



## Building Women's Economic and Social Empowerment Through Enterprise

### An Experimental Assessment of the Women's Income Generating Support (WINGS) Program in Uganda

April 2013

Christopher Blattman  
Columbia University

Eric Green  
Duke University

Jeannie Annan  
International Rescue Committee & Harvard University

Julian Jamison  
Consumer Financial Protection Bureau

with

Filder Aryemo,  
Natalie Carlson,  
Mathilde Emeriau, and  
Alexander Segura,  
Innovations for Poverty Action

## Executive Summary

Investing in women is said to be a key to development. Educate her, buy her a cow or goat, or help her start a business and great things will follow: sustained increases in income, greater empowerment and social inclusion, health and education for the children, and (especially in war-affected regions) mental health and happiness.

Testing whether this is true will take a great many studies and interventions. In this report we study the impacts of giving cash grants of approximately \$150 and basic business skills training to the very poorest and most excluded women in a war-affected region, northern Uganda. The program was designed and implemented by an Italian non-governmental organization (NGO), AVSI Uganda, with decades of experience serving this population.

1800 poor young women (and some men) in 120 villages were randomly assigned to a first or second phase of the intervention, allowing us to assess the impacts after roughly 18 months. In each phase we also vary core program components—organizing women in some villages into groups, varying the degree of supervision and advising they receive, and varying the level of involvement of the husband.

This report provides provisional answers to these questions based on data collected from April 2009 to August 2012. The questions will continue to be explored and analyzed in academic papers in future, but we attempt to draw out the key findings and policy lessons as close to the end of the intervention and data collection as possible.

First, we see dramatic increases in business and reductions in poverty. The women were encouraged by the NGO to begin with retail trading and goods, and most start and sustain small retail businesses with the capital they receive, while continuing their farming and other miscellaneous activities. A year after the intervention, monthly cash earnings doubled from 16,500 Uganda Shillings (UGX) to 31,300 (\$6.60 to \$12.52 U.S. Dollars; USD), cash savings tripled, and short-term expenditures and durable assets increased 30 to 50% relative to the control group. While the absolute changes seem small in magnitude, these are huge gains relative to where these women start.

The treatment is most impactful on the people with the lowest initial levels of capital and access to credit. This is largely consistent with economic theories of poverty that argue that the poor have the potential to be productive but are constrained by an absence of cheap capital. The most constrained thus tend to benefit most from treatment. Other factors that we might worry would inhibit success—low education, high levels of emotional distress, or poor health—seem to have little association with the impact of the intervention.

Second, although these results suggest the program leads to relatively large increases in income and wealth, we see no effect on women's independence, status in the community, or freedom from intimate partner violence (though, importantly, the program does not increase a woman's probability of experiencing partner violence). Perhaps economic success and empowerment are not closely linked, at least in the short run, for poverty impacts of our magnitude. Likewise, we see little evidence that a more inclusive role for males in the household leads to better empowerment or economic success, although we see promising improvement in partner support and relationships.

Third, we see little effect on psychological or social well-being from this reduction in poverty. This is congruent with other experimental studies, including employment programs in northern Uganda, that show little short-term connection between poverty relief and either social support or symptoms of distress.

Fourth, close supervision and advising by the NGO leads to slight increases in economic success. Patterns of grant spending shift very little, marginally away from durable asset investment into business expenditures. This suggests some effect of “accountability”. Longer-run incomes are higher by about \$2 (UGX 5,000) monthly, concentrated among higher earners (the median impact is less than half the average impact). There is little difference in capital investments. This suggests that the advising aspect of the visit may have provided value. We see little psychosocial impact, however, suggesting the gains are mainly economic. The economic gains for some people are large enough that, if they are sustained over a long enough time horizon, they may justify the cost of providing this intensive attention. The impact, such as it is, is most apparent for one to two rounds of supervision. Supervision and advice beyond this first or second visit does not seem to have an economic impact and so probably does not pass a cost-benefit test.

Fifth, we see large spillover effects into these small village economies. With most women becoming traders, imports from major trading centers increase, and the price of consumer goods fall. This raises the spending power of all households and so real earnings rise. Since they spend some of the grant domestically, demand for locally-produced goods also rises, increasing incomes as well. Households which are already trading, however, experience more competition and falling profits, possibly because of a reduction in market power. Thus net consumers tend to benefit from the intervention along with the direct beneficiaries, and net producers (or traders) tend to lose out.

