The returns to cash and microenterprise support among the ultra-poor: A field experiment*

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Abstract

Do the "ultra-poor" have high returns to capital or are they otherwise constrained? Impoverished Ugandans, mostly women, were experimentally offered individual business training, $150, supervision, and business advising. We evaluated the full package plus the marginal effects of components: supervision (pressure to invest); advice; and stronger social networks (via group formation). 16 months later, microenterprise ownership and incomes double. Supervision and advice weakly increase initial investment but have little long-run impact. Group formation raised earnings through cooperative activities, suggesting social capital is an important input. Overall, the economic returns to cash appear high. We see little effect, however, on empowerment. (*JEL codes:* J24, O12, D13, C93)

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1 Introduction

Many of the world's poor live in economies with little regular wage employment, and so they necessarily become "entrepreneurs" in that they run their own family farms and petty businesses. These microenterprises tend to be small, inefficient, and undifferentiated (Behrman, 1999; Banerjee and Duflo, 2011). A number of studies suggest existing microenterprises have high marginal returns to capital and insurance.[1] These findings support the idea that a lack of capital combined with financial market imperfections are prime barriers to self-employment, and that anti-poverty programs should focus on improving financial markets or provide transfers of capital or cash.

It is not clear whether the same is true for the most marginalized and "ultra-poor" people—those who have the very lowest incomes, almost no capital or business, and limited social networks. On the one hand, returns to microenterprise growth on the extensive margin might be even higher than on the intensive margin. Indeed there is growing evidence that poor households use cash to start new enterprises and earn high returns (although little of this evidence comes from the poorest of the poor).[2]

On the other hand, the poorest people's returns to capital could be low because they lack other important inputs or face other frictions and constraints. They often lack basic education or business skills. Extreme poverty is also associated with cognitive or behavioral problems that impede investment (Bertrand et al., 2004; Mani et al., 2013). They could also lack the social networks that, in peasant societies, are prime sources of advice, public goods, and informal finance.[3] Among women, moreover, traditional social norms could also pressure them to share capital or earnings, or hinder their business growth (e.g. Di Falco and Bulte, 2011; Field et al., 2010). Women may also lack autonomy and see their capital or earnings diverted (Tauchen et al., 1991).

Such concerns may explain why ultra-poor programs commonly transfer

[1] de Mel et al. (2008); Fafchamps et al. (2014); Udry and Anagol (2006); Karlan et al. (2012).

[2] See Macours et al. (2012); Gertler et al. (2012); Blattman et al. (2014); Bianchi and Bobba (2013); Haushofer and Shapiro (2013).

[3] See Scott (1976); Fafchamps (1992); Foster and Rosenzweig (1995); Murgai et al. (2002).

productive assets (such as livestock) rather than cash, and provide services such as training and income support alongside assets (Banerjee et al., 2010). It may also explain why, when programs do provide cash, they commonly combine it with training, conditions, or supervision, or require people to form groups (e.g. Blattman et al., 2014).

This paper examines cash transfers to one of the poorest and most marginalized groups in the world: young adults, mainly women, living in 120 small rural villages in post-war northern Uganda. Most villagers are poor, underemployed farmers. In each village a nonprofit organization tried to select 15 of the poorest people. 86% were women. It provided them a grant of $150 (equal to nearly 18 months cash earnings) along with five days of business skills training and ongoing "follow-up visits" that provided substantive advice as well as supervision and pressure to implement the business plan.

We evaluated the full program by randomizing villages to immediate versus delayed treatment 20 months later. We also used a partial factorial design to evaluate the marginal effects of several program components. Receiving training and grants could have strengthened bonds among village beneficiaries and induced them to cooperate, share ideas, or informally insure one another. We could not turn this component off. Thus, among the immediately treated villages we randomly intensified it to test the effects of groups on the intensive margin. In the second phase, when the delayed treatment group received the program, we also randomized people to an unsupervised grant, one to two supervisory visits (to provide accountability to invest), or multiple visits for both supervision and substantive business advising.

Our aim was to help answer four questions. First, does putting financial capital in the hands of the poorest yield new occupations and high returns to capital? Second, can interventions such as supervision counter behavioral or social pressures that may limit investment? Third, does social capital contribute to enterprise success, and can it be spurred by simply encouraging excluded people into groups (a surprisingly common practice in rural development programs)? Finally, are rising incomes and work "empowering" in that they increase autonomy and bargaining power?

Comparing the initial treatment group to the wait-list 16 months after

grants, the proportion of people with any nonfarm business doubles from 39% to 80%, their employment rises from 15 to 24 hours per week, household consumption rises by a third, and individual cash earnings rise by 95%. The effects are comparable for men and women. Since the average person in the control group only earns about $2 a week in cash, the absolute change in earnings is not large. But the marginal utility of additional consumption from such low initial levels is undoubtedly high.

The marginal impacts of supervision and advice were modest, even though they represented nearly half the program cost. A month after grants, people expecting any follow-up increased the share of the grant invested from 27% to 32%. After a year, supervision and advice increased business survival but not incomes. In fact, we see little evidence of the social or behavioral constraints that follow-up was designed to address.

Finally, encouraging beneficiaries to form groups strengthened their social interactions and support, resulting (by some measures) in an earnings gain. There was no evident effect on business start-up or survival, but cash earnings rose substantially among those in groups, in part because of increased informal finance, idea exchange, and cooperative farming. Other income measures, including consumption and durable assets, do not increase, however, and so we regard this income effect of groups cautiously. Nonetheless it suggests that associational life is easily promoted, at least among the initially excluded, and that such social capital is important to financial life and success.

Despite large relative economic gains, however, we see little evidence of a change in autonomy and intra-household bargaining power, whether self-reported or in terms of actual expenditures. A companion paper shows there is no effect on domestic violence Green et al. (2014). Outside the household, however, treated people report rises in community support and participation.

These results come with some caveats. We could not randomize all components, and cannot separate the effects of cash from the basic training and framing. All measures are also self-reported, and thus impacts could be overstated by social desirability bias in treated villages. We argue, however, that the size of impacts, the number and complexity of questions, and the fact that we do not see such bias in self-reported empowerment mitigate this con-

cern. Furthermore, there is some randomization imbalance, and 4% attrition at endline. Treatment effects, however, are robust to difference-in-difference estimates and to conservative missing data scenarios. Finally, these are 18-month impacts and we cannot say whether they persist.

This paper makes several contributions. First, there is limited evidence on the effects of cash or capital injections on the poorest and unemployed, especially women. Our results complement research that finds high returns on the intensive margin, largely among male entrepreneurs.[4] Of course, the returns to capital in northern Uganda may be unusually high because of the post-conflict context.[5] At the same time, most African countries have seen renewed political stability and high growth in the past decade, so the out-of-equilibrium situation in Uganda may not be so exceptional. High returns to cash and skills elsewhere in Uganda bolster this view.[6]

Second, the results suggest that cash transfers compare favorably to more common approaches to extreme poverty, such as asset transfers. "Graduated" programs (which provide income support, livestock transfers, training, plus access to microfinance) have demonstrated increases in household consumption between 11% and 36% compared to control groups (Banerjee et al., 2010; Bandiera et al., 2013; IPA, 2014). The program we evaluate shows impacts at the upper end of this range (rises of 33% in non-durable consumption and 95% in cash earnings). It too is an expensive package of services as well. But since the marginal effect of the most expensive components (especially follow-up) is small, it suggests that lower cost interventions that emphasize cash to the poorest could be impactful and cost-effective. Evidence from unconditional cash transfers to the poor in Kenya and El Salvador are consistent with this view (Haushofer and Shapiro, 2013; Macours et al., 2012).

[4]Studies in South Asia have shown that social constraints limit women's entrepreneurial potential (Field et al., 2010; de Mel et al., 2012b). Our results suggests these social constraints do not bind firmly everywhere. Indeed, the effects we see are similar to the returns to cash and skills among wealthier rural women and adolescent girls in Uganda (Bandiera et al., 2012; Blattman et al., 2014).

[5]A study in post-tsunami Sri Lanka finds a slow return of firms to pre-disaster capital, that firms that received capital grants recovered sooner, that returns to capital were twice as high in damaged areas, and that capital had the largest impacts on recovery of retail firms (de Mel et al., 2012a).

[6]See Bandiera et al. (2012); Blattman et al. (2014).

Third, this evidence supports the view that many of the poor have high returns to financial capital but are constrained by missing credit markets (e.g. Banerjee and Newman, 1993; Banerjee and Duflo, 2011). The impact of the group encouragement, however, suggest that other factors such as trust, co-operation, and social networks also constrain returns to some degree (yet are not necessarily difficult to stimulate).

Fourth, our results run counter to a literature linking women's incomes to autonomy and increased spending on children or females (Doepke and Tertilt, 2011; Duflo, 2012). We discuss several reasons the effects of this program could differ, including ease of observation, uncertainty, and context. We also note, however, that several transfer programs have failed to find impacts on empowerment, and it is possible that as more experimental evidence emerges the conventional wisdom on gendered preferences and behavior will be revised.

2 Context, intervention, and experiment

Northern Uganda is an impoverished region in an otherwise poor but growing country. From 1987 to 2006, northern Uganda was plagued by a low-level but brutal insurgency. Rebels conscripted and terrorized civilians, and to fight the insurgency the government forcibly displaced nearly two million people into dozens of nearby camps. Most households lost livestock, housing, and other assets as a result of the war. In 2007, two-thirds of households were unable to meet basic needs (Government of Uganda, 2007).

By 2006 the rebels were pushed out of the country and by 2007 the displaced began to return home and rebuild. The economy began growing quickly, aided by an increase in demand from a peaceful Sudan. By 2009 most had rebuilt their homes and had begun farming again.

2.1 The program

A non-profit organization, the Association of Volunteers in International Service (AVSI), developed the Women's Income Generating Support (WINGS) program in order to help the poorest and most marginalized "clients", mainly

young women, start a new microenterprise, and thereby increase their incomes, autonomy, and social engagement. The typical program had four components:

Basic skills training Clients received five days of business skills training, ending with the client preparing a simple business plan. Training was designed for the illiterate and focused on business planning, sales, marketing, record-keeping, and budgeting (see Online Appendix A). Field workers reviewed plans with the client and returned unsatisfactory plans for revision. Field workers encouraged clients to consider high cash flow activities that would diversify their income sources. They strongly encouraged petty trading (buying items in the city and reselling) over investing the grant in alcohol brewing or livestock.

Cash Once a plan was approved, the client received a grant of 300,000 Ugandan shillings (UGX), about $150, framed as funds to implement the business plan. AVSI delivered cash in two equal installments about 2 and 6 weeks after training. Except in exceptional circumstances, the grant was not conditional on performance. Their aim was to disburse all grants, but also to maximize the quality of plans.

Follow-up AVSI's field workers travelled four to five times to the villages in the six months after the grant to provide one-on-one advising and supervision.

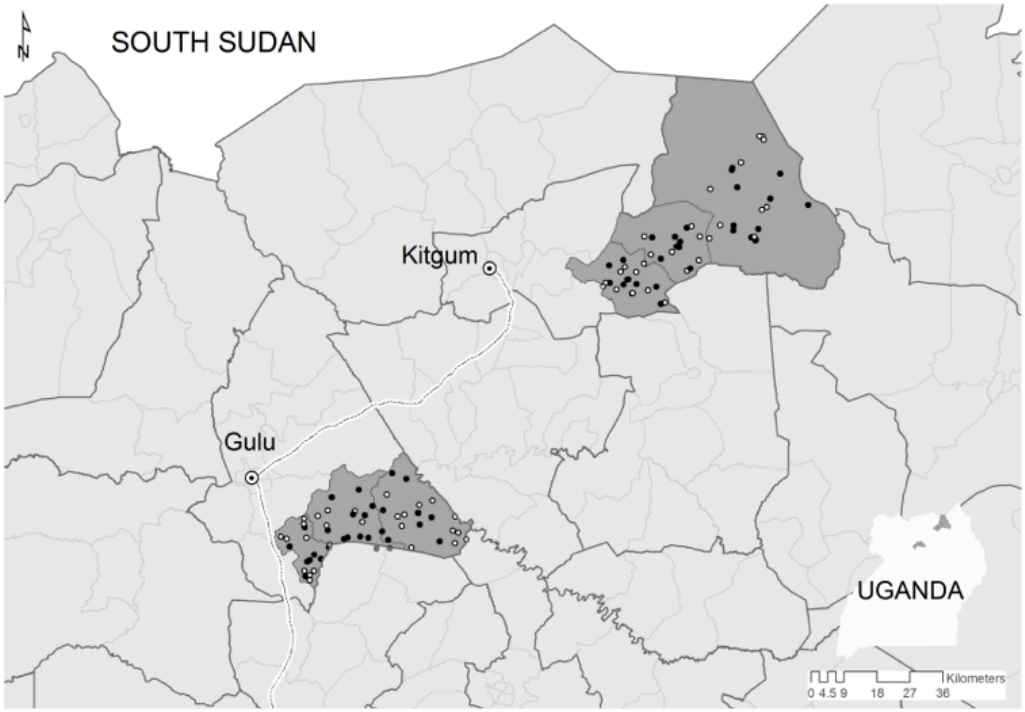
Groups AVSI also offered "group dynamics training" that encouraged clients in the village to form support networks, share information, and save together. Topics included leader selection, decision-making, conflict resolution, and instructions on setting up and organizing a savings group. Once groups decided on aims and organization, field workers helped them write a "constitution". Clients were encouraged to start individual enterprises, however, not cooperatives. Group encouragement followed grants by many weeks for this reason.

The full program—training, cash, and follow-ups—cost $778 per client, including roughly $350 for full follow-up and $82 for group dynamics training.

2.2 Recruitment and sample selection

In February 2009, AVSI identified 60 villages in both Kitgum and Gulu districts.[7] Figure 1 maps villages. Villages generally have 80 to 200 households and represent about a quarter of the population of the six subcounties where AVSI was active.[8] We estimate client households in treatment villages are equal to about 1.6% of all subcounty households.

Figure 1: Villages in the study sample



Notes: Only villages eligible for the study and intervention are displayed (roughly 40% of all villages in the six highlighted sub-counties). Thick and thin lines indicate district and sub-county boundaries. Villages assigned to Phase 1 are represented by black circles. Villages assigned to Phase 2 are hollow circles.

[7] AVSI excluded villages with fewer than 80 households and then allocated program spots proportional to parish population.

[8] Several villages form a parish, several parishes form a subcounty, and several subcounties form a district. AVSI actively worked in six subcounties—Odek, Lakwana and Lalogi in Gulu and Omiya Anyima, Namokora and Orom in Kitgum. These have 252 total villages (84 in Gulu; 168 in Kitgum). Official population figures did not exist and estimates are based on November 2008 data from AVSI and the United Nations.

In February and March 2009, AVSI held community meetings to describe the program and asked communities to nominate 20 of the most marginalized villagers, asking that three-quarters be women aged 14 to 30. From February to April 2009, AVSI staff interviewed each nominee and selected 10 to 17 clients per village, excluding relatives of leaders and the least poor.

2.3 Experimental procedures and implementation

We evaluated impacts using a randomized wait-list design, partly to mitigate AVSI's concerns about measuring but not assisting the ultra-poor. We also randomized program components within the initially treated group and the wait-list group. Figure 2 illustrates the sample, design, and timing.

Following a baseline survey of all 1800 clients in April to June 2009, the authors gathered leaders from eligible villages in each district. We drew village names from a basket without replacement until all were assigned to either immediate treatment of training, cash and follow-up (Phase 1) or the wait-list (Phase 2), whom we announced would receive the program in roughly 20 months.[9] We also randomized 30 of the 60 Phase 1 villages to receive group dynamics training (via computer).

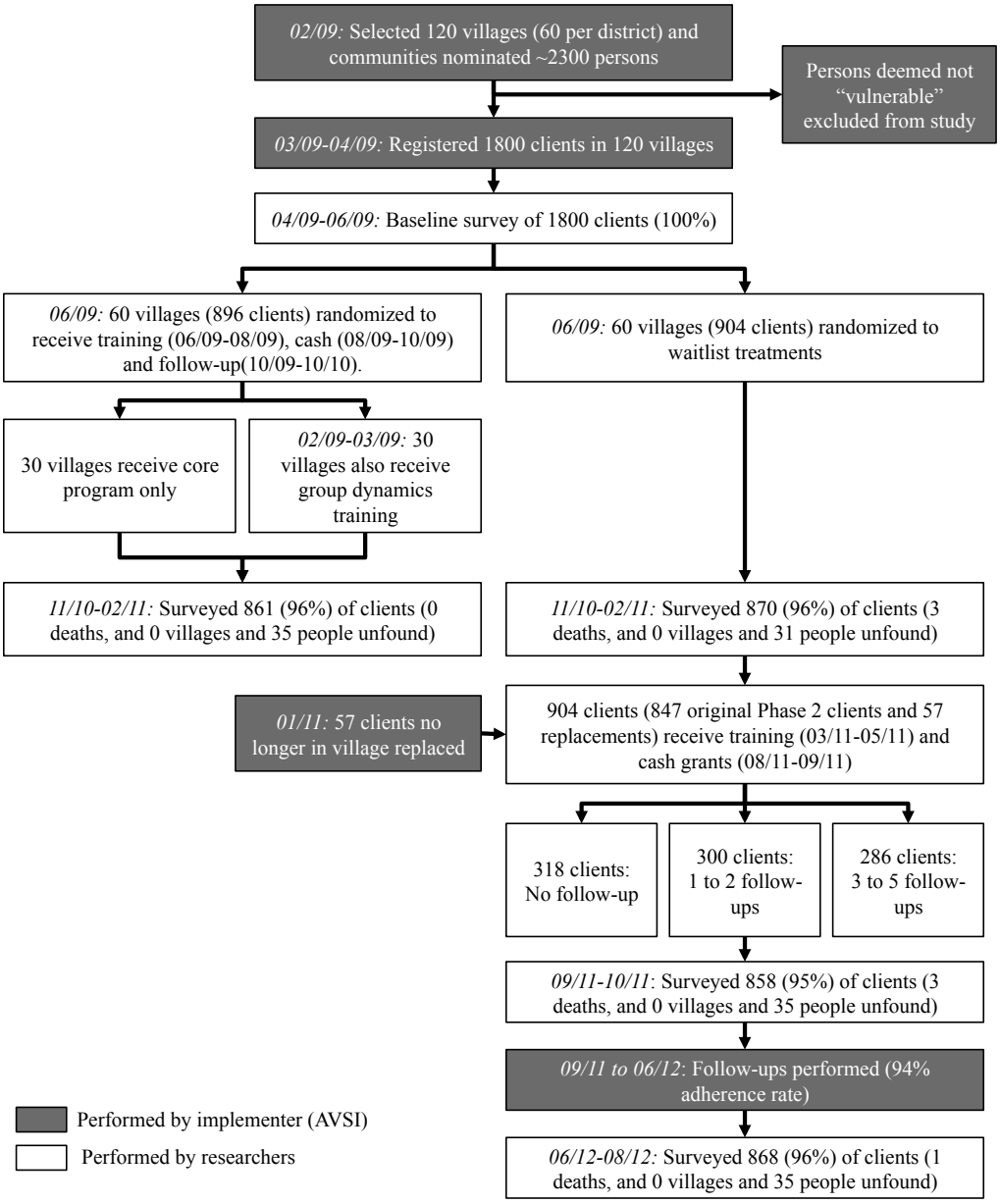
We designed Phase 2 to evaluate the marginal impact of the highest-cost component, follow-up.[10] To distinguish the effects of supervision and accountability from advice, the 900 Phase 2 clients all received training and cash (in a single tranche) but were randomly assigned to clear statements that AVSI would: (i) not return to visit them in future; (ii) follow them up once or twice to confirm implementation of the business plan but not provide substantive advice; or (iii) follow them up to five times, to provide accountability but also substantive advice on business management and household bargaining.[11]

[9] In Phase 2, AVSI increased grants to 360,000 UGX to account for inflation.

