goal setting)	0.114 (0.180)	-0.011 (0.198)	0.009 (0.031)	0.034 (0.028)	-0.169 (0.271)
Group 1 (mean)	5.65	5.50	0.66	0.23	2.66
Observation	752	697	752	752	752
R-square	0.086	0.104	0.043	0.242	0.057

Note: \*, \*\* and \*\*\* denote significance from the control group at 10%, 5% and 1% respectively. Average value for Group 1 is taken from the follow-up survey for assessing the magnitude of impacts.

In the high food insecurity context of the country, amount of food stock available at their house is an important indicator (Column 4 in Table 7). We find significant effects only for the large IGA grants on the likelihood of households having food that can last for at least a week. While 23% of the UCT recipients reported having one week's of food stock, the rate is 7 percentage points higher for Group 4. Coping strategy index (CSI) is another commonly used indicator used to assess food security situation in Somalia. Higher value in CSI indicates lower ability of the households to meet their food needs since they have to rely on more undesired options for securing food. All three IGA grant recipients demonstrate better coping ability compared to UCT recipients. None of the food security indicators shows significant change because of the nudge intervention.

#### 4. Impact on children

Although household poverty is strongly associated with child specific outcomes, various evaluation of anti-poverty interventions have shown that the positive impacts on household income or expenditure do not necessarily translate into better wellbeing for children. In this section, we look at various child specific outcomes and indicators reflective of child wellbeing.

In Table 8, we see that children in households of IGA grant groups do not have more number of meals than the children in UCT groups. The nudge intervention also do not have any effect on this outcome. There is also no effects on household expenditure on children's education although we find a small positive effect on enrolment rates (Table 9). We find positive impacts on household expenditure for children healthcare for the medium and large IGA grants (Group 3 and 4) albeit small in magnitude. Access to sanitary latrine and safe drinking water are household level outcomes, but can have direct implication on children. Although none of the IGA grants groups have significant difference from UCT, the nudge intervention increase the likelihood of using sanitary latrine by 5 percentage points and marginally significant. Treating

drinking water (by boiling or tablets) shows a similar small positive impact of nudge although not significant at conventional level.

Table 8. Impact on investment in children

	Number of meals taken yesterday by children (6-17 years)	Expenses for children's education last month	Expenses for children's healthcare last month	Whether use sanitary toilet	Whether treat water before drinking
	(1)	(2)	(3)	(4)	(5)
Group 2 (One-off low cash)	0.098 (0.063)	-1.111 (1.624)	-0.402 (0.832)	0.037 (0.041)	-0.045 (0.051)
Group 3 (medium cash)	0.096 (0.070)	-1.497 (1.631)	2.162** (0.973)	0.024 (0.042)	-0.048 (0.052)
Group 4 (high cash)	0.067 (0.061)	1.923 (1.690)	2.061** (0.905)	-0.009 (0.043)	-0.018 (0.050)
Nudge (goal setting)	0.068 (0.048)	-0.219 (1.177)	0.015 (0.671)	0.049* (0.030)	0.030 (0.037)
Group 1 (mean)	2.16	13.02	6.83	0.79	0.61
Observation	617	752	752	752	752
R-square	0.076	0.307	0.255	0.010	0.007

Note: \*, \*\* and \*\*\* denote significance from the control group at 10%, 5% and 1% respectively. Average value for Group 1 is taken from the follow-up survey for assessing the magnitude of impacts.

Acquiring human capital through more education is one of the important pathways out of intergenerational poverty. While increase in income can give households greater ability to send their children to schools, IGA grants has the potential unintended consequence of increasing child labour (either for business or at home) that can indirectly influence school enrolment.

Table 9. Impact on children's schooling and labour

	Children of school going age (6-13)			Household have any child labour
	Enrolled (All)	Enrolled (Boys)	Enrolled (Girls)	
	(1)	(2)	(3)	(4)
Group 2 (One-off low cash)	-0.040 (0.032)	-0.024 (0.046)	-0.059 (0.045)	0.001 (0.011)
Group 3 (medium cash)	-0.037 (0.034)	-0.060 (0.047)	-0.012 (0.048)	0.001 (0.011)
Group 4 (high cash)	0.063* (0.034)	0.070 (0.049)	0.059 (0.046)	-0.010 (0.007)
Nudge (goal setting)	-0.001 (0.024)	-0.004 (0.034)	0.001 (0.033)	-0.007 (0.008)
Group 1 (mean)	0.32	0.32	0.32	0.01
Observation	1,483	755	728	752
R-square	0.064	0.050	0.089	0.016

Note: \*, \*\* and \*\*\* denote significance from the control group at 10%, 5% and 1% respectively. Average value for Group 1 is taken from the follow-up survey for assessing the magnitude of impacts.