Overall this program seems most effective at poverty alleviation, and organizations looking to empower women or reduce exclusion will need to experiment with alternative approaches. To maximize the poverty alleviation impacts for the most people, interventions like this one must strive to become more cost effective. Costs of disbursement, targeting and follow-up should be streamlined so that they are less (even far less) than the grant size. Components like business training should be evaluated more rigorously. A straight up comparison of these additions to their value in cash is an important study for the entire humanitarian sector.

## Acknowledgments

We thank AVSI Uganda and AVSI USA for their cooperation and long partnership in designing and implementing this program. We are especially thankful to Jackie Aldrette, Ezio Castelli, Federico Riccio, Francesca Oliva, Fabio Beltramini, John Makoha, Samuele Rizzo, Filippo Ciantia, Massimo Zucca and Francesco Frigerio.

We gratefully acknowledge research funding and support from AVSI Uganda, a Vanguard Charitable Trust, the Learning on Gender and Conflict in Africa (LOGICA) Trust Fund at the World Bank, and Yale University's Institution for Social and Policy Studies.

For research assistance, we especially thank Filder Aryemo, Natalie Carlson, Mathilde Emeriau, Sara Lowes, Lucy Martin, Godfrey Okot, Alexander Segura, and Christian Lehmann.

# Contents

<b>Executive Summary</b>	<b>i</b>
<b>Contents</b>	<b>iii</b>
<b>1. Introduction</b>	<b>1</b>
<b>2. Intervention and Research Design</b>	<b>3</b>
<i>a. Context: Northern Uganda</i>	3
<i>b. WINGS Intervention</i>	3
<i>c. Research Design</i>	4
<b>3. Who are the beneficiaries and what do they do?</b>	<b>9</b>
<i>a. Participant profiles</i>	9
<i>b. Businesses proposed and pursued</i>	12
<b>4. Impacts of the core Intervention: Do economic and social empowerment go hand in hand?</b>	<b>14</b>
<i>c. Impacts on earnings and earnings opportunities</i>	14
<i>d. What is the distribution of poverty impacts?</i>	17
<i>e. Who succeeds?</i>	19
<i>f. Health and social impacts</i>	22
<b>5. Are these impacts “high”? A cost-benefit analysis</b>	<b>28</b>
<i>a. From “impact” to relative return”</i>	28
<i>b. Estimating the returns to the WINGS program</i>	32
<i>c. The returns to follow-up</i>	33
<i>d. Conclusions</i>	33
<b>6. What are the effects of the WINGS programs on other village members, especially existing traders and entrepreneurs?</b>	<b>34</b>
<b>7. Do supervision and mentoring improve performance? The effectiveness (and cost-effectiveness) of follow-up</b>	<b>35</b>
<i>a. The potential gains from follow-up: The “accountability” and “advice” effects</i>	35
<i>b. Distinguishing accountability from advice</i>	36
<i>c. Short-term impacts of follow-up</i>	37
<i>d. Longer term (one-year) impacts of follow-up</i>	41
<i>e. Is follow-up cost effective?</i>	46
<b>8. The effect of building social and group networks</b>	<b>47</b>
<b>9. Does Male Involvement Promote Women’s Empowerment and Well-Being?</b>	<b>50</b>
<b>10. Discussion and Conclusions</b>	<b>57</b>
<b>Appendix: A statistics primer</b>	<b>62</b>
<b>References</b>	<b>64</b>

# 1. Introduction

This study investigates an attempt to economically and socially empower some of the poorest and most vulnerable young women in one of the poorest and most fragile places in the world: northern Uganda.

We experimentally evaluate the intervention to answer a series of bigger questions in aid and development:

First, does providing inputs like cash and business skills help the very poorest build sustainable sources of income? If so, what does this tell us about the causes of poverty and the constraints holding back the poor?

Second, does such economic empowerment (like reduced poverty and sustainable businesses) lead to broader forms of empowerment (like increased independence and reduced risk of violence)? How important is the support and inclusion of important men in a woman's life, such as partners, fathers, and brothers?