[10] 30 of the 60 villages were also randomized to have spouses formally included in the training and planning, and present at the grant disbursement, described in a companion paper Green et al. (2014).

[11] We randomized via computer at the individual level, blocking by village. Before Phase 2 began, 57 of the 904 clients assigned to Phase 2 had died or left the village and were no longer eligible. In February 2011, AVSI replaced these clients with others from the same village following the same nomination and screening procedures described above. We conducted a baseline survey with all.

Figure 2: Description of the study sample and experimental design



3 Data and description of the sample

To evaluate Phase 1, we attempted to survey all 1800 clients, 17 months after baseline and 13 months after the first grant tranche (at the median). To evaluate Phase 2, we attempted to survey all 904 clients roughly a month after the grant (before the first follow-up) to assess actions and investments, and again a year after the grants.[12]

Attrition was minimal. We surveyed all clients at baseline and collected village data from leaders. At the Phase 1 endline, we tracked migrants to their location and found 96.3% of clients (not including three who died). Of the 904 Phase 2 clients we found 95% at the 1-month survey and 96% at the 1-year survey. Attrition at both endlines is generally not significantly correlated with treatment or baseline covariates (see Online Appendix B).[13]

Study sites and participants On average the villages in this region are small, remote, and impoverished. Table 1 lists sample village and client traits. Most villages range in size from 350 to 1000 people, with an average population of 699 (about 100 households). Thus the program treats roughly 15% of village households. 26% of villages have at least a weekly market, and while on average there are three shops or kiosks selling goods the median village has none. Access to finance is poor and markets are poorly integrated with the country because of distance, poor roads, and transport costs. Most goods are imported from the district capital and retailed by a handful of shop owners.[14]

[12]Enumerators conducted in-person surveys in the local language using handheld computers. The baseline was run at a time of intensive planting and weeding, shortly before the lean season began. The Phase 1 endline was run at a time of planting and harvesting at the outset of a dry season (during which dry season crops are produced and nonfarm activities such as brick-making are common. Major activities include the sale of crops and animals for festivals and payment of school tuition fees. The Phase 2 endline was conducted during a time of wet season planting and the beginning of the main harvest. But mid-May through mid-July can be the "hungry" months in northern Uganda, and the survey straddles these.

[13]In addition to these survey data, we collected formal qualitative data to better understand program experiences, constraints, and mechanisms. Two Ugandan research assistants interviewed 32 randomly selected clients in eight villages three times during and after the program. They followed semi-scripted questionnaires and recorded, transcribed, and translated all interviews and notes.

[14]As discussed in Blattman et al. (2014), competition may be imperfect because high transport costs and a credit-constrained population. A pre-program market study of the

Outside of traditional occupations (e.g. subsistence agriculture, casual labor), the main opportunities come from petty trade and retail, cottage production (e.g. bricks, charcoal), livestock rearing, and cash crops. These entrepreneurial occupations are capital-intensive and have modest fixed costs.

The average member of the sample was 27, had 2.8 years of education. Half were married or partnered. 86% were female.[15] They reported an average of 15 hours of work a week in the past month, mainly in their own agriculture. Just 3% did any petty trade or business.

In general they were poor with no access to finance. Average cash earnings were UGX 8,940 ($4.47 at 2009 market exchange rates) in the past month. Formal insurance was unknown and almost no formal lenders were present in the north at the outset of this study in 2008. Only 9% of the sample were members of a village savings and loans group. On average they had UGX 4,860 ($2.42) in cash savings and a nearly equal amount in debts, usually from family and friends. 24% say they could get a loan of $7.50, and just 4% a loan of $50. Formal loan terms seldom extended beyond three months, moreover, with annual interest rates of 100 to 200%. Because of high fees, real interest rates on savings were typically negative.

The war affected and displaced everyone in the sample. Exposure to war violence was universal. 22% of people our sample were abducted into the armed group at some point, even if only for a few days to carry looted goods. Only 5% of the sample were fighters or forced to marry a rebel commander.

Randomization balance In general, there was moderate imbalance in baseline covariates across treatment groups, in particular assignment to Phase 1. The authors were present for the public draw for Phase 1, and we are confident any imbalance reflects natural imbalance. Table 1 reports the results from an

villages argued that many villages had no or very few regular shops; that even the regional semi-regular markets (usually located near the subcounty capital) were typically small with few, mainly local sellers; that there appeared to be high demand for "imported" goods but little supply; that a few larger traders had been in business for long and commanded larger profits and a share of the market; but that there was increased entry from very new, very small traders; and that the strongest correlates of profits were starting capital and buying from the capital rather than an agent or middlemen (Fiala, 2009).

[15]Summary statistics by gender are in Online Appendix B.

ordinary least squares (OLS) regression of each covariate on a treatment and a district indicator for each treatment.[16] In villages assigned to Phase 1, the clients have slightly lower hours of work (especially agricultural work), durable assets, savings group memberships, and family and community support. They are also slightly less likely to have a market. In general, these patterns suggest the treatment group may be slightly worse off, and so should not lead to the overstatement of any treatment effects. In total, 23% of the (non-independent) covariates have a p-value less than .10. To account for possible bias, we will control for these covariates in all treatment effects estimates and show robustness to difference in difference measures. In general, however, we will see that the influence of this imbalance is minor.

4 Conceptual framework

To structure predictions and motivate the design, we outline a simple theoretical lens for the study. Under what conditions do we expect the poorest to start new, profitable enterprises as a result of business training and a grant, with or without supervision and advice? This section presents an intuitive framework drawing on a Ramsey model of investment with occupational choice and heterogeneous individuals, detailed in Online Appendix C.

A key insight from standard theory is that, in the absence of market imperfections, a windfall of financial capital should not affect occupational choice, investment, or earnings. People have an efficient scale of production, and when financial markets work well they will invest in the skills or capital required to maximize their earnings, borrowing as necessary. In this case, a program such as WINGS would only affect occupational choice if it changed aptitude and ability through the training. Otherwise, market imperfections such as incomplete insurance or credit markets are required for cash to lead to new investment. A program like WINGS could also affect occupational choice and investment if it helped people to permanently overcome some social or behavioral constraint. We consider each in turn.

[16] We report balance for all 70 covariates in Online Appendix B.

The model also illustrates a second insight: that there are many conditions where people invest windfalls in enterprise, but of the standard imperfections, credit constraints are most consistent with a large and sustained impact on occupational choice and earnings. Other constraints, such as time-inconsistency alone, are not consistent with high returns to cash windfalls. These other constraints magnify the adverse effects of credit constraints, however, and as a result, relieving them should increase returns to cash.

Specifically, we consider the case where people may choose between two sectors: traditional labor-intensive work (e.g. subsistence agriculture and casual labor) and capital-intensive small enterprise (mainly non-farm, but also cash cropping). Both use labor and production depends on a person's innate, sector-specific abilities. The enterprise sector also uses physical capital and may have a minimum capital requirement for start-up. People vary in their initial wealth and can either consume, save, or invest their earnings and wealth.

In the "benchmark" case of perfect markets, people can borrow and save at the market interest rate, r. Those with an affinity for enterprise ("high-ability") will operate enterprises at efficient scale, with the capital-poor borrowing until marginal returns equal r. Such people will save or consume an unrestricted windfall.

Of course, programs could restrict the use of windfalls by distributing in-kind capital or imposing conditions. WINGS is restrictive in the sense that planning and follow-up may compel initial investments. In perfect financial markets, this will cause low-ability types to start inefficient enterprises and high-ability types to expand beyond efficient scale. Earnings and entrepreneurial labor will rise, but returns will be "low" in the sense that they are less than r. Both types will want to divest, slowed only by "flypaper effects" that make capital investments "sticky". To expect investment and high returns from a windfall, it must help overcome some constraint.

The obvious candidates are savings and credit constraints. Both are consistent with sustained investment of a windfall, but of the two, only credit constraints are consistent with returns that are "high" in the sense that they exceed r.[17] Another candidate is uncertainty and imperfect insurance. Risk-

[17]To see this, consider the case where people can borrow but not save. Enterprises are the

averse people will reduce production below efficient scale in an environment with uncertainty unless sector risks are negatively correlated. The risk-averse will invest part of an unrestricted windfall and earn returns greater than r. However, if both sectors are equally risky, it's unlikely that people are far enough below efficient scale that, absent credit constraints, they will mainly invest windfalls and earn high returns.[18]

Finally, we consider time-inconsistency.[19] In perfect financial markets, cash windfalls will not affect investment levels or returns even among the present-biased. Time-inconsistency could reduce production levels below efficient scale, but people will optimally choose to produce at this inefficient point. A windfall will simply be consumed and saved. If a grant is restricted, or if business planning and repeated follow up promote initial investment, the time inconsistent will divest when supervision is over. The time-inconsistent require some other constraint, such as missing credit markets, for a windfall to be invested and produce high returns.[20] A cash windfall plus some commitment to initially invest could produce high and sustained returns.

The WINGS program is targeted at such highly constrained individuals. A question is whether some other constraint binds them. The villages are remote and poorly connected to markets, potentially limiting the marginal returns to capital. Many of the women report low levels of empowerment and

only means of savings and so more people will invest. But these enterprises will be inefficient in that marginal returns are less than r. Under a credit constraint, however, marginal returns to capital will exceed r among the poor. They should invest a cash windfall and earn "high" returns (greater than r). Low ability types may save most of a windfall. If restrictions force them to invest, they will earn low returns and eventually divest.

[18]Enterprise must be much more risky than traditional labor to generate a large distortion (Bianchi and Bobba, 2013). Trading in Uganda, however, is not clearly riskier than agriculture and casual labor.

[19]e.g. One can also imagine social pressures that resemble such time-inconsistency. For example, women might have limited control over their finances, especially if windfalls are easier for spouses to capture than regular earnings (Fafchamps et al., 2014).

[20]In this case, the effect is multiplicative: restricted windfalls will result in higher returns when people are both credit constrained and time-inconsistent than when someone is credit constrained alone, at least in the short term. Note, if there is a fixed cost to starting a business and to divesting, then it is possible that a time-inconsistent type would never start a business even in perfect financial markets, but would start a business and not divest after a cash windfall. This is another form of constraint, but it is less likely to apply in this case because it only applies to a small margin.

independence at baseline, implying their windfalls, capital, and/or earnings could be expropriated.

The two main additional intervention components, follow-up visits and group formation, can also be thought of within this conceptual framework. The full five follow-ups are meant to directly improve business operations through advice, so this should increase recipients' production functions, improving output for any level of input, through some mix of higher ability and better 'technology'. This raises the attractiveness of the entrepreneurial sector relative to the agricultural sector and will thereby affect occupational choice and earnings.

Indirectly, the knowledge that follow-up visits will occur should increase accountability and manifest a flypaper effect, as discussed above. The impacts should be largest on the time-inconsistent.[21]

Finally, group formation could shape trust levels, idea (technological) diffusion, or informal insurance and credit markets. Improved trust could help solve collective action problems, such as capital and labor sharing at peak harvest times or cooperating to take advantages of economies of scale in trading. To the extent that participants believe that outcomes will be (more) positively correlated after group training, they may also believe – rationally or not – that it "raises the stakes" on their own behavior by inducing spillovers.

5 Results

Nearly all clients received the training and grants: 96% in Phase 1 and 98% in Phase 2.[22] Of those who received a grant, 94% said they felt "very" or

[21] Any accountability and salience of the future may change discount rates, increasing patience or time-consistency, both of which would increase investment (and returns) among the credit constrained.

[22] The main reasons for not receiving a grant were death or migration, in which case someone outside the study sample received the program instead. In Phase 1, roughly 1% did not receive a grant because of a psychological or family problem, or (in 0.3% of cases) concerns about use of the first tranche. The only major deviation from plan came in Phase 1 with the two-tranche grant disbursement of grants, where there were delays of several weeks, in part because of the difficulty of accessing many villages. The median client received their first tranche roughly 1 week after completing training and the second tranche a further 4 weeks later. Nearly all had received their second tranche within 6 weeks of the training.

"somewhat" free how to spend it, and on average relatively small proportions were given to other members of the household (<1%) or other community members (<1%). 95% of clients made business plans for the buying and selling of goods—generally produce or some assortment of food and small household items. About 5% made a plan for butchery, livestock, or other business.

In debriefing sessions, AVSI staff emphasized that this population had very little experience with business, leading to mistakes and risk aversion. They reported that culturally in these villages women seldom handled large sums of money or business. AVSI also perceived that farming rather than the new enterprise was most clients' top priority. In follow-up, alcohol abuse by husbands and other household males was a recurring source of social and economic stress for many households. Our qualitative work confirmed these impressions.

5.1 Empirical strategy

We estimate intent-to-treat (ITT) effects via the OLS regression:

$$T_{ij} = \theta T_j + \delta_T D_j^T + \delta_A D_j^A + X_{ij}\beta + \varepsilon_{ij}$$

where Y is an outcome for client i in village j, T is an indicator for treatment (e.g. assignment to Phase 1 versus Phase 2), X is a vector of controls that includes a district fixed effect and 70 baseline covariates (a full list is in Online Appendix B).[23] Robust standard errors are clustered by village.

The terms D_j^T and D_j^A are measures of distance from the village to all other treatment villages and all other villages. We include them to account for and estimate potential spillovers from clients in treatment villages to those in wait-list villages. The average wait-list village has at least five treatment villages within 10km, and many villages share markets. We can identify cross-village externalities using exogenous variation in the local density of treatment villages generated by the randomization, conditional on the density of all villages in the sample (Miguel and Kremer, 2004).[24]

[23]Several outcomes have a long upper tail, and some large values are potentially enumeration errors. Extreme values will be influential in any treatment effect, and we therefore top-code all currency-denominated and hours worked variables at the 99th percentile.

[24] That is, D_j^T is a random variable conditional on D_j^A. Previous papers estimate distance measures as the number of villages within a fixed radius. We use a less dichotomous measure:

There are two other threats to identification. One is that wait-listed clients could have responded strategically to the expected grant and delayed investments. At the Phase 1 endline, half of wait-listed clients reported starting a business since baseline, suggesting many do invest, but in principle this investment could have been curtailed by expectations of future treatment.

A second threat is that, since outcomes are self-reported, we will overestimate the impact if the treatment group over-reports well-being due to social desirability bias, or if the controls under-report outcomes in the (mistaken) belief that they could be dropped from eligibility. We feel these biases are small or implausible for three reasons. First, since control subjects expect treatment they may have similar social desirability bias as treatment subjects. Second, misreporting would have to be highly systematic: income and employment was collected through more than 100 questions across 25 activities, and assets and expenditures were calculated from 150 questions. Third, as we will see below, we observe no impact on autonomy or domestic violence, meaning that incentives to misreport would have to be confined to economic outcomes.

5.2 Program impacts by gender

The Phase 1 full program—the training, grant and follow-up—leads to large increases in income, employment and financial access. Table 2 reports ITT estimates for the full program—a comparison of clients in treated to wait-listed villages 16 months after the grants.

Employment 40% of women and 30% of men in the control group reported any hours in non-farm business in the month before endline. These rates doubled with the program. Control women and men reported 14 and 17 hours of work per week at endline, two thirds of which is agricultural. The program

the sum of inverse distances between each village and every other (treatment) village in the sample, using road network distances. The majority of tertiary roads in Uganda have not been mapped. Therefore, we used high-resolution satellite imagery in the OpenStreetMap platform to trace all tertiary roads and footpaths connecting villages. We then exported this road network to ArcGIS 10.0 and used the Origin-Destination Matrix tool in the Network Analyst extension to calculate road network distances.

increased women's hours by 50% and men's by 110%. Most of this increase came from the new business, but caring for livestock also rises significantly.[25]

Income Our main income measure is monthly cash earnings.[26] Earnings can be a noisy income measure, however, and cash earnings will understate income by omitting home production. Thus we complement it with two consumption measures: standardized indexes of 52 durable assets (including housing quality) and 57 non-durable consumption goods.[27] The program came at a time of increasing incomes and productivity. From baseline to Phase 1 endline, earnings in the control group rose by two thirds, from roughly UGX 9,000 ($4.50) to UGX 15,000 ($7.50), while hours of work stayed steady.

At endline women and men in the control group reported monthly cash earnings of just UGX 13,980 ($7) and 22,170 ($11.30). Assignment to Phase 1 increased women's earnings by UGX 12,920 (92% relative to the control mean) and men's by UGX 16,420 (a 74% increase).[28] We cannot reject equality of treatment effects by gender (Column 5).

We see similar patterns in durable and non-durable consumption: they rose over time and had large program impacts. Assignment to Phase 1 increased women's durable assets by .37 SD and non-durable consumption by .42 SD. It increased men's durable assets by .54 SD and non-durable consumption by .80 SD.[29] An additive standardized index of these three income measures suggests that women's incomes rose by 0.45 SD and men's by 0.63 SD. We cannot reject

[25]Livestock are a traditional livelihood and store of wealth. Under the program, ownership of cattle, sheep, goats and pigs more than doubles (from 0.17 cattle per household to 0.42). Men and women reported no significant change in the likelihood of no employment or that their main occupation is non-agricultural. See the Online Appendix for treatment effects on these secondary outcomes.

[26]All amounts are deflated to May 2009 UGX using the national consumer price index.

[27]We weight index components using first principal component scores for the baseline and Phase 1 and Phase 2 endlines pooled, standardized to have zero mean at baseline. We use an index rather than the additive total for the short-term consumption index partly for comparability to the durable assets index, and partly because these are a selection of total items consumed and so do not sum to a consumption measure. Both are reliable proxies of full consumption aggregates (Filmer and Scott, 2008; Beegle et al., 2012).

[28]This income does not appear to arise from agriculture, as cash earnings from last harvest shows no treatment-control difference. See Online Appendix D.

[29]This corresponds to a 34% increase in our estimated value of the basket of non-durable goods. We do not have estimated values for durable goods.

equality of treatment effects by gender.

Finally, savings levels roughly tripled among both men and women, and access to loans increases significantly. Mortality shows a .5% decline with treatment, significant at the 10% level (not displayed).

Spillover effects Spillover effects are the focus of a companion paper, Blattman et al. (2014). Briefly, in wait-list villages, proximity to treatment villages reduces the proportion of wait-listed clients engaged in petty trade, suggesting some crowding-out. But there is no adverse effect on income, and access to business advice rises (see Online Appendix D). There are also small *within-village* spillovers to non-clients. Average incomes are steady but this conceals a slight fall in income among pre-existing traders and a rise among non-traders. There is also a slight shift of other villagers towards agricultural work. We see little effect on prices, however, suggesting that markets were well integrated or exhibited monopolistic competition.

5.3 Impacts of accountability and advice

In Phase 2, when wait-list villages received the program, we surveyed clients about grant use and future expectations a month after they received it (a few weeks before the first follow-up visits), and again a year later. Table 3 reports 1-month treatment effects of expecting any follow-up, and Table 4 reports 12-month treatment effect of 1-2 follow-ups (supervision without advice) and 3-5 follow-ups (supervision with extended advice).

One-month impacts First, the treatment passes a manipulation check: only 10% of the "no follow up" group said they expected a visit whereas 98% of those assigned to any follow-ups did. AVSI followed through on this assignment: none of the "no follow-up" people were visited, and 91% of those assigned to two or five follow ups reported receiving the correct amount.

Second, clients generally expressed independence and control over the funds. Most clients changed their business plan in consultation with AVSI but seldom did anyone change business at AVSI's request. 94% of people said they felt

free to spend the grant how they wished, and 80% of the no follow-up group said they felt they could deviate from the AVSI business plan. This fell 9 p.p. with expected follow-up. Just 1.4% said the grant was used for some expenses they did not agree with, and this was 2.1 p.p. higher in the follow-up group, significant at the 5% level.

Third, there is little evidence of diversion of the grant or social pressure to share it. We asked clients how much of the grant they had to give to household member and other community members. In total this was typically less than 1% of the grant, and expecting follow-up had little impact on the amount.[30] Nor did clients report needing to pay or bribe local leaders (not shown).