We find a positive effect of large IGA grant (Group 4) on school enrolment of children in primary school age. Overall, the enrolment rate for the children is very low at 32% and the effect of for Group 4 is 6 percentage points. When we look at the effects on male and female separately, the point estimates of the effects are similar to overall effect (7 and 6 percentage points for male and female) although not significant, which is influenced by the smaller sample size when disaggregated by sex. There is no significant difference in in child labour among the treatment groups. Overall, only 1 percent of the households are found to have any child being

involved in earning activities. This is contrary to a general narrative of widespread child labour at IDP camps and urban areas in the country. However, given the very little economic opportunities in general in these sites, it is not surprising to find low level of child labour.

In terms of impact on child health, we do not find any effect on morbidity. Eight percent of the children in UCT group reported suffering from any illnesses in the last 2 weeks, and the rates are same among all the treatment groups. However, we find significant effect of large IGA grant (Group 4) and nudge on health seeking of female children. Despite the small sample size of children suffering from illness, we find girls were 22 percentage points more likely to have received any treatment and the effect size for nudge is 15 percentage points.

Table 10. Impact on children's health and nutrition

	Children (2-17 years)			Children (6-59 months)	
	Whether suffered from illness	Sought healthcare (male)	Sought healthcare (female)	Weight-for-height z-score	Weight-for-age z-score
	(1)	(2)	(3)	(4)	(5)
Group 2 (One-off low cash)	0.008 (0.019)	-0.172 (0.207)	-0.159 (0.129)	-0.044 (0.141)	-0.134 (0.161)
Group 3 (medium cash)	-0.001 (0.018)	-0.228 (0.201)	0.125 (0.123)	-0.060 (0.145)	0.128 (0.172)
Group 4 (high cash)	0.015 (0.019)	0.173 (0.154)	0.218** (0.103)	-0.085 (0.142)	-0.121 (0.160)
Nudge (goal setting)	-0.005 (0.013)	-0.002 (0.127)	0.149* (0.088)	-0.125 (0.105)	-0.087 (0.120)
Group 1 (mean)	0.084	0.72	0.76	-0.416	-0.663
Observation	1,819	72	91	894	910
R-square	0.003	0.139	0.132	0.011	0.006

Note: \*, \*\* and \*\*\* denote significance from the control group at 10%, 5% and 1% respectively. Average value for Group 1 is taken from the follow-up survey for assessing the magnitude of impacts.

For measuring impact on child nutrition, anthropometric data was collected at follow-up survey. However, this information is not available from baseline. Therefore, the impact analysis for nutrition outcomes do not control for baseline values. We do not find any significant effect on weight-for-height or weight-for-age z-scores for children aged 6-59 months. Since the grants do not have any major effect on dietary diversity, the lack of impact on nutrition is not surprising. With a few exceptions (e.g. IFPRI, 2016), there is a major gap in assessing the impact of anti-poverty programmes on child nutrition. A review of the evidence on comparative cost-effectiveness analysis by Gentilini (2016) conclude that the overall evidence base of impacts of cash transfers on child malnutrition is still limited. Among the few studies that assessed nutritional impacts in Sub-Saharan Africa, Langendorf et al (2014) find that cash transfers alone is not as effective as combining cash with supplementary food. Similarly, small or no significant effects of cash transfers on child nutrition are observed by Berhane et al (2016) in Ethiopia, Evans et al (2014) in Tanzania and OPM (2016) in Kenya. Several other systematic reviews do not find robust evidence of impact of cash transfer on child nutrition (e.g. Manley et al, 2012, de Groot et al, 2017).

## 5. Robustness of Impact Findings

There are several concerns that could influence the interpretation of the results or generalizing the findings. In this section, we discuss implication of a few of the major concerns. Firstly,

resource sharing by the households with their neighbours can have significant influence on the results. For example, if the recipients of larger business grants share cash with others who were less lucky in the lottery, the results could be downward biased. Similarly, informal resource sharing with non-beneficiaries can also influence the difference observed in assets. However, in our analysis of information resource sharing, we find that only 11 percent of the households gave out money (as gifts or credit) to other households. More importantly, there is no significant difference among the four treatment groups in their likelihoods resource sharing or in the size of informal sharing (cash or in kind).

A second concern in interpreting the differences as the causal influence of the differences in grant size is the possibility of the grant size influencing the other supports they receive. It is plausible that the large grant recipients are supported in fewer other programmes in the locality compared to small grant recipients. In the follow-up survey, we asked the households to report all the supports that they have received from formal or informal sources. We find that the cash grants received from the Save the Children projects is the major component of the supports they received, and there is no significant difference in supports received from other sources.

In the study design, we have variation in the size of cash transferred to the small grants groups in Mogadishu and Hiran (see Figure 1). It is not possible to distinguish the differences due to the variation in cash size within the small grants groups from the site level differences. Although we control for site fixed effects in the analysis, it is of interest to explore whether the effects varied between the sites. With the concern of smaller sample size for site level disaggregated results, we find that the directions of the main results (i.e. positive effects on business ownership, business income, assets, savings and consumption; and limited impact on children) to be qualitative similar. The magnitude of effects on business income is larger in Mogadishu compared to Hiran although the UCT group in Hiran received lower transfer than those in Mogadishu. This could possibly be influenced by higher level of economic opportunities in Mogadishu.