Fourth, we see little impact on investment. We measured grant spending in two ways. At the one-month survey we first gave clients with a pile of stones and a sheet with pictures of 12 expenditures (classified into six categories in Table 3). Clients allocated stones according to "how they spent the grant". Second, we collect expenditure data since the grant, including business investments. Using the stone allocation measure, people had saved or not spent 54% of the grant and reported almost no spending on celebrations and gifts, whether they expected a visit or not. But those expecting a visit increased their share of the grant spent on business investment by 5.1 percentage points (19%), reducing the share spent on durables (e.g. homes or livestock). By the expenditure survey, however, follow-up has little effect on the amount reported spent on business items. One reason could be that money is fungible, and while expenditures in the days following the grant might have fallen more heavily on durables the clients may have made up the investment shortfall by spending other earned income on the relevant materials for their business. Even if the stones exercise is correct, however, the absolute effect on investment of follow-up is not large.

One-year impacts A year after the grants, follow-up of any kind increased business start-up and survival, as seen in Columns 4 to 6 of Table 4. 35% of those who expected no visits engaged in trading or business in the past

[30] In general, transfers to and from the household (from the general expenditure survey) are sizable and actually decrease with the program. See Online Appendix D.

month. Supervision (two follow-ups) increased this by about 10 p.p. and further follow-ups with advice by 11 p.p. (about a third). This is only partly because of a small increase in attempted start up.

In spite of increased business activities, we do not see strong evidence of higher earnings. Two follow-ups cause a .104 SD increase in the income family index, rising to .127 with five visits (significant at the 10% level). Savings, however, are 19% higher among those receiving two follow-ups and an additional 22% higher with five follow-ups (the sum is significant at the 1% level).

Heterogeneity Our theory and the program design suggests that follow-up should have the greatest impact on the most present-biased or least autonomous individuals. To test this, we generate a measure of pre-program future orientation using both incentivized games and self-reported survey questions and interact it with treatment in Table 5.[31] We also use a composite measure of three self-reported financial autonomy questions at baseline (described further below) and interact this with treatment as well.

The future orientation measure generally has the expected sign (i.e. more investment and earnings) though the autonomy measure does not. These are difficult traits to measure and so the size and significance may reflect measurement error, but nonetheless we do not see strong evidence of present bias impeding investment. Likewise, the interactions with treatment are in the expected direction, but they are not statistically significant. The coefficients on treatment–which represents the effect of treatment on the present-biased and less autonomous–are now larger and more statistically significant than before, in accordance with the prediction. Without significant interactions, however, this is no more than weak evidence for a heterogeneous effect.

[31] Our measure of future orientation is a weighted average of eight baseline survey questions on self-reported patience and impulsiveness and indicators for play within incentivized games, where respondents were offered choices between payment of small sums now versus in two weeks, and in two versus four weeks. The indicators include ones for choosing future versus present rewards, an indicator for future bias (less likely to choose the future in the two versus four weeks choice) and for present bias (more likely to choose the future in the two versus four weeks choice). To generate weights, we regress the endline income index on all time preference measures for the control group alone, and use the estimated coefficients to generate a predicted patience level for the full sample.

5.4 The impact of encouragement to group formation

There is some evidence that group formation increased incomes through co-operative activities mostly unrelated to the new business. Columns 2 and 3 of Table 4 report the pooled ITT estimate for men and women and the marginal effect of group formation in Phase 1.

There is little evidence of an impact on business start-up, occupational choice, and levels of work. However by one measure—cash earnings—group formation increased incomes. Those in group formation villages report 41% greater cash earnings than in standard treated villages. This is not reflected, however, in our other two income measures. Altogether, the aggregate z-score suggests that income rose 0.2 SD as a result of group formation. Agricultural earnings could play a role here. While assignment to the program did not have a positive and significant impact on sales from the last harvest, those in group formation villages reported significantly greater earnings than regular treated villages. This arises both in farm and non-farm earnings (see Online Appendix D for breakdowns of the ITT estimates by occupation).

People in the group formation villages also had a higher probability of being in a savings group. Savings levels did not increase significantly, but debt did—debts in the basic treatment group were no different than the control group (about 5,230 UGX) but the sample in group formation villages reported an additional 3,123 UGX debt, which could be an indication of increased credit access. Perceived access to credit and perceived access to business advice are both .07 SD higher but the impacts are not statistically significant.

What specifically did group encouragement do? Table 6 reports the effects of group formation on a number of individual and group outcomes. Two thirds of the control group are members in a community group of some kind, from water and school committees to savings and farming groups. Being in a treatment village without group encouragement increases group membership by 12.6 p.p. and the group formation treatment doubles this effect. The people in group formation villages go from being in 1.7 groups to 2.9.[32]

[32]People in each village, even the control villages, typically know who roughly half the other AVSI clients are. Familiarity is slightly higher in treated and especially in treatment villages with the group encouragement. Even in these group formation villages, however,

Treatment without group encouragement increases leads clients in that village to meet monthly, and group encourages increases frequency to twice monthly meetings. Clients report meeting mainly for communal farming and savings, and to a lesser extent social support and doing business together. Group formation spurs much more group savings and communal farming meetings—essentially happening twice a month.

Communal farming is one of the most commonplace forms of economic cooperation—people pool their labor and either assist each other on one another's plots, or farm a new plot collectively for cash or own consumption. Control group members report meeting their "most important group" 1.3 times a month for communal farming. This increases weakly with treatment and also group encouragement (the sum of the two treatment effects is statistically significant). We do not have a measure of total cooperative farming hours, but note that earnings from the last harvest is UGX 33,000 (about $17.50) significantly higher as a result of the group encouragement (see Table 4).

Overall, encouragement to group formation appears to have increased participation in communal saving, farming, and (to a lesser extent) business activities, and this could be responsible for the earnings effect we observe.

5.5 Sensitivity to endogenous selection or attrition

Two concerns are potential bias arising from baseline imbalance and systematic attrition. Table 7 tests the sensitivity of our Phase 1 impacts. Column 1 reports the ITT from Table 3 for major outcomes. Results are robust to exclusions of the baseline covariates (Column 2) and (where we have comparable baseline data) to a differences-in-differences ITT estimate controlling for other baseline covariates (Column 3). In general, the impacts are similar.

We also bound treatment effects for attrition bias. We consider an extreme bound, one that imputes the 10th percentile of treatment group outcomes for unfound treatment members and the 90th percentile for unfound controls (Column 4). Results are robust to this bounding scenario.

people can name fewer than two thirds of other clients by name.

5.6 Impacts on empowerment

Self-reported autonomy Table 8 reports control group means and treatment effects on women's self-reported autonomy, 16 months after the Phase 1 grant. Survey questions were asked on on a 0 to 3 scale (from "not at all" to "always") and are grouped into families with a standardized index.[33]

Women report a 0.1 SD increase in autonomy in purchasing decisions, with the family index significant at the 10% level only. Women with a partner at the Phase 1 endline were also asked about aspects of their relationship.[34] There is almost no change in self-reported physical and emotional abuse by the partner.[35] Women actually report a 0.18 SD increase in the degree of control their spouse asserts over their finances and freedoms of movement and association, as the husband principally increased tendencies to control contact outside the home and also demands or seizes some of the women's newfound earnings. At the same time, women report a 0.2 SD increase in the quality of the relationship, feeling more free to express their opinions and reporting a healthier relationship. Overall, these results paint a picture of husbands who encourage but then control their wife's business earnings, in return for weak increases in purchasing autonomy.

Household decisions, expenditures and assets We can also look at actual decisions. Since incomes are rising we expect spending and investments of all forms to rise. The gender of household beneficiaries was not randomly assigned, so we cannot experimentally identify a gender difference. Nonethe-

[33]Questions and families adapted from the 2006 Uganda Demographic and Health Survey.

[34]Treated women were more likely to answer these questions because they were 9 p.p. more likely to be married at endline, principally because of new marriages rather than any change in divorce rates. This could introduce positive or negative selection from "marginal marriages". We are interested in spousal abuse and relations as an outcome, and so the current results including selection are relevant. Alternatively, we could confine our analysis to the subset of women reporting partners at baseline. These results are not shown, but in general abuse and marital control are lower (though not significantly so) implying the marginal marriages are slightly better quality on average than baseline ones.

[35]Green et al. (2014) discuss these results in more detail. Such abuse is reported by fewer than a quarter of women, and so is probably under-reported. Even so, the effect of treatment is close to zero (0.02 SD) and so even significant underreporting is unlikely to affect the basic conclusion, so long as it is not significantly correlated with treatment.

less, in Table 9 we see that a comparison of expenditures by men and women within our sample do not reflect the kind of patterns we would expect if women were exercising significantly more autonomy. We can estimate a simple gender difference in expenditure or asset shares (Column 5), or the gender difference after allowing treatment to interact with every other baseline covariate (in Column 6, since men and women differ along many other traits on average). This gives us a comparison of treatment effects by gender subgroups after controlling for other observed differences. We take these results with caution, but nonetheless note there is nothing to contradict the self-reported measures: if anything, many of the coefficients indicating that on average women actually spend less then men on women and girls, are less likely to enroll their children than men, and that men are more likely to accumulate female labor saving devices such as sewing machines or irons. Also, recall that women reported no reduction in hours engaged in chores (Table 2).

Social and community participation and status Finally, we consider the impacts of the program on social and community engagement. Table 9 lists treatment effects on a collection of family indices, each composed of a collection of survey questions on the same theme.[36] We see little change in an index of three questions on the quality of family relationships (z-score), but we see substantial and statistically significant increases in several forms of community participation among both women and men: in 7 forms of social support received in the past month (such as someone comforting you when you are feeling sad); in 3 forms of community participation, such as speaking out at community meetings or voting in local elections; and in 2 forms of community leadership (current leadership and interest in future office). We also see modest increases in knowledge of elected representatives.

6 Discussion and conclusions

This evaluation shows strikingly large economic impacts of a cash grant along with a short program of business training and planning. We do not know

[36]Means and treatment effects for individual components in Online Appendix D.

whether these effects persist, but longer-run evidence from similar programs (including one in northern Uganda) show highly persistent effects (Blattman et al., 2014; de Mel et al., 2012c).

The ability to test marginal impacts of common program components is an advantage of this study. We could not test a simple cash transfer, but encouragement into groups and both the expectation and receipt of follow-up visits had modest and variable impacts on returns, especially relative to cost. To see this cost-effectiveness, imagine the simple case where the cash earnings treatment effect represents a persistent increase in monthly income.[37] If so, the impact of the full program is 10% of the per person program cost of UGX 1,720,000. This implies "payback" (ignoring interest) in 10 years, or a 10% cost of capital for a perpetuity of this amount to break even. Dropping follow-up and reducing costs of targeting could increase the breakeven cost of capital to 20 or even 30%.[38]

The importance of the basic grant and training points to the importance of imperfect financial access, especially credit. The sample population was quite clearly poor and deeply credit constrained. The returns to capital were high, consistent with a model of credit constraints. We also see some but not especially high levels of exit from the business, so there is no evidence of systematic divestment after the initial encouragement and any later pressure or accountability is relieved.

The effect of group encouragement on financial life, cooperative farming,

[37]If the earnings effect is indeed permanent, it will understate returns because it does not reflect the significant amounts of the grant that went into savings or durable assets. The treatment effect on savings is approximately a third of the grant, after all, though this may reflect reinvested earnings as well. In the end, we use an earnings perpetuity to estimate returns rather than value of the change in consumption and assets because (a) we do not have a comprehensive consumption measure or asset values, and (b) we do not want to double count asset increases and earnings.

[38]Dropping follow-up reduces earnings modestly but drops costs by almost half, increasing the break even cost of capital to 15%. In the hypothetical situation where targeting and disbursement could be performed for 10% of grant and training costs (rather than the 25% at present), the break-even cost of capital rises to 20%. (See Online Appendix D for details. The 10% cost figure is the cost of unconditional transfers described by Haushofer and Shapiro (2013)in Kenya.) Finally, note that the business and group formation trainings cost 1.25 times as much as the grant itself. If training could be performed more briefly or efficiently without reducing earnings gains as significantly, the break-even cost of capital is potentially much higher

and (to some extent) income also suggests that social networks and capital are important inputs into economic life. Groups were also strikingly easy to spur into existence, at least among the marginalized. This suggests that aid organizations may be onto something in their nearly ubiquitous emphasis on group transfers. What exactly is happening, how associational life can be spurred more inexpensively, and whether (and why) the earnings connection is robust, are all important areas for future research.

In spite of large economic gains, however, we see little evidence of a change in women's autonomy or domestic violence. Two other experimental cash transfer programs in Africa (which randomize the recipient's gender as well) also do not see shifts in bargaining power (Haushofer and Shapiro, 2013; Akresh et al., 2012).[39] There are several reasons these experimental results could differ from the prior literature. First, the public nature of transfers could facilitate capture by husbands, as the ability to conceal income or information has been shown to be an important factor in decision-making (Anderson and Baland, 2002; Ashraf, 2009). Second, a one-time transfer that increases earned income might not alter women's bargaining power in a sustained fashion (although one would imagine that such large income and work increases would have a medium term impact). Third, African women's initial status may be greater than in South Asia (where much of the existing evidence comes from). Finally, much of the existing evidence is observational, and it could be that emerging experimental evidence will challenge the received wisdom.

Whether cash transfer programs are worth expanding depends on the relative returns to other interventions. Direct, experimental comparisons to "graduated" ultra-poor asset transfer programs, and to cash with and without skills training, would be most policy-relevant. Given the high returns to cash plus training, but the high cost of training (as much or more than the grant in this instance), it seems plausible that simple cash transfers are more cost-effective at poverty alleviation. If so, it implies a huge change in poverty alleviation programs in Africa and worldwide.

[39]Our result is also consistent with a recent meta-analysis of microfinance and empowerment, which finds small and heterogeneous effects (Duvendack et al., 2014).

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Table 1: Baseline descriptive statistics and test of randomization balance

		Balance tests			
		Assigned to Phase 1		p-values on cross-cutting treatments	
Select baseline covariates (N=1800)	Sample mean (1)	Treatment group difference (2)	p-value (3)	Assigned to group dynamics (Phase 1) (4)	Assigned to any follow-up (Phase 2) (5)
Age	27.3	-0.58	0.20	0.35	0.23
Female	86%	-1%	0.72	0.24	0.73
Married or living with partner	48%	-5%	0.28	**0.07**	0.46
Single-headed household	49%	4%	0.17	**0.41**	0.02
Highest grade reached at school	2.8	0.07	0.70	0.69	**0.02**
Reports having HIV or AIDS	6%	-1%	0.69	0.26	0.16
Weekly employment, hours	15.4	-1.6	0.11	0.50	0.87
Farm	12.3	-2.1	**0.02**	0.17	0.95
Non-farm and other	3.0	0.5	**0.21**	0.31	0.50
Weekly household chores, hours	34.5	1.0	0.53	0.83	0.80
Zero employment hours in past month	20%	5%	**0.07**	0.15	0.44
Main occupation is non-agricultural	2%	1%	0.11	0.70	0.52
Durable assets (z-score)	-0.64	-0.06	**0.10**	0.35	0.33
Monthly cash earnings (000s UGX)	8.94	-0.79	0.26	0.50	0.82
Member of a savings group	9%	-3%	**0.07**	0.42	0.67
Savings stock (000s UGX)	4.86	-1.22	0.20	0.54	**0.02**
Total outstanding loans (000s UGX)	4.14	0.13	0.85	0.97	0.26
Can obtain 100,000 UGX ($50) loan	4%	1%	0.34	0.86	0.77
Community maltreatment in past year	18%	3%	0.14	0.07	0.53
Related to a traditional chief or LC1	28%	-6%	**0.01**	0.69	0.67
Total traumatic war events, z-score	-1%	-7%	0.21	0.61	0.77
Forcibly recruited into rebel group	22%	-5%	**0.03**	0.39	0.38
Carried gun within rebel group	3%	-1%	0.39	0.85	0.50
Forcibly married within rebel group	3%	0%	0.63	0.83	0.96
Village-level covariates (N=120):					
Village population	699	101	0.34	0.09	0.24
Inverse distance to all villages	56.1	-5.3	0.92	**0.35**	0.28
Inverse distance to treatment villages	29.7	-6.9	0.81	0.35	0.30
Distance to capital (000s km)	45.5	1.5	0.58	0.62	0.04
Accessible by bus	95%	8%	0.05	0.31	**0.06**
Village has a market	26%	-16%	**0.05**	0.83	**0.07**
Number of shops in village	1.5	0.4	**0.66**	0.50	**0.35**
Total NGOs in village	7.3	-0.3	0.68	0.21	0.40
p-value on joint signifiance of all 70 baseline covariates			<0.001	<0.001	<0.001

Notes: Individual-level covariates come from self-reported surveys. Village-level covariates come from a survey of a community leader or leaders. All Ugandan shilling (UGX)-denominated variables and all hours worked variables were top-censored at the 99th percentile to contain outliers. Column 1 reports the mean of all 1,800 original baseline respondents prior to assignment to Phase 1 or 2. Columns 2 to 5 report results from OLS regression of each baseline characteristics on an indicator for treatment assignment plus a strata (district) fixed effect, with robust standard errors clustered at the village level. Column 2 and 3 report the coefficient on assignemnt to Phase 1 and the p-value on that coefficient. Column 4 reports the p-value on balance between those assigned to group dynamics trainng and not within Phase 1. Column 5 reports those assigned to any number of follow-up visit within Phase 2. $p \leq 0.10$ in bold.

Table 2: Impacts of the full program (Phase 1) on occupation and income 16 months after grants, by gender

	Female beneficiaries (N=1546)		Male beneficiaries (N=254)		
Outcomes	Control group mean (1)	ITT estimate (2)	Control group mean (3)	ITT estimate (4)	Female × Treatment interaction (5)
Treated in Phase 1	0.000	0.958	0.000	0.953	0.007
		[.009]***		[.024]***	[.018]
Reports positive hours in petty trading	0.165	0.320	0.091	0.343	0.019
		[.031]***		[.070]***	[.058]
Any non-farm self-employment	0.403	0.391	0.298	0.417	-0.077
		[.028]***		[.080]***	[.057]
Started enterprise since baseline	0.519	0.473	0.380	0.595	-0.130
		[.026]***		[.057]***	[.041]***
Average employment hours per week	14.350	7.175	17.237	19.041	-8.285
		[1.238]***		[4.575]***	[3.617]**
Agricultural	9.129	2.344	11.948	9.958	-3.305
		[1.096]**		[3.496]***	[2.980]
Non-agricultural	5.222	4.831	5.289	9.083	-4.980
		[.731]***		[2.628]***	[2.199]**
Average hours of chores per week	43.139	0.825	18.706	2.257	-3.050
		[1.024]		[3.484]	[3.276]
No employment hours in past month	0.080	-0.022	0.124	-0.090	0.027
		[.014]		[.052]*	[.035]
Index of income measures (z-score)	-0.257	0.453	0.115	0.625	-0.180
		[.061]***		[.172]***	[.151]
Monthly cash earnings (000s UGX)	13.985	12.924	22.172	16.419	-3.508
		[2.464]***		[7.785]**	[6.974]
Durable assets (z-score)	0.027	0.369	0.356	0.538	-0.176
		[.056]***		[.138]***	[.114]
Non-durable consumption (z-score)	-0.212	0.415	-0.253	0.799	-0.316
		[.062]***		[.161]***	[.131]**
Total earnings from last harvest	153.499	-24.143	148.227	19.260	-33.851
		[13.083]*		[34.476]	[25.173]
Member of a savings group	0.281	0.410	0.215	0.378	-0.028
		[.041]***		[.084]***	[.058]
Savings (000s UGX)	36.059	101.009	45.539	169.695	-51.315
		[8.779]***		[24.206]***	[19.791]**
Debts (000s UGX)	5.356	2.631	4.462	4.981	-4.535
		[1.010]**		[2.760]*	[2.828]
Perceived access to credit (z-score)	-0.174	0.197	0.077	0.441	-0.370
		[.067]***		[.183]**	[.150]**
Access to business advice (z-score)	-0.126	0.211	0.202	0.046	-0.053
		[.054]***		[.171]	[.138]

Notes: This table reports treatment effects after Phase 1, based on a comparison of the initial treatment villages to waitlist villages (pooling villages that did and did not receive group dynamics training). Columns 1 and 3 report mean outcomes for women and men in the control group. Column 2 and 4 report results from an OLS regression of each outcome on assignmen to treatment, a Gulu district (strata) fixed effect, and the vector of baseline covariates reported in the Online Appendix. Column 5 reports the coefficient on the interaction between the treatment and female indicators in a OLS regression of each outcome on assignment to treatments, a Gulu district (strata) fixed effect, and the vector of baseline covariates, pooling men and women. Column 6 reports the coefficient and standard errors on the interaction between female and treatment when every other baseline covariate is also interacted with treatment (excluding those that are highly collinear with female, such a hours of chores). Standard errors are robust and clustered at the village level

*** p<0.01, ** p<0.05, * p<0.1

Table 3: Impact of follow-up expectations on self-reported grant use one month after the grant, Phase 2 only

Outcome	Mean of no follow-up group (1)	Added impact of any follow-up (2)	Observations (3)
Says they expect AVSI staff will follow up with them	0.097	0.880 [.021]***	837
Received assigned # of follow-ups (administrative data)	1.000	-0.081 [.013]***	904
Influence of AVSI over investment			
Business plan changed after meeting with AVSI staff (0-3)	1.959	0.152 [.107]	852
AVSI asked you to change your business idea	0.007	0.001 [.005]	858
Felt very or somewhat free to deviate from AVSI business plan	0.797	-0.091 [.036]**	858
Felt very or somewhat free to spend the grant how you wanted	0.936	-0.007 [.019]	858
Says needs AVSI's approval for way you operate your business	0.277	0.044 [.033]	858
Degree of control over how grant was spent (0-2)	1.854	-0.025 [.030]	856
Expenses paid for with grant you did not agree with	0.014	0.021 [.008]**	850
Diversion of grants			
Grant money given to household members (000s UGX)	1.174	0.454 [1.380]	858
Grant money given to community members (000s UGX)	0.117	0.090 [.089]	858
Proportion of grant spent on:			
Business investments and expenditures	0.269	0.051 [.022]**	858
Large household assets or home improvements	0.119	-0.039 [.018]**	858
Food, clothing, personal items, small household items	0.018	-0.007 [.002]***	858
Gifts, contributions, or celebrations	0.002	0.000 [.001]	858
Health or education	0.035	-0.007 [.005]	858
Saved or unspent	0.537	0.002 [.022]	858
Non-durable consumption (z-score)	0.058	-0.027 [.075]	856
Total business investments since grant	27.481	-2.361 [3.607]	858

Notes: Column 1 reports the mean outcome for the clients in Phase 2 who were assigned to no follow-up. Column 2 reports the coefficients on assignment to either 2 or 5 follow-ups in Phase 2 from an OLS regression of each outcome on this treatment indicator, a stratum fixed effect, and baseline covariates. Column 3 reports the number of observations from these regressions. Standard errors are robust and clustered at the village level.

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Economic impacts of the full program and the marginal impact of cross-cutting components

	Phase 1, 16-months after grants			Phase 2, 12 months after grants		
		ITT estimates			ITT estimates	
Outcome	Mean, control group (1)	Assignment to either treatment (2)	Marginal effect of group dynamics (3)	Mean, no follow-up group (4)	Assignment to 2 follow-ups (5)	Marginal effect of 3-5 follow-ups (6)
Treated in Phase	0.00	0.956	0.030	0.000	0.936	0.020
		[.009]***	[.016]*		[.018]***	[.023]
Mortality	0.00	-0.005	0.000	0.00	0.004	-0.004
		[.003]*	[.002]		[.003]	[.004]
Reports positive hours in petty trading	0.15	0.319	0.006	0.351	0.116	0.012
		[.028]***	[.043]		[.037]***	[.040]
Any non-farm self-employment	0.39	0.402	0.012	0.577	0.107	0.051
		[.026]***	[.035]		[.038]***	[.036]
Started enterprise since baseline	0.50	0.491	-0.001	0.921	0.043	0.019
		[.023]***	[.018]		[.019]**	[.014]
Average work hours per week	14.75	8.882	0.861	31.476	0.934	3.754
		[1.348]***	[2.047]		[2.194]	[2.439]
Agricultural	9.52	3.099	0.722	26.285	-1.278	3.145
		[1.135]***	[1.560]		[2.168]	[2.211]
Non-agricultural	5.231	5.783	0.138	5.192	2.212	0.609
		[.678]***	[1.220]		[.901]**	[1.124]
Average hours of chores per week	39.75	0.922	0.968	33.424	1.858	-0.287
		[.967]	[1.335]		[1.789]	[1.638]
No employment hours in past month	0.09	-0.026	-0.041	0.033	0.008	0.004
		[.014]*	[.019]**		[.017]	[.014]
Index of income measures (z-score)	-0.21	0.499	0.185	-0.104	0.102	0.011
		[.059]***	[.090]**		[.080]	[.079]
Monthly cash earnings, 000s UGX	15.12	14.277	10.002	13.061	3.845	-1.754
		[2.416]***	[4.004]**		[2.381]	[2.427]
Durable assets (z-score)	0.07	0.408	0.037	0.831	0.026	0.108
		[.056]***	[.067]		[.075]	[.074]
Non-durable consumption (z-score)	-0.22	0.464	-0.008	-0.050	0.006	0.032
		[.061]***	[.084]		[.074]	[.064]
Earnings from last harvest (000s UGX)	152.77	-16.438	32.979	308.368	44.993	-3.499
		[12.133]	[16.417]**		[39.093]	[39.350]
Member of a savings group	0.27	0.408	0.236	0.606	0.030	0.026
		[.039]***	[.055]***		[.033]	[.033]
Savings (000s UGX)	37.37	111.313	8.979	135.770	26.405	30.039
		[8.893]***	[17.211]		[13.858]*	[16.295]*
Debts (000s UGX)	5.23	2.754	3.123	7.506	-0.871	0.489
		[.921]***	[1.552]**		[1.629]	[1.576]
Perceived access to credit (z-score)	-0.14	0.248	0.071	-0.021	-0.043	0.173
		[.066]***	[.091]		[.075]	[.085]**
Access to business advice (z-score)	-0.08	0.206	0.061	0.057	-0.080	-0.028
		[.053]***	[.064]		[.080]	[.083]

Notes: Column 1 reports the mean outcome for the control group. Column 2 reports the coefficients and standard errors on an indicator for assignment to treatment from ordinary least squares regressions of each outcome on treatment, a Gulu district (strata) fixed effect, and the vector of baseline covariates reported in the online appendix. Column 3 reports the coefficient on assignment to the group dynamics component when added to the same OLS regression as in Column 2. Column 4 reports the mean outcome for the clients in Phase 2 who were assigned to no follow-up. Columns 5 and 6 report the coefficients on assignment to 2 and 5 follow-ups in Phase 2 from an OLS regression of each outcome on these two treatment indicators, a stratum fixed effect, and baseline covariates. Standard errors are robust and clustered at the village level.

*** p<0.01, ** p<0.05, * p<0.1

Table 5: Heterogeneity of follow-up impacts by initial time preferences

	Dependent variable					
	6-week endline (n=834)			16-month endline (n=844)		
Covariate	Savings stock (000s UGX)	Total investment expenditures (000s UGX)	Proportion of grant invested	Currently has a business	Income index (z-score)	Monthly cash earnings (000s UGX)
	(1)	(2)	(3)	(4)	(5)	(6)
Assigned to any follow-up	12.761	-0.074	0.052	0.136	0.125	3.265
	[8.592]	[1.464]	[0.022]**	[0.037]***	[0.065]*	[1.923]*
Future orientation, z-score	2.880	1.901	-0.017	0.003	0.007	0.725
	[7.582]	[1.860]	[0.016]	[0.040]	[0.057]	[1.581]
Assigned to follow-up × Future orientation	-13.878	-2.766	0.030	0.006	-0.041	-1.447
	[8.680]	[2.013]	[0.021]	[0.049]	[0.064]	[1.775]
Self-reported purchasing autonomy, z-score	8.079	3.147	0.005	0.033	0.013	-0.321
	[7.996]	[2.297]	[0.021]	[0.035]	[0.073]	[1.781]
Assigned to follow-up × Autonomy	-4.435	-2.344	-0.001	-0.003	-0.065	-1.501
	[8.259]	[1.918]	[0.020]	[0.033]	[0.068]	[1.856]

Notes: Coefficients and standard errors come from an OLS regression of each dependent variable on an indicator assignment to any follow-up treatment, an index measure of future orientation taken from baseline, and an interaction between these two indicators. Dependent variables in columns (1) - (3) are from the short-term survey conducted 6 weeks following treatment. Dependent variables in columns (4) - (7) are from the long-term survey conducted 16 weeks following treatment. Baseline covariates and strata fixed effects were included in each regression and are omitted.

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Effect of program and group dynamics training on grant use and group activities in Phase 1

Outcome	Control Mean (1)	ITT estimate, villages without group dynamics (2)	Added impact of group dynamics component (3)	Observations (4)
Member of any community group	0.668	0.126	0.117	1,734
		[.029]***	[.026]***	
# of community groups a member in	1.721	0.482	0.710	1,734
		[.142]***	[.176]***	
# program sample in village they can name	6.408	1.515	1.018	1,730
		[.314]***	[.354]***	
Of other AVSI clients in the village:				
# times meet in a month (0 if no group)	0.121	0.748	1.207	1,734
		[.119]***	[.144]***	
For communal farming	0.042	0.571	1.209	1,718
		[.181]***	[.297]***	
For savings	0.027	0.538	1.441	1,718
		[.166]***	[.282]***	
For social support	0.013	0.087	0.076	1,718
		[.025]***	[.036]**	
For business	0.026	0.236	0.298	1,718
		[.111]**	[.154]*	
Quality of group cooperation (1-10)	5.761	0.649	1.025	1,407
		[.208]***	[.188]***	
Of "most important group" to respondent:				
# times meet in a month (0 if no group)	1.409	0.372	0.589	1,710
		[.168]**	[.190]***	
For communal farming	1.297	0.462	0.357	1,710
		[.338]	[.370]	
For savings	1.037	0.766	0.784	1,710
		[.209]***	[.227]***	
For social support	0.117	0.036	0.158	1,710
		[.031]	[.044]***	
For business	0.142	0.106	0.028	1,710
		[.103]	[.115]	
Quality of group cooperation (1-10)	7.092	0.399	-0.075	1,282
		[.335]	[.435]	

Notes: Column 1 reports the mean outcome for the control group. Columns 2 to 4 report the results of an OLS regressions of each outcome on assignment to treatment, assignment to group dynamics, a Gulu district (strata) fixed effect, and the vector of baseline covariates reported in the online appendix. Column 2 reports coefficients on the treatment indicator, Column 3 the coefficent on assignment to group dynamics, and Column 4 the number of observations. Standard errors are robust and clustered at the village level.

*** p<0.01, ** p<0.05, * p<0.1

Table 7: Sensitivity analysis of Phase 1 treatment effects

	Program impact under alternative models			
	ITT estimate			Attrition bounds
Dependent variable	Main specification from Table 4	Without baseline covariates	Difference-in-differences estimate	Replace missing with 90/10 percentiles
	(1)	(2)	(3)	(4)
Reports any hours in trading/business	0.319	0.337	0.349	0.271
	[0.028]***	[0.028]***	[0.028]***	[0.027]***
Average employment hours per week	8.882	8.118	9.706	6.912
	[1.348]***	[1.454]***	[1.664]***	[1.346]***
Index of income measures (z-score)	0.499	0.406		0.411
	[0.059]***	[0.075]***		[0.059]***
Monthly cash earnings, 000s UGX	14.277	13.586		12.466
	[2.416]***	[2.450]***		[2.296]***
Durable assets, z-score	0.408	0.289	0.358	0.316
	[0.056]***	[0.076]***	[0.056]***	[0.057]***
Non-durable consumption, z-score	0.464	0.437		0.387
	[0.061]***	[0.065]***		[0.059]***

Notes: Column 1 reports the coefficients and standard errors on an indicator for assignment to treatment from ordinary least squares regressions of each outcome on treatment, a Gulu district (strata) fixed effect, and the vector of baseline covariates reported in the online appendix. Column 2 replicates Column 1, removing the baseline covariates. Column 3 reports the difference in differences estimate for outcomes that were collected at the baseline survey. Column 4 replicates Column 1, but imputes missing values at the 90th percentile in the distribution for control individuals and at the 10th percentile in the distribution of treatment individuals.

*** p<0.01, ** p<0.05, * p<0.1

Table 8: Impacts of the program on self-reported autonomy and "empowerment"

Outcomes	Women (N=1546) Control mean (1)	ITT estimate (2)	Obs (3)
Lives with partner	0.579	0.088 [.020]***	1,484
Divorced or separated since baseline	0.065	-0.011 [.016]	1,486
Autonomy/influence in purchases, z-score	-0.026	0.104 [.055]*	1,486
Can decide on own how to spend pocket money (0-3)	2.077	0.095 [.071]	1,485
Can use earnings to buy clothes without permission (0-3)	1.372	-0.028 [.071]	1,486
Have a say in purchase of large assets in household (0-3)	2.411	0.132 [.045]***	1,471
Women with partners at endline only:			
Physical and emotional abuse in past 8 months, z-score	-0.030	0.019 [.066]	957
Threatened Harm (0-3)	0.217	0.037 [.041]	938
Humiliated in front of others (0-3)	0.096	-0.034 [.023]	938
Beaten (0-3)	0.112	0.013 [.031]	938
Kicked or hit (0-3)	0.151	0.026 [.036]	938
Cannot refuse sex (0-3)	1.545	0.018 [.082]	954
Marital control, z-score	-0.110	0.183 [.066]***	961
Partner tries to limit your contact outside the home (0-3)	0.246	0.112 [.051]**	938
Requires partner's permission to transact in market (0-3)	2.328	0.069 [.073]	959
Partner has refused you money for household needs (0-3)	0.591	-0.044 [.061]	954
You have to give you earnings to your partner (0-3)	0.606	0.270 [.080]***	957
Partner takes your money against will (0-3)	0.121	0.067 [.034]**	953
Partner accuses you of being unfaithful (0-3)	0.083	-0.025 [.031]	938
Relationship quality, z-score	-0.086	0.198 [.082]**	961
Self-rating of relationship health, z-score	0.063	0.132 [.069]*	945
Feels partner treats you well, z-score	-0.082	0.105 [.068]	949
You feel free to express your opinion, z-score	-0.153	0.168 [.085]*	960

Notes: Column 1 reports mean outcomes for men in the control group. Column 2 reports the coefficients and standard errors on an indicator for assignment to treatment from ordinary least squares regressions of each outcome on this indicator, a Gulu district (strata) fixed effect, and the vector of baseline covariates reported in the online appendix. Standard errors are robust and clustered at the village level.
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Impacts of the program on expenditures, investments, and social engagement

Outcomes	Women (N=1551)		Men (N=249)		Female-treatment interaction	
	Control mean (1)	ITT estimate (2)	Control mean (3)	ITT estimate (4)	Only female interacted (5)	All covariates interacted (6)
A. Expenditures and investments						
Proportion of children in school:						
Biological	0.489	-0.020	0.306	0.025	-0.067	-0.077
		[.023]		[.045]	[.059]	[.089]
Non-biological	0.322	0.003	0.389	-0.016	-0.018	0.008
		[.028]		[.069]	[.063]	[.078]
Total weekly spending (000s UGX)	22.264	5.518	23.419	7.273	-1.578	-1.348
		[.827]***		[2.298]***	[1.988]	[2.577]
Proportion of total expenditures on "__" spent on women and girls:						
Education	0.432	-0.025	0.547	-0.127	0.094	0.095
		[.026]		[.191]	[.080]	[.094]
Health	0.459	0.056	0.351	0.128	0.021	-0.133
		[.028]**		[.117]	[.094]	[.114]
Clothing	0.488	-0.039	0.408	0.038	-0.024	-0.004
		[.021]*		[.061]	[.052]	[.069]
Stock of "women's assets", z-score†	-0.162	0.270	0.137	0.402	-0.170	-0.192
		[.067]***		[.183]**	[.141]	[.177]
B. Social engagement, z-scores						
Quality of family relationships	-0.028	0.0111	0.305	0.1139	-0.0780	0.0116
		[.047]		[.153]	[.121]	[.156]
Social support received	-0.107	0.1581	0.058	0.1293	-0.0324	-0.0295
		[.056]***		[.166]	[.133]	[.172]
Community participation	-0.179	0.2276	0.418	0.4007	-0.1605	-0.1171
		[.056]***		[.179]**	[.137]	[.175]
Community leadership activities	-0.120	0.1725	0.448	0.1559	-0.0786	0.0300
		[.054]***		[.169]	[.128]	[.174]

Notes: Columns 1 and 3 report mean outcomes for women and men in the control group. Column 2 and 4 report results from an OLS regression of each outcome on assignment to treatment, a Gulu district (strata) fixed effect, and the vector of baseline covariates reported in the online appendix. Column 5 reports the coefficient on the interaction between the treatment and female indicators in a OLS regression of each outcome on assignment to treatments, a Gulu district (strata) fixed effect, and the vector of baseline covariates, pooling men and women. Column 6 reports the coefficient and standard errors on the interaction between female and treatment when every other baseline covariate is also interacted with treatment (excluding those that are highly collinear with female, such as hours of chores). Standard errors are robust and clustered at the village level.

*** p<0.01, ** p<0.05, * p<0.1

† "Women's assets include cooking materials, labor-saving household appliances (e.g. iron, improved stove), etc.

Online Appendix to "Employing and empowering marginalized women: A randomized trial of microenterprise assistance"

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Contents

A Training programs: Aims and curricula

A.1 Business skills training

The stated objectives of the business skills training were to increase basic knowledge and skills of business management, develop confidence in enterprise initiation and management, and to help clients assess their own capabilities and motivation in entrepreneurial career and strengthen and develop business skills. The training was adapted from the CARE-Uganda Ecodev projects training manual which is based on CARE Bangladesh's Small Economic Activity Development Sector and Rural Maintenance Program.

Training and subsequent follow-up visits were led by AVSI resident field officers (RFOs), full time professional staff of the NGO. RFOs typically had tertiary education in social work, the slight majority were men, and most had at least a few years of experience on

similar interventions. AVSI trained them in providing business support as well as psychological and social support. They were based in field offices at the sub-county level. Prior to administering the training, each RFO had participated in a two-week course led by an external facilitator. RFOs were trained using the Participatory Rural Approach Manual and the Community Resilience and Dialogue (CRD) Manual, aimed for literate and non-literate persons, respectively. Training time was divided equally between each training manual.

During this business skills training, clients were asked to address five key questions: a) Can I operate this IGA? b) Will people buy my products? c) Is the IGA profitable? d) How much money do I need to start and operate the IGA? e) Will the income from the IGA when added to other family income, be enough to pay household incomes? These key questions were practically presented to clients through lectures, small group discussion, group games, storytelling, dramatizations and role-playing by clients, large group sharing of experiences, and drawings. Clients were also constantly asked to recite the five key questions that they have to ask themselves as they think about starting their businesses. After the training, clients were given two weeks to develop a business plan, at which point AVSI staff would return to review plans individually.

The curriculum outline was as follows:

1. Business identification strategy and start-up process
    (a) Business identification games
    (b) Characteristics of an entrepreneur or good business person
    (c) Steps to become a businessperson
    (d) Business experience sharing
2. Business management
    (a) Constraints on business growth and performance
    (b) Advantages and disadvantages of being in business
    (c) Importance of monitoring activities and progress, avoiding delays and taking timely corrective actions
    (d) Sales and sales promotion
    (e) Choosing location and prices
3. Whether to sell on cash or credit
    (a) What are credit sales?