In randomized experiments that involve public lottery, there are often concerns about “discouragement effects” on the beneficiaries who receive smaller supports. Although our discussion with field officers did not reveal such concerns, it is not possible to rule out the possibility of such effects. Finally, the results observed in this study may not be generalizable for substantial scale of the same business grant supports.

## **6. Conclusion**

Cash transfers in different forms is a major component of most social protection programmes, and becoming more common in both development and humanitarian programming in recent years. Unconditional cash transfer (UCT) made in monthly instalments is expected to support households with consumption smoothing, and various studies confirm its effectiveness in improving food security. However, such transfers do not necessarily have much impact on household asset building. Business grants, on the other hand, are found to be effective in assisting households to build their asset base and foster income growth, which are key elements for household resilience building. However, the effects of most of these programmes on children’s are usually limited and are generally not significant, with the major exceptions for conditional cash transfers.

In this study, we compare the livelihood and children level outcomes of four types of transfers to measure the marginal effects of business grants compared to UCT about five months after

the transfers completed. We find that small business grants have positive effects on business ownership, business income, savings and food security compared to monthly UCT. Therefore, lumping monthly UCTs into “chunky” transfer can be considered as an option to improve cost effectiveness of such transfers. Larger grants have positive returns in term of business income and household assets. Based on the effects on income, we find that a business grant of \$500 is more effective than the large grants of \$1,000. In terms of effects on children, we find limited effects on school enrolment for the large business grants group. The study also piloted a behavioural “nudge” as part of the baseline survey to improve child wellbeing, which had significant effects only on one outcome – expenses for healthcare for girls who were sick. However, there could be alternative “nudges” that can be more effective.

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Table A1. Determinants of attrition

VARIABLES	Coefficient	(SE)
Group 2 (Small business grant)	0.007	(0.022)
Group 3 (Medium business grant)	-0.074	(0.023)***
Group 4 (Large business grant)	0.006	(0.023)
Household size	0.003	(0.003)
Number of HH members involved in earning	-0.075	(0.026)***
Whether have any child labour	0.057	(0.050)
Total number of days worked in earning by all members	0.002	(0.001)**
Whether had any wage income last month	0.017	(0.027)
Whether had any non-farm business income last month	-0.021	(0.019)
Whether involved in cultivation	-0.103	(0.065)
Whether involved in livestock rearing	0.021	(0.041)
Total income earned in last month	-0.000	(0.000)
Whether have outstanding loan	0.023	(0.019)
Whether have cash savings	-0.006	(0.025)
Household dietary diversity score	0.007	(0.004)*
Had enough food for everyone to eat in last week	0.012	(0.017)
Amount of food expenditure last month	0.001	(0.000)*
Amount of non-food recurrent expenditure	0.000	(0.000)
Amount of lumpy expenses last six months	-0.000	(0.000)
Whether received nudge questions	-0.037	(0.016)**
Constant	0.908	(0.037)***
Observations	795	
R-squared	0.061	

Note: \*, \*\* and \*\*\* denote significance from the control group at 10%, 5% and 1% respectively

Table A2. Balance in baseline characteristics

Baseline characteristics	Control (mean)	Differences from control group				
		Group 2	Group 3	Group 4	Nudge	Hiraan
Household size	5.713	-0.009	0.442*	0.348	-0.079	1.140***
Number of member involved in IGA	0.667	-0.001	0.140**	0.172***	-0.063	-0.062
Any child labour	0.057	-0.015	-0.024	-0.020	0.012	-0.032**
Number of days worked last month by all household members	12.037	1.019	3.986**	4.723***	-1.582	1.503
Whether have wage earning	0.317	0.022	0.054	0.061*	-0.031	-0.317***
Whether earned from micro-enterprise	0.194	0.060	-0.015	-0.003	-0.033	0.507***
Whether engaged in cultivation	0.022	-0.000	-0.000	0.015	-0.003	-0.019**
Whether engaged in livestock rearing	0.026	0.004	0.020	0.014	-0.007	0.018
Total income last month	27.332	9.986	3.189	8.372	-8.060	20.066***
Whether have outstanding loans	0.456	0.022	0.044	0.047	-0.033	0.303***
Have any savings	0.137	-0.041	-0.041	-0.034	-0.036	0.102***
HH dietary diversity score	4.443	-0.030	0.299	0.344	0.115	0.554***
Had enough food last week	0.605	-0.019	-0.061	0.021	0.020	-0.222***
HH food expenditure last month (USD)	40.329	1.010	6.263*	5.254	-0.326	22.514***
Other monthly expenses (USD)	66.842	-7.976	4.977	7.005	-3.928	50.714***
Lumpy expenses last 6 months (USD)	44.129	-25.501	-7.700	34.697*	-16.445	159.736***

Note: \*, \*\* and \*\*\* denote significance from the control group at 10%, 5% and 1% respectively. The balance estimates are shown for the 752 households who are in the full panel. Control mean is the UCT (Group 1) beneficiaries from Mogadishu who did not receive the goal setting questions.