(b) Advantages and disadvantages of credit

4. Financial management

   (a) Separation of home and business finances

   (b) Simple record keeping

   (c) Simple income and expenditure tracking

   (d) Costing of products and services

   (e) Simple budgeting

5. Developing a business plan

   (a) Definition and purpose of a business plan

   (b) How to prepare a simple business plan

6. Basic management of a group savings and credit fund

   (a) Reasons for saving

   (b) Structure of a group savings system

   (c) Reasons for a credit system

   (d) Structure of a group credit system

A copy of the training manual is available from AVSI USA on request (http://www.avsi-usa.org/).

A.2 Group dynamics training

The group dynamics training took place over three days, several weeks or months after grant disbursement. The curriculum had several key components and messages:

1. Importance of saving. The training stressed the importance of saving and suggested that groups collectively maintain a group savings account to make investments.

2. Leadership styles. Different types of leadership were illustrated to the members in order to make them understand the importance of an inclusive approach to group decision-making. For example, clients were asked to role play the parts of a dictator, passive and democratic.

3. Communication and listening. AVSI field workers stressed the importance of clear, open, and inclusive communication with regard to group activities. For example, clients were asked to take parts in dramatizations that illustrate bad and good communication skills and present their observations.

4. Decision making process. The objective of this topic was to help the member to choose how decisions relevant for the group would be taken to then be reflected in a group Constitution. Again, the training underlined the importance of group inclusion. Here clients were asked to identify any topic of interest, discuss as a group and arrive at a conclusion and present results.

5. Roles and Responsibilities. Group members participated in activities designed to demonstrate the different roles that group members can take on, their responsibilities and unhelpful behavior in groups. This was done through animal codes where facilitators presented pictures of 19 different animals such as elephant, monkeys, owl, tortoise etc. Each of these animals were attached to a given behavioral pattern and clients were expected to discuss the reality of such behavior in a group.

6. Record keeping. Basic record keeping techniques were illustrated to the clients as well as the importance of maintaining some level of record keeping avoiding fraud. For example the facilitators illustrated the use of a ledger book for keeping records of monthly income and expenditure. Facilitators also presented different types of books that can be used in business such as cash book, bank book and a purchase book, sales day book, the suppliers account record book, the customer account record book, a receipt book and an expense account book.

7. Constitution. Field workers also facilitated the creation of a group constitution in which clients agreed to a set their expectations for group activities and adopted rules governing how members interacted and supported one another. The purpose of the constitution was to reinforce the group goals and expectations agreed upon on the initial three-day training course. After the course, a copy of the constitution remained in the village with the group members.

AVSI also provided stationery packages to the group members for purposes of record keeping. After the course, AVSI staff members administered follow-up meetings every two months to monitor group formation and progress. The purpose of these follow-ups was for AVSI staff to track group formation progress as well as for the staff to interact with the groups and offer advice and guidance.

B Survey summary statistics, attrition, and randomization balance

Appendix Table 1 compares men and women in the sample. Women are less education, have fewer employment hours, do many more chores, and have lower earnings than men.

Appendix Table 2 assesses the success of targeting the poorest in the village. We do not have data on non-clients at baseline. At Phase 1 endline, however, we surveyed a random sample of approximately 25 households per village, excluding client households, and interviewed two randomly selected adults in the household. Appendix Table 1 compares our sample of clients to these non-clients. We compare summary statistics for the control villages only, in order to compare in the absence of direct treatment effects. We compare clients to all non-clients and also non-clients in the same age range. Overall, we see that everyone in the village is relatively poor, but that clients are below average in the village (as expected). Clients have 2.8 versus 4.7 years of education, work 15 versus 23 hours per week (with the reduction mainly in agriculture), have twice as many people with no employment whatsoever (9% versus 4%), actually have higher monthly cash earnings (presumably because they are engaged in market activities instead of farming), but have about three-quarters as much consumption and about 0.2 standard deviations fewer assets.

Appendix Table 3 reports response rates by survey round and the correlation between treatment and panel attrition.

- Phase 1 baseline data is complete. A very small number of respondents did not answer some questions. For the purposes of treatment effects analysis, we impute missing baseline data with the sample median in order to avoid losing the observation.

- Attrition at the Phase 1 endline was low (3.7%) and uncorrelated with assignment to treatment.

- The Phase 2 baseline represents a baseline of the 57 replacements (for the Phase 2 subjects who died or migrated away since the Phase 1 baseline) and the data collected at Phase 1 endline for all those assigned to Phase 2 who were interviewed and not replaced. We are missing 2.4% of this Phase 2 baseline data because 7 of the 57 replacements could not be surveyed, and because a small number of people were not found at the Phase 2 endline but were still eligible for the program. We impute missing Phase 2 baseline data with the Phase 1 baseline value if available and the sample median if not.

- Attrition at the Phase 2 1-month endline is 5.1% and at the 1-year endline is 4%.

There is no significant correlation with treatment (assignment to any follow-ups).

Appendix Table 4 reports the correlates of attrition in Phases 1 and 2, regressing an indicator for being found on select baseline covariates. We pool Phases 1 and 2, clustering standard errors at the individual level, because: (a) the determinants of attrition are likely to be similar in each round, and (b) there are so few attritors (less than 40 per round) that there are almost as many plausible independent variables as unfound members of the sample. From Columns 1 and 2 illustrate that there is no significant correlation with treatment assignment. There is some correlation with covariates, namely age, schooling, and current enrollment. All covariates are jointly significant in explaining attrition, but all covariates explains just 3 percent of the variation.

Appendix Table 5 reports summary stats and balance tests for a broader number of baseline covariates. Appendix Table 6 does the same for Phase 2 baseline covariates, testing balance between those assigned to no versus any follow-up.

C Ramsey model of occupational choice and investment with heterogeneous agents[1]

Consider an individual who can spend time working in one of two sectors: enterprise or traditional labor. Production functions for enterprise and traditional labor are $f^E(k, l^E, \theta)$ and $f^T(l^T, \omega)$, where k is accumulated physical and human capital used in enterprise, l^E is hours spent on enterprise, l^T is hours on traditional labor, and θ is individual specific talent in enterprise, and ω is individual specific talent in traditional labor. Working in enterprise requires a minimum capital stock $\underline{k} \geq 0$, while traditional labor has no capital requirement. We assume positive but diminishing marginal returns to inputs, $f^E_k > 0 > f^E_{kk}$, $f^E_l > 0 > f^E_{ll}$; inputs are complements, $f^E_{kl} > 0$; and the returns to inputs are increasing in ability, $f^E_{k\theta} > 0$, $f^E_{l\theta} > 0$ and $f^T_{l\omega} > 0$.[2] Also, note that $l_t = l^E_t + l^T_t \in [0, 1]$.

[1] We thank Xing Xia for excellent research assistance in developing this model.

[2] We also assume the minimum capital requirement means that $f^E(k, l^E, \theta) \equiv 0$ as long as $k < \underline{k}$, and that for any ability level, at very low levels of k, marginal product of the first unit of labor is always higher in traditional labor than in enterprise, while at higher levels of k it is the opposite, $\lim_{k \downarrow 0} \frac{f^E_l(k,0,\theta)}{f^T_l(0,\omega)} = 0$ and $\lim_{k \uparrow +\infty} \frac{f^E_l(k,0,\theta)}{f^T_l(0,\omega)} = +\infty$. For simplicity, we assume $f^E(k, l^E, \theta)$ is homogeneous of degree 1 in (k, l^E).

The individual thus faces the problem:

$$\begin{aligned} \underset{c_t>0,l_t\geq 0,k_{t+1}\geq 0,a_{t+1}}{max} \quad & \sum_{t=0} \delta^t u(c_t, l_t) \\ s.t. \;\; c_t + a_{t+1} + k_{t+1} &= (1+r_t)a_t + k_t + f^E(k_t, l_t^E, \theta) + f^T(l_t^T, \omega) \\ l_t &= l_t^E + l_t^T \leq 1 \\ k_0 &= 0 \\ a_0 & \quad given \end{aligned}$$

where a_t is any financial assets other than capital invested in enterprise and r_t is the returns to these alternative financial assets at time t. a_t is any financial assets other than capital invested in enterprise and r_t is the returns to these alternative financial assets at time t. Without loss of generality, we assume $k_0 = 0$ and all initial wealth is in the financial asset, a_0. To make analysis simple, we fix $r_t = r > 0$. Finally, to fully characterize the equilibrium we add a transversality condition: $\lim_{t\to\infty} \delta^t u_c'(c_t, l_t) a_t = 0$.

This benchmark case considers perfect financial markets and consistent time preferences. In this case, individuals will allocate assets between the enterprise and savings until the returns of capital are equal, and will allocate their time across sectors until the marginal disutility is equal. The solution to the problem is characterized as time-paths of quantities $\{c_t, l_t^E, l_t^T, k_{t+1}, a_{t+1}\}_{t=0}^{\infty}$ that satisfy the following set of conditions given $k_0 = 0$ and $a_0 > 0$:

$$\begin{aligned} \frac{u_c'(c_t, l_t)}{u_c'(c_{t+1}, l_{t+1})} &= \delta(1+r) && (1) \\ -\frac{u_l'(c_t, l_t)}{u_c'(c_t, l_t)} &= f_l^{E'}(k_t, l_t^E, \theta) \quad if \; l_t^E > 0 && (2) \\ -\frac{u_l'(c_t, l_t)}{u_c'(c_t, l_t)} &= f_l^{T'}(l_t^T, \omega) \quad if \; l_t^T > 0 && (3) \\ \frac{u_c'(c_t, l_t)}{u_c'(c_{t+1}, l_{t+1})} &= \delta(1 + f_k^{E'}(k_{t+1}, l_{t+1}^E, \theta)) \quad if \; k_{t+1} > 0 && (4) \\ c_t + a_{t+1} + k_{t+1} &= (1+r)a_t + k_t + f^E(k_t, l_t^E, \theta) + f^T(l_t^T, \omega) && (5) \\ \lim_{t\to\infty} \delta^t u_c'(c_t, l_t) a_t &= 0 && (6) \end{aligned}$$

Conditions 1 and 4 imply that whenever investment in enterprise is positive the individual always produces at efficient scale, i.e. $f_k^{E'}(k_{t+1}, l_{t+1}^E, \theta) = r$. For simplicity, we focus on interior solutions only throughout.

Who runs an enterprise? For $\underline{k} > 0$, there will be low θ types who cannot reach efficient scale because their returns to capital are lower than r. We can define a minimum ability before enterprise is feasible, $\underline{\theta} = \underline{\theta}(r, \underline{k})$ for $f_k^{E'}(\underline{k}, 1, \underline{\theta}) = r$.[3] Note that $\underline{\theta}$ does not depend on a_0.

As θ rises above $\underline{\theta}$, the returns to capital and labor increase in enterprise, and enterprise becomes a better alternative than saving all assets in a_t. This does not guarantee that the individual will invest, since time could be allocated instead to traditional labor. Not surprisingly, those with high values of ω and low values of θ will only engage in traditional labor. Specifically, there will be a second threshold, $\tilde{\theta}$, above which individuals will invest in enterprise if $\theta > \underline{\theta}$ is also satisfied. $\tilde{\theta}$ is a function of the relative marginal products of labor. The marginal product of labor in enterprise, $MPL^E(r, \theta)$, is decreasing in r and increasing in θ.[4] In the traditional sector, $MPL^T(\omega, a_0, r)$ is determined by the equilibrium level of l^T, and is increasing in ω, a_o and r.[5] For high enough ω, $MPL^T(\omega, a_0, r) \geq MPL^E(r, \theta)$, and these individuals will engage only in traditional labor and save all their assets in a_t. $MPL^T(\omega, a_0, r) = MPL^E(r, \theta)$ defines a threshold level of $\tilde{\theta} = \tilde{\theta}(\omega, r, a_o)$ where $\theta > \tilde{\theta}$ if and only if $MPL^T(\omega, a_0, r) < MPL^E(r, \theta)$. $\tilde{\theta}(\omega, r, a_0)$ is increasing in all three arguments r, ω and a_o. However, the effect of a_o on $\tilde{\theta}$ will be negligible and so we simplify to $\tilde{\theta}(\omega, r)$.

Finally, in the steady state[6], occupational choice is determined by the threshold $\theta^* = \theta^*(r, \underline{k}, \omega) = max\{\underline{\theta}(r, \underline{k}), \tilde{\theta}(\omega, r)\}$. Low ability individuals whose $\theta < \theta^*(r, \underline{k}, \omega)$ will set $k = 0$ and $l^E = 0$. c and l^T will be determined by a_o, r and w. High ability individuals

[3]Since hours working in the enterprise are upward bounded by 1 while capital invested in skilled trade must be higher than $\underline{k}$, for any individual that invests in the enterprise, $\frac{k}{l^E}$ must be higher than $\underline{k}$. Then for any $\theta < \underline{\theta}$, $k \geq \underline{k}$, and $l^s < 1$, $f_k^{E'}(k, l^E, \theta) < f_k^{E'}(\underline{k}, 1, \underline{\theta}) = r$. The inequality arises because $f_k^{E'}$ is decreasing in k but increasing in l^E and θ. Therefore, for individuals with $\theta < \underline{\theta}$, their returns to capital in enterprise is below r regardless of the level of l^E and k. Note that $\underline{\theta}$ is an increasing function of $\underline{k}$, r and other parameters in the production function f^E.

[4]If there is positive investment in enterprise, condition $f_k^{E'}(k, l^E, \theta) = r$ pins down the level of $\frac{k}{l^E}$ (this is because we assumed f^E is homogenous of degree one in (k, l^E)). $\frac{k}{l^E}$ then pins down the marginal product of labor on the right hand side of condition 3: $-\frac{u_l'(c_t, l_t)}{u_c'(c_t, l_t)} = f_l^{E'}(k_t, l_t, \theta)$.

[5]If an individual does not invest in enterprise and only engages in traditional labor, conditions 1,3,5 and 6 will pin down a level of l^T.

[6]Note that we cannot have growth on the steady state because total hours available to the individual is 1, and we assume there is no exogenous growth in productivity or individual ability. Therefore, we characterize a steady state where c_t, k_t, l_t and a_t are all constant. From optimal condition 1, we can see that, without any restraints on savings or borrowing, the existence of a steady state requires $\delta(1 + r) = 1$, otherwise we cannot keep consumption constant. Notice that this is because we assumed there is free lending and free borrowing, both at the same rate r. Patient individuals whose $\delta > \frac{1}{1+r}$ would over save and accumulate infinite wealth when $t \to \infty$; impatient individuals whose $\delta < \frac{1}{1+r}$ would borrow too much today and their assets would approach negative infinity as $t \to \infty$. In both of these cases, the transversality condition would be violated. While this condition $\delta(1 + r) = 1$ seems restrictive, we could argue that in reality, there will bounds for borrowing and savings. As long as there is lending and borrowing within some bounds at the rate r, our results would hold. We do not need $\delta(1 + r) = 1$ for our comparative analysis.

whose $\theta \geq \theta^*$ will invest in enterprise and set $k^* > 0$ and $l^{E*} > 0$ such that $f_k^{E'}(k^*, l^{E*}, \theta) = r$ and $-\frac{u_l'(c^*,l^*)}{u_c'(c^*,l^*)} = f_l^{E'}(k^*, l^{E*}, \theta) = f_l^{T'}(l^{T*}, \omega)$. Their returns to capital will be r regardless of their level of wealth. The ratio $\frac{k^*}{l^{E*}}$ will be determined by θ and r, while hours in traditional labor l^{T*} will be determined by w and r. Initial wealth a_o will have a small effect on the level of k^*, l^{E*}, c and a. Without any constraints, all individuals will immediately jump to these efficient steady state levels of production and consumption at time $t = 1$.

Impact of a windfall. With perfect financial markets, an unrestricted windfall will have no effect on entry into enterprise and little effect on earnings because it does not change θ, ω or r. The individual will immediate jump to a new steady state with higher level of savings a and consumption c, and will slightly reduce investment k and hours in enterprise l^E because of greater wealth.

Suppose instead the windfall is granted in the form of in-kind transfers or restricted funding and there is some minimal "flypaper effect" such that capital stocks are "sticky" and cannot be divested immediately. This "restricted windfall" will force individuals to produce above their efficient scale, $f_k^{E'}(k, l, \theta) < r$. c will increase as output increases in the enterprise. l^T will decrease and l^E could go either direction, depending on parameter values. Over time, if it is possible to shift capital to a, individuals will divest until the returns in enterprise drops back to r.

C.1 Cash windfalls in imperfect financial markets

Credit constraint $a_t \geq 0$

For simplicity, we consider an extreme credit constraint, $a_t \geq 0$. The intuition and comparative statics are similar for other less restrictive credit constraints. The credit constraint affects optimality conditions 1, which becomes:

$$\frac{u_c'(c_t, l_t)}{u_c'(c_{t+1}, l_{t+1})} \geq \delta(1 + r) \quad \textit{with equality if} \quad a_{t+1} > 0 \tag{7}$$

Initially wealthy entrepreneurs tend to operate at efficient scale, with marginal returns equal to r. The less wealthy, more impatient and higher ability do not have savings, will satisfy 7 with equality, and will invest below efficient scale with marginal returns are higher than r.

Credit constraints also change the steady state level of investments, returns to investments, and threshold θ^*. Define $\rho = \frac{1-\delta}{\delta}$, where a high level of ρ indicates impatience. Define k^{**} and l^{E**} such that $f_k^{s'}(k^{**}, l^{E**}, \theta) = \rho$. For impatient individuals whose $\rho > r$, the steady state level of capital and hours in the enterprise would be $k^{**} < k^*$ and l^{E**}, and

their returns to capital will be ρ. These individuals are investing below the efficient scale. For those whose $\rho < r$, the steady state level of returns will still be r and investments will still be k^* as before. To sum up, the steady state returns to capital will be $max\{r, \rho\}$. For simplicity we will still refer to the threshold as θ^*, while here $\theta^* = \theta^*(r, \underline{k}, \omega, \rho)$ and θ^* is increasing in ρ whenever $\rho > r$. This means that with a credit constraint, more impatient individuals will find enterprise undesirable than in the benchmark case.

Not surprisingly, with a credit constraint, not all whose $\theta > \theta^*$ will immediately engage in enterprise. Specifically, if there is a credit constraint, $a_t \geq 0$, then compared to the benchmark case with no constraints at all then occupational choice and investment will vary by type and initial wealth in the following manner:

1. Low ability individuals, $\theta < \theta^*$. A credit constraint will not change occupational choice, consumption or labor supply as they would not invest in the enterprise even if they are allowed to borrow.

2. High ability and High wealth, $\theta \geq \theta^*$ and $a_0 \geq k^{**}$. A credit constraint will not change occupational choice. However, investment levels and returns will depend on time preferences:

   (a) Patient types ($\rho < r$) will invest k^*, with marginal returns r.

   (b) Impatient types ($\rho > r$) will invest $k^{**} < k^*$, with marginal returns ρ.

3. High ability and below steady state wealth ($\theta \geq \theta^*$ and $\underline{k} \leq a_0 \leq k^{**}$). A credit constraint will reduce initial investment in enterprise only. They will start with an enterprise below efficient scale and over time will accumulate enough capital to reach the steady state level of investment.

4. High ability and below minimum scale wealth ($\theta \geq \theta^*$ and $a_0 \leq \underline{k}$). A credit constraint will change initial occupational choice, but whether this effect is long-term or not depends on a_0, δ and abilities in each sector:

   (a) if a_0 is close to $\underline{k}$ or ω is very high, and δ is close to one, the individual would be able to save in the initial periods and eventually accumulate enough wealth to invest in enterprise. In this case, the credit constraint only temporarily alters the individual's occupational choice. Individuals will not invest in enterprise until a_{t+1} is above $\underline{k}$, after which they start investing in enterprise and reach the steady state level of investment over time.

(b) if a_0 is far below $\underline{k}$ or ω is very low, and δ is close to zero, the individual would remain in traditional labor forever. In this case, the credit constraint has a permanent effect on the individual's occupational choice.

Impact of a windfall. We first consider an unrestricted cash windfall. In cases 1 and 2(a), individuals are in their optimal steady state and the windfall will increase consumption and savings, and slightly reduce labor supplied, but will not affect entry into enterprise or earnings. In case 2(b), individuals will increase investments in enterprise temporarily above k^{**}, increase total earnings but reduce marginal returns to capital to a level below ρ but not lower than r; over time they will reduce capital in the enterprise until capital returns in the enterprise rise up to ρ again. Consumption will rise in the long run, but savings will be zero in the long run. In case 3, the windfall will immediately increase their investments in enterprise and earnings, and they will continue to increase capital and earnings over time until they reach k^*. Likewise, in case 4, individuals will start and sustain an enterprise if the windfall is enough to cover the capital requirement $\underline{k}$. For those with extremely low level of initial wealth $a_0 < \underline{k} - M$, the windfall will not immediately affect their involvement in enterprises, but it does increase the chances of their engaging in enterprise in the long run. Whether they will eventually engage in the enterprise will again depend on their patience and productivity in traditional labor.

Next we consider a restricted windfall with some flypaper effect. In cases 1 and 2, individuals are in their optimal steady state and the results are the same as in the case of perfect financial markets: they will be forced to invest above efficient scale in the short run, earnings will increase, but returns will be low. In the long-run, they will divest and go back to the their steady state level of production, merely saving and consuming divested funds. In cases 3 and 4, individuals are below steady state and the impact will be similar to the case of the unrestricted windfall.

Savings constraint $a_t \leq 0$

Now we consider the case of a savings constraint where individuals do not have any alternative means to invest other than enterprise. They are, however, still allowed to borrow at rate r. Condition 1 now becomes

$$\frac{u_c'(c_t, l_t)}{u_c'(c_{t+1}, l_{t+1})} \leq \delta(1+r) \quad \textit{with equality if} \quad a_{t+1} < 0. \tag{8}$$

Savings constraints can lead to investment above the efficient scale. For those with debts

$a_{t+1} < 0$ (the impatient and poor ones), the first order conditions require their returns to capital to be the same as r; however, for those without debts $a_{t+1} = 0$ (the patient and savings constrained ones), these conditions mean marginal returns are lower than r.

Among those who do invest in the enterprise, for the patient individuals whose $\rho < r$, the steady state level of capital and hours are k^{**} and l^{E**}, and their returns will be ρ. Notice $k^{**}/l^{E**} > k^*/l^{E*}$. For those impatient ones whose $\rho > r$, steady state returns are still r and investments are still k^* as before. Thus the steady state returns to capital are $min\{r, \rho\}$. Because individuals are still allowed to borrow, any individual with $\theta \geq \theta^*$ would invest in enterprise, though this θ^* is lower than in the benchmark and credit constraint cases for patient individuals whose $\rho < r$.[7] Thus, under a savings constraint, more people run an enterprise at any $t > 0$, before and after everyone reaches their steady state. However, the average rate of returns among entrepreneurs will be lower than r.

Impact of a windfall. An unrestricted windfall will not change any individual's decision to engage in enterprise, since all those with $\theta \geq \theta^*$ will be already engage in enterprise at the outset. However, in the short run, since individuals cannot save, the windfall will increase consumption and capital stocks, and thus further reduce the marginal returns to capital in the enterprise below $min\{r, \rho\}$. In the long run, however, capital and consumption will drop back to the steady state level and rate of returns will rise back to $min\{r, \rho\}$.

A restricted cash transfer with a flypaper effect will immediately increase capital stocks and lower the rate of return while having no immediate impact on consumption. Over time, the individual will consume these transfers until consumption and capital stock falls back to the steady state level. The average impact on earnings will not be as high as under a credit constraint.

Savings and credit constraints $a_t = 0$

Finally we consider the effect of a savings constraint on top of a credit constraint. For those who do invest in the enterprise, their rate of returns will be $f_k^{E'}(k, l^E, \theta) = \frac{1-\delta}{\delta} = \rho$. This means the less patient will be investing below the efficient scale while the more patient will be investing above the efficient scale. This also changes the threshold level θ^* for all individuals. We would need to define θ^* using $f_k^{E'}(k, l^E, \theta) = \rho$ instead of r. For impatient ones whose $\rho > r$, θ^* would be higher than in the benchmark case; while for patient ones whose $r > \rho$,

[7] Savings constraints will lower the threshold level of θ^* for those whose $\rho < r$. This is because now we would need to define θ^* based on the new level of returns to capital $min\{r, \rho\}$ instead of r. For simplicity of discussion, we will still refer to the threshold as θ^*, while here $\theta^* = \theta^*(r, \underline{k}, \omega, \rho)$ and θ^* is increasing in ρ whenever $\rho < r$. This means that with a credit constraint, more individuals will be engaging in enterprise than in the benchmark case.

θ^* would be lower than in the benchmark case. This means, compared to the benchmark case, there will be more patient individuals and less impatient ones investing in enterprise. Individuals with $\theta < \theta^*$ (case 1 above) will be engaging in traditional labor only, as are those with high ability and below minimum scale wealth (case 4(a) and (b)).

Cash windfalls, restricted or unrestricted, will be invested in all cases.[8] Those at or near their optimal steady state level of capital (including no enterprise) will have an average return below $min\{r, \rho\}$, and those below their steady state will have average returns higher than this level.

C.2 Introducing uncertainty and imperfect insurance

Next we consider the case of risky enterprise and risky traditional labor but a riskless financial alternative. It is possible to model risk in several ways. To incorporate uncertainty, we illustrate the case where the productivity measures θ_t and ω_t are uncertain and vary over time.

Specifically, we assume that realizations of ability are normally distributed around average expected productivity $\bar{\theta}$ and $\bar{\omega}$, $\theta_t \sim N(\bar{\theta}, \delta_\theta)$ and $\omega_t \sim N(\bar{\omega}, \delta_\omega)$. Hours in enterprise and traditional labor are determined after the realization of θ_t and ω_t. Investment decisions k_t and a_t, however, are made in time $t-1$, before the realization of productivity θ_t and ω_t. We can view the individual as having a stochastic income stream delivered by the stochastic wage from traditional labor. At the same time, the individual has the option of investing his asset in either the risky enterprise with expected return $\mathbb{E}_t \left(1 + f_k^{E'}(k_{t+1}, l_{t+1}^E, \theta)\right)$ or the riskless asset with return $1 + r$.

The solution to the problem is characterized as time-paths of quantities $\{c_t, l_t^E, l_t^T, k_{t+1}, a_{t+1}\}_{t=0}^{\infty}$ that satisfy the following set of conditions for all time periods t and for all states of the world

[8] The sole exception is the very poor with initial wealth $a_0 < \underline{k} - M$. They will no longer pass a point where they have incentives to save in order to accumulate $\underline{k}$. This is a moot point if $M > \underline{k}$.

at time t:

$$\mathbb{E}_t\left[\frac{\delta u_c'(c_{t+1},l_{t+1})}{u_c'(c_t,l_t)}(1+r)\right] = 1 \tag{9}$$

$$-\frac{u_l'(c_t,l_t)}{u_c'(c_t,l_t)} = f_l^{E'}(k_t,l_t^E,\theta_t) \quad if\ l_t^E>0 \tag{10}$$

$$-\frac{u_l'(c_t,l_t)}{u_c'(c_t,l_t)} = f_l^{T'}(l_t^T,\omega_t) \quad if\ l_t^T>0 \tag{11}$$

$$\mathbb{E}_t\left[\frac{\delta u_c'(c_{t+1},l_{t+1})}{u_c'(c_t,l_t)}\left(1+f_k^E(k_{t+1},l_{t+1}^E,\theta_t)\right)\right] = 1 \quad if\ k_{t+1}>0 \tag{12}$$

$$(1+r)a_t+k_t+f^E(k_t,l_t^E,\theta_t)+f^T(l_t^T,\omega_t) = c_t+a_{t+1}+k_{t+1} \tag{13}$$

$$\lim_{j\to\infty}\mathbb{E}_t\beta^j u_c'(c_{t+j},l_{t+j})a_{t+j} = 0 \tag{14}$$

given $k_0=0$ and $a_0>0$.

Following the asset pricing literature, we define $M_t=\frac{\delta u_c'(c_{t+1},l_{t+1})}{u_c'(c_t,l_t)}$ as the stochastic discount factor. Condition 9 and 12 imply that investment in the enterprise, if positive, must satisfy the usual asset pricing equation:

$$\mathbb{E}_t f_k^{E'}(k_{t+1},l_{t+1}^E,\theta_t)-r=-(1+r)Cov_t\left(f_k^{E'}(k_{t+1},l_{t+1}^E,\theta_t),M_{t+1}\right)$$

Risk neutral individuals will invest until $\mathbb{E}f_k^{E'}(k,l^E,\theta)=r$. As in the case without risk, we refer to the level of investment that corresponds to $\mathbb{E}f_k^{E'}(k,l^E,\theta)=r$ as the efficient scale of investment.

For any risk averse individual, if θ_{t+1} and ω_{t+1} are *positively* correlated or uncorrelated, then $Cov_t\left(f_k^{E'}(k_{t+1},l_{t+1}^E,\theta_t),M_{t+1}\right)<0$ and $\mathbb{E}_t f_k^{E'}(k_{t+1},l_{t+1}^E,\theta_t)>r$. This is saying that if the returns to enterprise and traditional labor are *positively* correlated, then the riskless asset will deliver higher expected utility than the risky enterprise, and the individual will invest below the efficient scale in the enterprise as long as he is risk averse. In this case, the more risk averse the individual is, the less he invests in risky enterprise, and the higher the returns to the enterprise. Similarly, the higher the variability of θ or w, the less the individual invests in risky enterprise,

If instead, θ_{t+1} and ω_{t+1} are *negatively* correlated, i.e. the returns to enterprise and traditional labor are *negatively* correlated, then the enterprise and traditional labor are a good hedge against each other. The individual will invest more in the enterprise, or even invest above the efficient scale. The returns to enterprise $\mathbb{E}_t f_k^{E'}(k_{t+1},l_{t+1}^{sE},\theta_t)$ will be close to r, or even lower than r if the variability of ω is high.

Here the optimal level of investment is a function of interest rate r, the mean and variance

of productivity $\bar{\theta}$, δ_θ, $\bar{\omega}$, δ_ω, the correlation between θ and ω, patience δ and the degree of risk aversion. The optimal choice of whether to invest in enterprise or not then depends on all these parameters, as well as the minimum scale of production $\underline{k}$.

Impact of a windfall. We ask the same question as before: Under what conditions will the cash windfall have a sustained effect on individuals' investment in enterprise and/or returns to investment in enterprise?

Even absent a credit constraint a windfall may induce some individuals to enter into enterprise, and change investment levels for those who do invest in enterprise, simply through the wealth effect. If utility displays constant absolute risk aversion (CARA) wealth would not have any effect on the optimal level of investment, and no effect on entry into enterprise. If, however, utility displays constant relative risk aversion (CRRA) then a windfall increases the level of wealth, which then increases the optimal level of investment in the risky enterprise.

Note that there will be individuals with either very low initial wealth, or very high risk aversion, who would not invest in the risky enterprise (because of $\underline{k}$) but would do so after receiving the cash windfall. Unless the amount of the windfall is very large (relative of the minimum scale $\underline{k}$) or the individual is very risk averse, we would not expect the windfall to have a large long-run average effect on investment across many individuals.

So long as both sectors are risky, for a windfall to result in high levels of investment and high returns, there must be some other form of imperfection on top of an environment with risk. Again, a credit constraint is a likely candidate in the setting described. This conclusion rests on the assumption that there are roughly similar levels of uncertainty in the two sectors. We turn to that assumption next.

Relative uncertainty. Intuitively, the relative volatility of traditional trade and enterprise matter for investments in enterprise. More importantly, the impact of their relative volatility depends on initial wealth, the degree of risk aversion, as well as the correlation between enterprise and traditional labor.

In general terms, if either enterprise or traditional labor is relative safe (i.e. either σ_θ or σ_ω is low), then investment in enterprise k falls as $\sigma_\theta/\sigma_\omega$ increases; and the more risk averse the individual is, the steeper the slope of the fall is. If σ_θ is low while σ_ω is high, the individual will very likely engage in the enterprise, as long as she is not bounded by a credit constraint. If σ_θ is high while σ_ω is low, the individual will likely not engage in the enterprise. In both cases, a windfall will have little impact on investments and earnings.

If, however, productivity in traditional labor and enterprise are both very volatile (σ_θ and σ_ω both high), then the relationship between k and $\sigma_\theta/\sigma_\omega$ would also depend on initial wealth

a_0, the degree of risk aversion, as well as the correlation between θ and ω. First, consider the case where traditional labor and enterprise are uncorrelated or positively correlated. Holding everything else constant, if an individual has very low (or negative) initial wealth, then given a highly volatile income stream from traditional labor, the safety asset would be much more appealing to her than the enterprise even if the enterprise is less volatile than traditional labor. In this case, the individual may not enter into enterprise even if she faces no credit constraint – she might fear that she would never be able to repay the debt with her earnings. The same happens if the individual is very risk averse – she would not enter the enterprise and instead use the safety asset to smooth consumption over time. In both of these cases, a large windfall might pull the individual out of these situations and allow her to invest in the enterprise. However, if the returns from traditional labor and enterprise are negatively correlated, then again k increases as $\sigma_\theta/\sigma_\omega$ falls, and the individual will likely invest in the enterprise as long as she is not bounded by a credit constraint. In this case, a windfall will have a long term effect on those with high levels of risk aversion and low levels of initial wealth . Again, this is because a windfall increases wealth and lead the risk averse to invest more in risky assets – the enterprise.

C.3 Introducing time-inconsistency

We introduce quasi-hyperbolic (β, δ) preferences to see what predictions they hold for investment and earnings. The problem becomes:

$$\begin{aligned} \max_{c_t>0, l_t\geq 0, k_{t+1}\geq 0, a_{t+1}} \quad & u(c_t, l_t) + \beta \sum_{s=t+1}^{\infty} \delta^s u(c_s, l_s) \\ s.t. \quad c_t + a_{t+1} + k_{t+1} &= W_t \\ l_t &= l_t^E + l_t^T \leq 1 \\ W_t &\equiv (1+r_t)a_t + k_t + f^E(k_t, l_t^E, \theta) + f^T(l_t^T, \omega) \end{aligned}$$

We consider the case of a "naive" type, or "naif", who makes investment decisions under the false belief that future selves will act in the interest of the current self, and a "sophisticate" who knows exactly what her future selves' preferences will be.

Perfect financial markets

Optimal conditions 1 and 4 will now change into the general Euler equation for hyperbolic preferences:

$$\frac{u_c'(c_t, l_t)}{u_c'(c_{t+1}^P, l_{t+1})} = [\frac{\partial c_{t+1}}{\partial W_{t+1}}\beta\delta + (1 - \frac{\partial c_{t+1}}{\partial W_{t+1}})\delta] \cdot (1+r) \tag{15}$$

and

$$\frac{u_c'(c_t, l_t)}{u_c'(c_{t+1}^P, l_{t+1})} = [\frac{\partial c_{t+1}}{\partial W_{t+1}}\beta\delta + (1 - \frac{\partial c_{t+1}}{\partial W_{t+1}})\delta] \cdot (1 + f_k^{E'}(k_{t+1}, l_{t+1}^E, \theta)) \quad if\ k_{t+1} > 0 \qquad (16)$$

These resemble the Euler equations 1 and 4 under exponential discounting, except that the discount factor δ is replaced by the effective discount factor $\frac{\partial c_{t+1}}{\partial W_{t+1}}\beta\delta + (1 - \frac{\partial c_{t+1}}{\partial W_{t+1}})\delta$, a weighted average of the short-run and long-run discount factors $\beta\delta$ and δ where the weights are the next period marginal propensity to consume out of total wealth. Here W_t denotes total wealth at time t. c_{t+1}^P denotes the individual's predicted future decision about c_{t+1} at time t.

The differences between the naif and the sophisticate lie in the predicted consumption c_{t+1}^P and the marginal propensity to consume $\frac{\partial c_{t+1}}{\partial W_{t+1}}$. Sophisticates are aware of the time-inconsistency problem and will correctly anticipate future consumption. For them, $c_{t+1}^P = c_{t+1}$. Naifs, however, mistakenly believe that future selves will act as if their discount factor remains unchanged at all future dates. For them $c_{t+1}^P < c_{t+1}$. Time-inconsistency will affect both consumption and savings.

Time-inconsistency should not affect the optimal use of a cash windfall. For those with $\theta \geq \theta^*$, they will still invest until the returns to capital are equal between the enterprise and alternative financial options, or $f_k^{E'}(k, l^E, \theta) = r$. Note that consumption, hours and savings will all be different under time-inconsistency compared to our benchmark case without time-inconsistency. Thus threshold value of θ^* is different than in the benchmark case. However, the effect of a windfall will be similar to that in the benchmark case without time-inconsistency. This is because absent of any credit market imperfections, everyone will already be at their efficient scale.

Time-inconsistency with credit constraints

For a windfall to be invested and produce high average returns, some other constraint must be present. Similar to the case without time-inconsistency, credit constraints will suffice. To see this, we turn to the Euler equations again. Those who are credit constrained will put every additional dollar they get into consumption (not savings), because they are present-biased. Therefore $\frac{\partial c_{t+1}}{\partial W_{t+1}} = 1$ and the Euler equations become

$$\frac{u_c'(c_t, l_t)}{u_c'(c_{t+1}^P, l_{t+1})} = \beta\delta(1 + f_k^{E'}(k_{t+1}, l_{t+1}^E, \theta)) \quad if\ k_{t+1} > 0$$

for those who are bounded by the credit constraint, i.e. $a_{t+1} = 0$.

With time inconsistency, all credit constrained individuals will invest less than if they

were time-consistent. To see this, define τ such that $\frac{1}{1+\tau} = \beta\delta$, i.e. $\tau = \frac{1}{\beta\delta} - 1$. Since the sophisticates can correctly anticipate their future consumptions, in their steady state $c^P_{t+1} = c_{t+1} = c_t$, and the marginal rate of return will be $f^{E'}_k(k_{sophisticate}, l^E, \theta) = \tau$. Naifs will naively expect themselves to have more self-control tomorrow, and expect $c^P_{t+1} < c_t$. For them $\frac{u'_c(c_t, l_t)}{u'_c(c^P_{t+1}, l_{t+1})} < 1$ and $\rho < f^{E'}_k(k_{naive}, l^E, \theta) < \tau$. Therefore, for those who are credit constrained ($a_{t+1} = 0$), their steady state level of investment satisfies $\rho < f^{E'}_k(k_{naive}, l^E, \theta) < \tau = f^{E'}_k(k_{sophisticate}, l^E, \theta)$. They also work less and consume a larger portion of their income.

Somewhat counter-intuitively, given the levels of β and δ, the sophisticates invest even less than the naifs. This is because the naifs believe (incorrectly) that they will consume less tomorrow and eventually grow to $k = k^{**}$ just like a time-consistent type. Thus they think their average future marginal utility of consumption is low (i.e. high consumption) and therefore are willing to consume less than the sophisticates. In practice, however, we might expect β and δ to be positively correlated, or sophisticates to have both higher β and δ than the naive. In this case, sophisticates would invest more than naifs.

Impact of a windfall. The impact of a cash windfall is similar to the case with time-consistent preferences. Credit constraints (but not savings constraints) are needed in this simple model to expect investment and high returns. High investment and returns, moreover, will only be seen where people start below their steady state. The steady state levels of capital to which the time-inconsistent will move, however, are lower than the case without time inconsistency. Thus the average returns will be lower than the benchmark case, but still greater than r.

Recall, however, that in the time consistent case the average impact was expected to increase in patience (at least amongst those below their optimal steady state capital). With time inconsistency, holding patience constant, we expect the impacts to be larger among the more time-inconsistent. In practice, however, this comparative static will be difficult to identify, partly because β and δ may be correlated and partly because they may be difficult to measure separately.

More importantly, restricted windfalls with a flypaper effect have the potential to increase investment levels to k^*, at least temporarily. Eventually as long as they can divert, both types will return to their steady state level of investment.. However, if there is a commitment device, for example an in-kind transfer that cannot be diverted over time, then the sophisticates will more likely be the ones who apply for and use this in-kind transfer. Such a transfer will not only help some constrained individuals to enter into enterprise or get closer to their steady state level of investment, it will also change the steady state level of investment for the sophisticates from $k_{sophisticate}$ to k^{**}. A naive type, on the other hand,

would not want to tie their hands to such a transfer; they would prefer a transfer that can be diverted over time. Intuitively, time inconsistency makes the sophisticates act like a person with very low discount rate $\beta\delta$ every period, when in fact their real discount rate for the far future is δ. So a windfall that also act as a commitment device could push them into a new equilibrium that it wouldn't do for someone who was time-consistent but merely impatient.

D Additional treatment effects analysis

Appendix Table 7 reports the coefficients on inverse distance to all villages and inverse distance to treatment villages, standardized. A one standard deviation decrease in distance is associated with a decrease in hours worked per week, both agricultural and non-agricultural. This would seem to suggest crowding out of control village clients from employment, except that the rates of business start-up increase and incomes are unaffected. There is also a small increase in credit and access to business advice.

Appendix Table 8 reports treatment effects on work hours and earnings by occupational class, expanding the very broad agricultural and non-agricultural classes in the paper.

Appendix Table 9 reports treatment effects for additional secondary economic outcomes mentioned in the paper but not presented in those papers.

Appendix Table 10 expands the expenditures presented in Table 9 in the main paper to additional non-durable consumption categories.

Appendix Table 11 presents treatment effects on the individual components of social and community participation indexes in Table 9.

Finally, Appendix Table 12 calculates simple internal rates of return to the intervention under different scenarios. The table considers the internal rate of return associated with a perpetuity equal to the monthly cash earnings treatment effect, annualized, assuming the treatment effect is stable over the long run.

Appendix Table 1: Baseline descriptive statistics by gender

	Mean		Difference	
Select baseline covariates (N=1800)	Men (N=254)	Women (N=1546)	Mean	p-value
	(1)	(2)	(3)	(4)
Age	26.3	27.5	-1.22	0.03
Married or living with partner	43%	49%	-0.05	0.13
Single-headed household	37%	51%	-0.14	0.00
Highest grade reached at school	5.4	2.4	3.01	0.00
Reports having HIV or AIDS	4%	6%	-0.03	0.04
Weekly employment, hours	19.2	14.8	4.37	0.00
Own farm and animals	10.8	7.9	2.84	0.01
Agricultural wage labor	5.0	3.8	1.26	0.08
Casual non-agricultural labor	1.7	1.6	0.08	0.75
Brewing alcohol/beer	0.0	0.6	-0.59	0.00
Petty trading	0.4	0.4	-0.01	0.98
Other work	1.23	0.44	0.79	0.01
Weekly household chores, hours	17.0	37.3	-20.37	0.00
Zero employment hours in past month	19%	20%	-0.01	0.71
Main occupation is non-agricultural	5%	2%	0.03	0.02
Durable assets (z-score)	-0.50	-0.66	0.16	0.00
Monthly cash earnings (000s UGX)	12.36	8.38	3.99	0.00
Member of a savings group	6%	10%	-0.04	0.06
Savings stock (000s UGX)	7.63	4.40	3.23	0.01
Total outstanding loans (000s UGX)	6.06	3.83	2.23	0.06
Can obtain 15,000 UGX ($7.50) loan	31%	23%	0.08	0.01
Can obtain 100,000 UGX ($50) loan	7%	4%	0.03	0.07
Community maltreatment in past year	17%	18%	-0.00	0.91
Related to a traditional chief or LC1	37%	26%	0.11	0.00
Total traumatic war events, z-score	44%	-8%	0.52	0.00
Forcibly recruited into rebel group	24%	22%	0.02	0.52
Carried gun within rebel group	8%	3%	0.05	0.00
Forcibly married within rebel group	0.00	3%	-0.03	0.00

Notes: Individual-level covariates come from a self-reported survey of all respondents. Village-level covariates come from a survey of a community leader or leaders. All Ugandan shilling (UGX)-denominated variables and all hours worked variables were top-censored at the 99th percentile to contain outliers. Columns 1 and 2 report the male and female means, and Column 3 the p-value on the male-female difference.

Appendix Table 2: Comparison of clients to non-clients within the village
(Control villages only, at Phase 1 endline)

		Non-clients	
	Clients (N=917)	Adults 17-40 (N=1787)	All adults (N=2420)
Covariate	Mean	Mean	Mean
	(1)	(3)	(2)
Female	85%	56%	55%
Age	28	29	33
Years of education	2.8	4.7	4.5
Average weekly work hours	15.0	23.2	24.5
Agricultural weekly hours	9.7	17.7	18.3
Working on your own farm	3.5	11.4	11.6
Agricultural labor for others	1.8	3.2	3.2
Taking care of own animals	4.3	3.1	3.5
Non-agricultural weekly hours	5.4	5.6	6.2
Brewing alcohol/beer	0.9	0.7	0.7
Petty trading	1.4	0.9	0.8
Casual non-agricultural labor	1.9	1.2	1.2
Skilled non-agricultural labor	0.5	2.2	2.7
Other	0.6	0.6	0.7
No employment in past month	9%	4%	4%
Main occupation is agricultural	50%	81%	82%
Reports any hours in petty business	16%	11%	11%
Monthly cash earnings, 000s UGX	15.4	11.7	11.8
Monthly household consumption, 000s UGX	108.4	140.1	144.3
Durable assets (z-score)	-0.18	0.03	0.04
Thatch roof			
Number of goats	0.97	1.30	1.42
Number of bicycles	0.39	0.63	0.64
Number of mobile phones	0.14	0.39	0.37

Notes: Individual-level covariates come from a self-reported survey of all respondents. All Ugandan shilling (UGX)-denominated variables and all hours worked variables were top-censored at the 99th percentile to contain outliers. Column 1 reports the mean of all 917 phase 1 endline respondents who were not treated in phase 1. Columns 2 reports the mean for 1787 non-client respondents ages 17 to 40, and Column 3 reports the means for all 2420 adult non-client respondents.

Appendix Table 3: Survey response rates

Survey round	Median survey date (MM/YY) (1)	Observations: Total sought (2)	Observations: Final # of Obs. (3)	Response rates: All (4)	Response rates: Control (5)	Response rates: Treatment (6)	Response rates: Difference (7)	Response rates: p-value (8)
Phase 1								
Baseline	5/09	1,800	1,800	100.0%	100.0%	100.0%	0.0%	
Endline	12/10	1,800	1,734	96.3%	96.6%	96.1%	-0.5%	0.62
Phase 2								
Baseline	12/10	904	882	97.6%	97.8%	97.4%	-0.4%	0.72
Endline (1 mo.)	9/11	904	858	94.9%	93.1%	95.9%	2.8%	0.13
Endline (1 yr.)	7/12	904	868	96.0%	95.0%	96.6%	1.6%	0.29

Notes: Column (1) reports the median survey date. Column (2) reports the full study sample sought in each phase. Column (3) reports the final number of observations by survey round. Columns (4)-(7) report the corresponding response rates overall, by treatment status, and the treatment-control difference (calculated via regression, controlling for baseline district). Column (8) reports p-value on the difference term, using robust standard errors clustered by village. There were 1800 study subjects in Phase 1. Baseline data in Phase 2 includes the 847 original sample members from 2009, plus 2011 data on the 57 new respondents who replaced those who died or left the village.

Appendix Table 4: Correlates of attrition

	Dependent variable: Unfound	
	(1)	(2)
Assigned to treatment at P1	0.0126	0.0119
	[0.0117]	[0.0116]
Assigned to group dynamics	-0.0158	-0.0168
	[0.0129]	[0.0130]
Assigned to 2 follow-ups	-0.0202	-0.0216
	[0.0158]	[0.0158]
Assigned to 5 follow-ups	0.0084	0.0087
	[0.0150]	[0.0151]
Phase 2 dummy	0.0160	0.0182
	[0.0134]	[0.0133]
Gulu district	-0.0281	-0.0269
	[0.0074]***	[0.0086]***
Age		-0.0024
		[0.0005]***
Female		-0.0147
		[0.0132]
Married or living with partner		-0.0112
		[0.0078]
Biological children alive		-0.0029
		[0.0019]
Highest grade reached at school		-0.0036
		[0.0013]***
Currently in school		0.0538
		[0.0211]**
Physical disability, z-score		0.0023
		[0.0038]
Weekly employment hours (farm)		-0.0001
		[0.0002]
Weekly employment hours (nonfarm)		-0.0003
		[0.0004]
Durable assets (z-score)		0.0092
		[0.0087]
Monthly cash earnings (000s UGX)		-0.0002
		[0.0003]
Related to a traditional chief or LC1		-0.0126
		[0.0078]
Non-Acholi ethnic group		-0.0068
		[0.0100]
War violence experienced, z-score		0.0053
		[0.0042]
Forcibly recruited into rebel group		0.0066
		[0.0089]
Village population		0.0000
		[0.0000]
Number of shops in village		0.0004
		[0.0011]
Remoteness index, z-score		-0.0028
		[0.0042]
Observations	2704	2704
R^2	0.0068	0.0302
P (baseline covariates are jointly insignificant)		0.00
P (treatment assignments are jointly insignificant)	0.5090	0.4624

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 5: Baseline descriptive statistics and test of balance

Baseline covariate	Mean (1)	Mean treatment-control difference (2)	Balance test, p-values: Assigned to Phase 1 (3)	Assigned to group dynamics (Phase 1) (4)	Assigned to any follow-up (Phase 2) (5)	Male-female comparison: Male mean (6)	Female mean (7)	Difference (p-value) (8)
Demographics								
Age	27.33	-0.58	0.20	0.35	0.23	26.28	27.50	0.03
Female	0.86	-0.01	0.72	0.24	0.73	.	.	.
Household size	6.90	-0.26	**0.06**	0.62	0.71	6.31	6.99	0.00
Married or living with partner	0.48	-0.05	0.28	**0.07**	0.46	0.43	0.49	0.13
Biological children alive	3.33	-0.22	**0.11**	0.50	0.09	2.05	3.54	0.00
Non-Acholi ethnic group	0.15	0.02	0.63	0.35	0.20	0.12	0.15	0.27
Education and ability								
Currently in school	0.07	-0.01	0.49	0.20	0.99	0.05	0.07	0.29
Highest grade reached at school	2.79	0.07	0.70	0.69	**0.02**	5.37	2.36	0.00
Able to read and write minimally	0.26	-0.06	**0.03**	0.53	0.44	0.66	0.19	0.00
Able to speak some English	0.09	-0.01	0.37	0.37	0.09	0.31	0.05	0.00
Months of non-formal training	0.44	-0.25	**0.06**	0.69	0.39	0.85	0.38	0.13
Digit recall test score	0.00	-0.02	0.89	0.76	**0.07**	1.42	-0.23	0.00
Employment								
Weekly employment, hours	15.41	-1.63	0.11	0.50	0.87	19.16	14.79	0.00
Own farm and animals	8.34	-1.31	**0.08**	0.23	0.97	10.78	7.94	0.01
Agricultural wage labor	3.95	-0.76	**0.08**	0.46	1.00	5.03	3.78	0.08
Casual non-agricultural labor	1.62	0.03	0.92	0.59	0.87	1.69	1.61	0.75
Brewing alcohol/beer	0.51	0.06	0.45	0.92	0.71	0.00	0.59	0.00
Petty trading	0.39	0.08	0.67	0.52	0.32	0.38	0.39	0.98
Other work	0.56	0.29	0.13	0.37	0.49	1.23	0.44	0.01
Weekly household chores, hours	34.46	0.95	0.53	0.83	0.80	16.96	37.33	0.00
Zero employment hours in past mo	0.20	0.05	**0.07**	0.15	0.44	0.19	0.20	0.71
Main occupation is non-agricultura	0.02	0.01	0.11	0.70	0.52	0.05	0.02	0.02
Income and assets								
Durable assets (z-score)	-0.64	-0.06	**0.10**	0.35	0.33	-0.50	-0.66	0.00
Monthly cash earnings (000s UGX)	8.94	-0.79	0.26	0.50	0.82	12.36	8.38	0.00
Monthly cash earnings of other household earner	840.18	-136.63	0.17	0.57	**0.00**	1,174.51	785.25	0.02
Member of a savings group	0.09	-0.03	**0.07**	0.42	0.67	0.06	0.10	0.06
Savings stock (000s UGX)	4.86	-1.22	0.20	0.54	**0.02**	7.63	4.40	0.01
Total outstanding loans (000s UGX)	4.14	0.13	0.85	0.97	0.26	6.06	3.83	0.06
Can obtain 15,000 UGX ($7.50) loa	0.24	-0.01	0.56	0.76	0.15	0.31	0.23	0.01
Can obtain 100,000 UGX ($50) loa	0.04	0.01	0.34	0.86	0.77	0.07	0.04	0.07
Family and community								
Family supportiveness, z-score	-0.00	-0.19	**0.00**	0.61	0.82	0.39	-0.06	0.00
Community participation, z-score	0.00	-0.11	**0.05**	0.42	0.18	0.50	-0.08	0.00
Neighbor relations, z-score	-0.00	-0.02	0.74	0.29	0.96	0.08	-0.01	0.16
Community maltreatment in past ye	0.18	0.03	0.14	**0.07**	0.53	0.17	0.18	0.91
Domestic violence, z-score	0.08	-0.04	0.50	0.23	0.76	0.49	0.01	0.00
Economic autonomy, z-score	-0.00	0.07	0.20	0.53	0.17	0.01	-0.00	0.86
Attitudes to women's rights, z-score	-0.00	0.03	0.57	0.42	0.19	-0.15	0.02	0.00
Related to a traditional chief or LC	0.28	-0.06	0.01	**0.69**	0.67	0.37	0.26	0.00

Continued on next page

Appendix Table 5 (continued): Baseline descriptive statistics and test of balance

			Balance test, p-values			Male-female comparison		
Baseline covariate	Mean (1)	Mean treatment-control difference (2)	Assigned to Phase 1 (3)	Assigned to group dynamics (Phase 1) (4)	Assigned to any follow-up (Phase 2) (5)	Male mean (6)	Female mean (7)	Difference (p-value) (8)
Health								
Physical disability, z-score	0.00	0.01	0.90	0.85	0.54	-0.07	0.01	0.30
Reports having HIV or AIDS	0.06	-0.01	0.69	0.26	0.16	0.04	0.06	0.04
Symptoms of distress, z-score	0.80	0.10	**0.02**	0.73	0.96	0.62	0.83	0.00
War experiences								
War violence experienced, z-score	-0.01	-0.07	0.21	0.61	0.77	0.44	-0.08	0.00
Forcibly recruited into rebel group	0.22	-0.05	**0.03**	0.39	0.38	0.24	0.22	0.52
Carried gun within rebel group	0.03	-0.01	0.39	0.85	0.50	0.08	0.03	0.00
Forcibly married within rebel group	0.03	-0.00	0.63	0.83	0.96	0.00	0.03	0.00
Bore a child in forced marriage	0.01	-0.00	0.70	0.99	0.75	0.00	0.02	0.00
Preferences								
Self-reported risk aversion, z-score	0.00	0.03	0.58	0.39	0.70	-0.02	0.00	0.66
Self-reported patience, z-score	0.00	-0.02	0.62	0.41	0.09	-0.15	0.03	0.02
Village-level covariates (N=120)								
Village population	699.11	100.58	0.34	**0.09**				
Average education of village	4.38	-0.25	0.16	0.48				
Inverse distance to all villages	56.06	-5.29	0.92	0.35				
Inverse distance to treatment villages	29.66	-6.89	0.81	0.35				
Distance to capital (000s km)	45.46	1.48	0.58	0.62				
Sample members in the village	15.16	-0.18	0.50	0.95				
Remoteness index, z-score	-0.01	0.12	0.49	0.31				
Accessible by bus	0.95	0.08	**0.05**	0.31				
Minutes walk to primary school	54.48	6.66	0.49	0.77				
No mobile coverage	0.04	0.02	0.61	0.58				
Minutes walk to pay phone	99.19	9.38	0.49	0.85				
Minutes walk to health center	274.81	-10.49	0.73	0.16				
Village has a market	0.26	-0.16	**0.05**	0.83				
Minutes walk to market	110.73	12.11	0.36	0.51				
Price index, z-score	0.01	-0.32	**0.05**	0.14				
Cost of renting one unit land (UGX)	104	0.33	0.97	0.18				
Village was a camp	0.06	-0.05	0.25	0.96				
Number of NGOs active in village	7.27	-0.29	0.68	0.21				
Number of vendors in village	3.20	-1.56	0.17	0.21				
Number of kiosks in village	1.62	0.45	0.40	0.95				
Number of shops in village	1.47	0.36	0.66	0.50				
Number of tailors in village	1.49	-0.52	0.30	0.97				
Number of restaurants in village	0.42	0.18	0.42	0.96				
People buy goods from here	0.27	0.04	0.59	0.52				

Notes: Individual-level covariates come from a self-reported survey of all respondents. Village-level covariates come from a survey of a community leader or leaders. All Ugandan shilling (UGX)-denominated variables and all hours worked variables were top-censored at the 99th percentile to contain outliers. Column 1 reports the mean of all 1800 original baseline respondents prior to assignment to Phase 1 or 2. Columns 2 to 5 report results from OLS regression of each baseline characteristics on an indicator for treatment assignment plus a strata (district) fixed effect, with heteroskedastic-robust standard errors clustered at the village level. Column 2 and 3 report the coefficient on assignemnt to Phase 1 and the p-value on that coefficient. Column 4 reports the p-value on balance between those assigned to group dynamics trainng and not within Phase 1. Column 5 reports those assigned to any number of follow-up visit within Phase 2. Columns 6 and 7 report the male and female means, and Column 8 the p-value on the male-female difference. p-values below 0.10 are boldec

Appendix Table 6: Randomization balance at Phase 2 baseline

Covariates	Control Mean (1)	Difference Any Follow-Up (2)	Difference p-value (3)
Married or living with partner	0.597	0.053	**0.099**
Reports positive hours in trading/busi	0.167	-0.018	0.473
Currently has a business	0.434	-0.043	0.212
Started business since baseline	0.547	-0.059	**0.096**
Average work hours per week	16.395	-1.743	0.188
Agricultural	11.221	-2.000	**0.091**
Non-agricultural	5.091	0.243	0.715
Chores	42.113	-3.516	**0.007**
Zero employment hours in past month	0.072	0.015	0.494
Main occupation is non-agricultural	0.557	-0.067	**0.052**
Durable assets (z-score)	0.096	-0.018	0.752
Monthly cash earnings, 000s UGX	22.410	1.216	0.657
Non-durable consumption (z-score)	-0.208	-0.002	0.975
Member of a savings group	0.283	-0.019	0.516
Savings (000s UGX)	38.644	1.286	0.822
Debts (000s UGX)	5.153	-0.026	0.976
Perceived access to credit (z-score)	-0.133	0.011	0.840
Community participation, z-score	-0.021	-0.082	0.210
Neighbor relations, z-score	-0.050	-0.005	0.937
Economic autonomy, z-score	0.005	-0.032	0.671
Purchase autonomy, z-score	0.024	-0.063	0.346
Social support, z-score	-0.104	0.018	0.771
Attitudes on womens rights, z-score	-0.057	0.047	0.542
Symptoms of distress, z-score	0.585	-0.011	0.756
Patience, z-score	0.015	-0.058	0.386

Notes: Individual-level covariates come from a self-reported survey of all respondents. All Ugandan shilling (UGX)-denominated variables and all hours worked variables were top-censored at the 99th percentile to contain outliers. Column 1 reports the mean of all 904 original Phase 2 baseline respondents prior to assignment in Phase 2. Columns 2 reports results from OLS regression of each baseline characteristics on an indicator for treatment assignment plus a strata (district) fixed effect, with heteroskedastic-robust standard errors clustered at the village level. Column 3 reports the p-values for each of these coefficients. p-values below 0.10 are bolded.

Appendix Table 7: Estimated spillovers to clients in waitlist control villages

		Phase 1 estimates		
			Distance to treatment villages (z-score)	Distance to all villages (z-score)
Outcome	Control Mean	Phase 1 ITT on clients	Marginal impact	Marginal impact
	(1)	(2)	(3)	(4)
Currently has a business	0.39	0.40	-0.12	0.12
		[.026]***	[.067]*	[.07]*
Started business since baseline	0.50	0.49	0.09	-0.08
		[.023]***	[.052]*	[.055]
Average work hours per week	14.75	8.88	-14.65	14.71
		[1.348]***	[5.741]**	[6.081]**
Agricultural	9.52	3.10	-11.58	11.17
		[1.135]***	[4.092]***	[4.352]**
Non-agricultural	5.23	5.78	-3.07	3.54
		[.678]***	[2.272]	[2.38]
Petty trading/business	1.31	5.19	-8.60	8.97
		[.55]***	[2.482]***	[2.589]***
Index of income measures (z-score)	-0.21	0.50	0.03	-0.03
		[.059]***	[.266]	[.281]
Monthly cash earnings, 000s UGX	15.12	14.28	4.08	-4.56
		[2.416]***	[12.408]	[13.083]
Durable assets (z-score)	0.07	0.41	-0.03	0.04
		[.056]***	[.142]	[.151]
Non-durable consumption (z-score)	-0.22	0.46	0.04	-0.06
		[.061]***	[.181]	[.193]
Member of a savings group	0.27	0.41	0.28	-0.29
		[.039]***	[.107]**	[.113]**
Savings (000s UGX)	37.37	111.31	-47.31	49.05
		[8.893]***	[35.947]	[37.732]
Debts (000s UGX)	5.23	2.75	2.72	-2.61
		[.921]***	[1.8]	[1.862]
Perceived access to credit (z-score)	-0.14	0.25	-0.12	0.11
		[.066]***	[.17]	[.182]
Access to business advice (z-score)	-0.08	0.21	0.59	-0.56
		[.053]***	[.137]***	[.145]***

Notes : All Ugandan shilling (UGX)-denominated variables and all hours worked variables were top-censored at the 99th percentile to contain outliers. Column 1 reports the mean outcome for the control group. Columns 2 to 4 report results from an OLS regression of each outcome on an indicator for assignment to treatment, a Gulu district (strata) fixed effect, and the vector of baseline covariates reported in the online appendix. Column 2 reports the coefficients and standard errors for the indicator for assignment to treatment. Column 3 reports the coefficient and standard error for a standardized measure of average distance to all other villages in the sample. Column 4 reports the coefficient and standard error for a standardized measure of average distance to all treatment villages in the sample. Standard errors are robust and clustered at the village level.

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 8: Impacts of the full program and components on work hours and earnings, by occupation

	Phase 1				Phase 2	
		ITT estimates			ITT estimates	
Outcome	Control Mean (1)	Assignment to either treatment (2)	Marginal effect of group dynamics (3)	No follow-up mean (4)	Assignment to 2 follow-ups (5)	Marginal effect of 3-5 follow-ups (6)
Average work hours per week	14.75	8.882	0.861	31.48	0.934	3.754
		[1.348]***	[2.047]		[2.194]	[2.439]
Agricultural	9.52	3.099	0.722	26.28	-1.278	3.145
		[1.135]***	[1.56]		[2.168]	[2.211]
Own agriculture	3.45	0.573	1.531	16.47	-1.372	1.959
		[.495]	[.729]**		[1.081]	[1.053]*
Agricultural labor for others	1.76	-0.705	-0.338	2.67	-0.273	-0.146
		[.32]**	[.361]		[.464]	[.484]
Caring for own animals	4.31	3.231	-0.470	7.14	0.367	1.331
		[.857]***	[1.072]		[1.542]	[1.582]
Non-agricultural	5.23	5.783	0.138	5.19	2.212	0.609
		[.678]***	[1.22]		[.901]**	[1.124]
Brewing	0.92	-0.023	0.272	0.44	0.003	0.061
		[.162]	[.212]		[.114]	[.11]
Petty trading/business	1.31	5.192	-0.427	2.86	1.998	0.202
		[.55]***	[1.049]		[.718]***	[.931]
Casual labor	1.81	-0.532	-0.051	0.97	-0.095	-0.248
		[.323]	[.329]		[.39]	[.288]
Skilled labor	0.54	0.379	0.190	0.42	0.023	0.156
		[.255]	[.459]		[.182]	[.232]
Other	0.64	0.767	0.155	0.49	0.283	0.438
		[.228]***	[.33]		[.37]	[.603]
Monthly cash earnings, 000s UGX	15.12	14.277	10.002	13.06	3.845	-1.754
		[2.416]***	[4.004]**		[2.381]	[2.427]
Agricultural	5.19	1.569	4.833	3.47	0.553	0.243
		[1.673]	[2.793]*		[1.164]	[1.203]
Working on your own farm	3.11	0.822	4.651	0.76	0.276	-0.713
		[1.62]	[2.723]*		[.65]	[.573]
Agricultural labor for others	1.62	-0.652	-0.185	1.75	0.237	-0.194
		[.236]***	[.295]		[.583]	[.558]
Taking care of own animals	0.47	1.399	0.367	0.96	0.039	1.151
		[.463]***	[.786]		[.612]	[.75]
Non-agricultural	10.07	16.089	7.725	9.57	3.331	-1.595
		[2.466]***	[4.62]*		[2.146]	[2.156]
Casual non-agricultural labor	2.25	-0.375	0.043	1.05	0.604	-0.685
		[.406]	[.422]		[.624]	[.53]
Brewing alcohol/beer	1.60	0.481	0.078	1.01	0.186	0.212
		[.305]	[.388]		[.377]	[.364]
Petty trading	2.06	12.765	5.488	5.69	1.763	-0.630
		[1.951]***	[4.335]		[1.514]	[1.568]
Skilled non-agricultural labor	0.76	0.363	-0.067	0.71	0.576	-0.644
		[.258]	[.425]		[.852]	[.674]
Other	3.41	2.856	2.184	1.11	0.203	0.152
		[1.44]**	[1.91]		[.971]	[1.421]

Notes: All Ugandan shilling (UGX)-denominated variables and all hours worked variables were top-censored at the 99th percentile to contain outliers. Column 1 reports mean outcomes at the end of Phase 1 for participants not assigned to treatment. Column 2 reports the coefficients and standard errors on an indicator for assignment to treatment from ordinary least squares regressions of each outcome on treatment, a Gulu district (strata) fixed effect, and the vector of baseline covariates reported in the online appendix. Column 3 reports the coefficient on assignment to the group dynamics component when added to the same OLS regression as in Column 2. Column 4 reports the mean outcome for participants assigned to no follow-up. Columns 5 and 6 report the coefficients on assignment to 2 and 5 follow-ups in Phase 2 from an OLS regression of each outcome on these two treatment indicators, a stratum fixed effect, and baseline and midline covariates. Standard errors are robust and clustered at the village level.

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 9: Other economic impacts of the full program and the marginal impact of the group dynamics component

	Phase 1			Phase 2		
		ITT estimates			ITT estimates	
Outcome	Control Mean (1)	Assignment to either treatment (2)	Marginal effect of group dynamics (3)	No follow-up mean (4)	Assignment to 2 follow-ups (5)	Marginal effect of 3-5 follow-ups (6)
Non-durable consumption in 000s of UGX	32.63	10.68	-0.19	37.49	0.11	0.63
		[1.393]***	[1.944]		[1.463]	[1.271]
# of businesses tried to start since baseline	0.64	1.262	0.104	1.351	0.234	0.079
		[.055]***	[.082]		[.067]***	[.069]
# of these businesses still operating	0.72	0.254	0.056	0.728	0.130	0.073
		[.046]***	[.063]		[.056]**	[.055]
Perceived access to credit (z-score)	-0.14	0.248	0.071	-0.021	-0.043	0.173
		[.066]***	[.091]		[.075]	[.085]**
Could get a loan of 15,000 UGX in next month	0.63	0.098	0.009	0.795	0.029	0.029
		[.037]***	[.053]		[.032]	[.032]
# villagers can get 50,000 UGX loan from	1.08	0.336	0.066	1.586	-0.109	0.225
		[.114]***	[.170]		[.148]	[.141]
# of people outside village for 50,000 UGX loan	0.64	0.226	0.099	0.917	-0.125	0.218
		[.077]***	[.123]		[.116]	[.133]
Access to business advice (z-score)	-0.08	0.206	0.061	0.057	-0.080	-0.028
		[.053]***	[.064]		[.080]	[.083]
People in village you can go to for business advice	2.66	0.614	0.284	2.619	-0.091	-0.065
		[.115]***	[.157]*		[.141]	[.158]
People outside village you can go to for advice	1.92	0.172	-0.040	1.758	-0.069	0.046
		[.125]	[.163]		[.140]	[.167]
People in village you can go to for market info	2.32	0.384	0.102	2.268	-0.140	-0.217
		[.090]***	[.141]		[.181]	[.163]
People outside village you can go to for market info	1.69	0.044	-0.002	1.477	-0.116	0.090
		[.107]	[.132]		[.151]	[.136]
Maintains business records	0.106	0.428	0.054	0.409	0.130	0.056
		[.028]***	[.045]		[.038]***	[.036]
Proportion nights went hungry last week	0.027	-0.013	0.002	0.023	-0.002	-0.010
		[.005]***	[.006]		[.006]	[.005]*
Number of cattle and oxen	0.167	0.265	-0.041	0.666	0.174	-0.081
		[.054]***	[.082]		[.106]	[.101]
Number of fowl	6.007	2.701	1.357	8.371	0.751	0.716
		[.465]***	[.677]**		[.715]	[.715]
Number of donkeys, goats, sheep and pigs	1.239	1.549	-0.381	3.983	0.475	0.511
		[.165]***	[.252]		[.257]*	[.419]
Highest level of education attained	2.752	0.000	0.000	3.126	-0.008	-0.105
		[0000]	[0000]		[.151]	[.132]
Currently enrolled	0.018	0.000	-0.003	0.043	-0.019	-0.004
		[.007]	[.010]		[.015]	[.015]
Difference in highest and lowest projected income next year, 000s UGX	132.286	91.475	12.708	198.790	0.361	11.161
		[12.827]***	[22.288]		[19.413]	[16.650]
Highest projected income	243.634	173.622	8.380	384.374	15.866	21.696
		[18.543]***	[33.920]		[32.660]	[28.816]
Lowest projected income	111.349	82.147	-4.328	185.584	15.505	10.535
		[9.920]***	[17.306]		[16.683]	[15.860]
Est. probability of earning midpoint	6.802	0.299	0.020	6.732	-0.044	-0.128
		[.115]**	[.131]		[.141]	[.176]
Daily sleep time	9.602	-0.029	0.030	10.343	-0.124	0.052
		[.059]	[.085]		[.248]	[.262]
Has less leisure time than last year (self-reported indicator)	0.394	0.018	0.000	0.434	0.031	-0.002
		[.030]	[.042]		[.037]	[.043]

Notes: See Appendix Table 8.

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 10: Impact of program on weekly spending patterns

	Women (N=1551)		Men (N=249)		Female-treatment	
Proportion of weekly spending on:	Control mean (1)	ITT estimate (2)	Control mean (3)	ITT estimate (4)	Only female interacted (5)	All covariates interacted (6)
Proportion of weekly spending on:						
Other food	0.617	-0.061	0.604	-0.106	0.038	0.032
		[.014]***		[.036]***	[.028]	[.034]
Meat	0.069	0.020	0.092	0.038	-0.005	-0.002
		[.008]**		[.023]	[.017]	[.021]
Sweets	0.010	0.005	0.011	0.017	-0.013	-0.023
		[.002]***		[.006]***	[.006]**	[.007]***
Vices	0.028	0.009	0.023	-0.002	0.007	0.004
		[.004]**		[.009]	[.007]	[.010]
Food out	0.046	-0.008	0.056	0.004	-0.014	-0.032
		[.005]*		[.022]	[.014]	[.016]**
Fuel	0.027	0.000	0.025	0.003	-0.004	-0.004
		[.002]		[.004]	[.006]	[.008]
Media and communication	0.010	0.004	0.014	0.005	-0.002	0.006
		[.002]**		[.007]	[.005]	[.005]
Personal expenses	0.061	-0.005	0.056	-0.003	-0.002	0.004
		[.003]**		[.007]	[.005]	[.007]
Transport	0.022	0.015	0.021	0.014	-0.004	0.005
		[.005]***		[.011]	[.010]	[.014]
Male clothing	0.016	0.003	0.021	0.002	0.002	0.002
		[.001]**		[.005]	[.004]	[.005]
Female clothing	0.013	0.002	0.015	0.000	0.004	0.005
		[.001]		[.003]	[.003]	[.003]
Medical expenses	0.021	0.004	0.015	0.004	0.000	0.004
		[.002]**		[.004]	[.003]	[.005]
Education	0.052	0.010	0.042	0.016	-0.007	0.002
		[.005]*		[.010]	[.010]	[.015]
Home improvements, utilities	0.005	0.002	0.004	0.006	-0.001	0.000
		[.001]**		[.003]**	[.002]	[.003]
Net transfers into household	9.115	29.910	21.417	43.570	-2.942	-9.710
		[5.095]***		[16.341]***	[14.588]	[18.976]
Transfers received	17.483	41.174	34.418	50.387	-0.468	-5.744
		[5.011]***		[16.609]***	[14.056]	[16.820]
Transfers given	7.810	8.805	12.760	5.916	-0.038	0.150
		[1.520]***		[6.058]	[4.714]	[6.163]

Notes: Columns 1 and 3 report mean outcomes for women and men in the control group. Column 2 and 4 report results from an OLS regression of each outcome on assignment to treatment, a Gulu district (strata) fixed effect, and the vector of baseline covariates reported in the online appendix. Column 5 reports the coefficient on the interaction between the treatmen and female indicators in a OLS regression of each outcome on assignment to treatments, a Gulu district (strata) fixed effect, and the vector of baseline covariates, pooling men and women. Column 6 reports the coefficient and standard errors on the interaction between female and treatment when every other baseline covariate is also interacted with treatment (excluding those that are highly collinear with female, such as hours of chores). Standard errors are robust and clustered at the village level.

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 11: Self-reported social support and community participation

Outcomes	Women (N=1551)		Men (N=249)	
	Control mean (1)	ITT estimate (2)	Control mean (3)	ITT estimate (4)
Quality of family relationships (z-score)	-0.028	0.011	0.305	0.114
		[.047]		[.153]
Do you talk with HH members about your thoughts and troubles? (0-3)	2.166	0.049	2.372	-0.119
		[.046]		[.137]
Do you receive practical help from your HH? (0-3)	2.354	0.064	2.570	0.128
		[.046]		[.107]
Do you have quarrels or hostility with HH members? (0-3)	2.573	-0.087	2.702	0.168
		[.045]*		[.1]*
Social support received (z-score)	-0.107	0.158	0.058	0.129
		[.056]***		[.166]
Is there someone who listened to you talk about your thoughts and feelings? (0-3)	1.048	0.054	1.149	0.157
		[.054]		[.188]
Is there someone who sat together with you when you were feeling distressed or lonely? (0-3)	0.912	0.117	0.843	0.138
		[.063]*		[.194]
Is there someone who took you to do some work or activities to help you get your mind off of things? (0-3)	0.386	0.082	0.504	-0.108
		[.047]*		[.129]
Is there someone who assisted you in finding direction and making plans for the future? (0-3)	0.707	0.212	0.909	0.236
		[.051]***		[.18]
Do you turn to friends or neighbors for advice? (0-3)	1.887	-0.023	2.000	0.096
		[.045]		[.109]
Do you receive practical help from your friends and neighbors? (0-3)	1.545	0.118	1.554	-0.040
		[.058]**		[.163]
Do you receive material help from your friends or neighbors, such as cash loans, clothes, or supplies you need? (0-3)	0.682	0.079	0.818	0.047
		[.057]		[.128]
Community participation (z-score)	-0.179	0.228	0.418	0.401
		[.056]***		[.179]**
Are you someone who mobilizes the community for meetings?	0.137	0.039	0.322	0.156
		[.022]*		[.071]**
Participated in local election	0.531	0.055	0.612	0.034
		[.031]*		[.077]
Given opinion at community meeting	0.238	0.125	0.529	0.175
		[.023]***		[.079]**
Community leadership activities (z-score)	-0.120	0.173	0.448	0.156
		[.054]***		[.169]
Is a community leader	0.129	0.055	0.331	0.048
		[.023]**		[.076]
If nominated to become an LC1 by your community and you had the time, would you want to hold such a position?	0.329	0.056	0.483	0.052
		[.025]**		[.086]
Political participation (z-score)	-0.091	0.121	0.439	0.218
		[.08]		[.129]*
Can you tell me the name of your current LC3?	0.753	0.086	0.908	0.074
		[.038]**		[.043]*
Can you tell me the name of the current LC5?	0.458	0.003	0.712	0.095
		[.037]		[.076]

Continued on next page

Appendix Table 12 (continued): Self-reported social support and community participation

Outcomes	Women (N=1551)		Men (N=249)	
	Control mean (1)	ITT estimate (2)	Control mean (3)	ITT estimate (4)
Community hostility index (z-score)	-0.053	0.072	-0.179	-0.076
		[.055]		[.133]
Do you have serious conflicts with people in this community? (0-3)	2.831	-0.060	2.876	-0.064
		[.033]*		[.077]
Have community members said things to insult or hurt you since Christmas? (0-3)	2.785	-0.032	2.851	-0.008
		[.034]		[.087]
Have community members been physically aggressive with you without provocation since Christmas? (0-3)	2.838	-0.018	2.917	0.051
		[.027]		[.083]
Have community members said things to insult or hurt your children since Christmas? (0-3)	2.813	-0.024	2.856	0.185
		[.033]		[.082]**
Crime victimization in past year (z-score)	-0.177	0.255	-0.177	0.432
		[.052]***		[.121]***
Has been a victim of a theft	0.077	0.082	0.107	0.145
		[.019]***		[.049]***
Has been a victim of a burglary	0.041	0.050	0.017	0.061
		[.013]***		[.033]*
Has been a victim of a robbery	0.009	0.006	0.025	0.002
		[.006]		[.02]
Has been a victim of a violent assault	0.023	0.002	0.008	0.049
		[.008]		[.033]
Has been a victim of property destruction	0.047	0.036	0.033	0.065
		[.013]***		[.035]*
Has had goods stolen or destroyed	0.138	0.128	0.149	0.149
		[.024]***		[.054]***

Notes: Columns 1 and 3 report mean outcomes for women and men in the control group. Column 2 and 4 report coefficients and standard deviations for an indicator for assignment to treatment from an OLS regression of each outcome on assignment to treatment, a Gulu district (strata) fixed effect, and the vector of baseline covariates reported in the online appendix. Standard errors are robust and clustered at the village level.

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 12: Internal rate of return calculations

Phase	Earnings treatment effects	ATE (2009 UGX) Monthly	ATE (2009 UGX) Annual (×12)	Estimated cost (2009 UGX)*	IRR of perpetuity	Present value of perpetuity at rate: 10%	Present value of perpetuity at rate: 3%
1	Full program	14,277	171,328	1,720,063	10%	1,713,278	5,710,925
	Without follow-up impact & cost	12,186	146,235	961,705	15%	1,462,352	4,874,505
	Hypothetical lower-cost program**	12,186	146,235	535,380	27%	1,462,352	4,874,505
2	2 follow-ups	3,845	46,143	278,733	17%	461,433	1,538,110
	5 follow ups	2,091	25,093	696,832	4%	250,926	836,420

* A rough breakdown of Phase 1 costs per client is as follows, in 000s UGX: Grant, 300; Targeting and disbursement, 251; Business training, 248; Group dynamics training, 163; 5 follow-ups, 697; Other, 61.

** The cost figure is equal to 1.1 times the cost of the cash grant plus half the business skills and group dynamics training program cost