Third, does economic empowerment have social and psychological benefits as well? That is, do poverty relief and sustainable new businesses increase social support and decrease psychological distress among a war-affected, relatively excluded population?

Fourth, does supervision and mentoring lead the poor to spend or invest differently, and what is the effect on general economic success and poverty reduction? Should NGOs and governments leave the poor to decide for themselves how to spend aid, or would the aid be more successfully used with accountability and advice?

Fifth, in small village economies, what are the effects of cash transfers on those who don't receive the grants? What effect does increased business competition and trade have on the welfare of other consumers and producers in the village?

Northern Uganda might seem like a special case, emerging from twenty years of conflict and displacement. Unfortunately, conflict and crisis-affected countries are not all that rare. Also, in most low and middle-income countries (conflicted or not), the very poorest are similar in many ways to the very poorest in northern Uganda. They are often young people, more often than not female, who have few skills and capital, little prospect of earning a living, and, to the extent they are dislocated from their family or community, have little of the support needed to survive another bad shock.

Governments and aid organizations in nearly every country deal with women and men like this every day, and how to empower them—literally, to increase their economic and social strength—is a constant question with few clear answers.

Perhaps the most common approach is to give poor people “inputs”—cash, capital, microfinance, skills, and other things that go into production. These might be small farms, or self-managed “micro” enterprises. Such interventions make a couple of crucial assumptions. One is that the very poor can use these inputs productively—that there are high returns to these inputs. A second is that they are somehow constrained from obtaining these inputs in the absence of the intervention. If one or both of these assumptions are false, then we should see little change in poverty or empowerment from the endowment of inputs.

These are probably fair assumptions to make, or so more and more investigation suggests. Growing evidence implies that, at least on average, the poor can earn high returns to cash, capital, and new skills.

This is not altogether surprising if one believes in steep returns at low levels of initial resources, but would be more surprising if there were deep complementarities across physical, social, economic, and cognitive capital. Moreover, the poor are undoubtedly constrained. Business investments and finance are especially scarce and expensive, partly because financial markets are grossly underdeveloped. A great many forces conspire to constrain the poor.

More evidence is needed, especially among the poorest, and especially among women. This study adds to that body of evidence, examining a program that not only provides grants and skills training to the poorest of the poor, but also intensive advising and supervision.

Advice and supervision is common in interventions targeting the poor. People rich and poor alike make bad or shortsighted decisions with their money, especially (it is feared) with large windfalls sitting in their pockets. Even the most disciplined may face family or social pressures to share funds, or to pay for pressing but short-term needs. These concerns spawn programs that range from the lightest of nudges to the heaviest paternalism. There is little evidence on what level of supervision, if any, is needed, and whether self-enforcement at the group or the individual level is possible.

Finally, we are seldom concerned narrowly with economic empowerment alone, but also empowering people more generally—improving their ability to access the fundamental elements of development: happiness, health, education, rights, and social and political participation. To what extent do anti-poverty programs not only empower people economically, but socially and psychologically as well? In the case of women in male-dominated societies, is the best way to achieve this with or without the cooperation of men?

This study tackles these questions in the context of an experimental project with some of the poorest young people, primarily women, in northern Uganda. We collaborated with a non-governmental organization, AVSI Uganda, to study their integrated approach, testing their package of interventions experimentally as a whole, but also experimentally varying some of the key components of the package to answer some of these more general questions of economic and social empowerment.

Specifically, we try to address the following questions:

- Can a program of business skills training, cash grants, and intensive follow-up help some of the poorest women build sustainable enterprises and raise their earnings? If so, what does this tell us about the roots of poverty and how to alleviate it?
- Face-to-face meetings with program staff and social workers are often an integral part of such programs. Follow-up can provide accountability and give clients the incentive to invest their grants rather than “eat” them or dissipate them through the kin network. Training and follow-up also impart ideas and advice. But this face-time is expensive. Is it cost-effective? And is an intensive and face-to-face approach consistent with the goal of empowerment?
- Does this poverty alleviation lead to social and psychological gains? Or, put another way: does economic empowerment lead to social empowerment?
- What role does the social group and the household, especially the spouse, play in women’s economic success? Can approaches that build group or household cohesion, or that include the spouse, increase economic and social success and empowerment?
- Looking even more broadly, what are the effects on other villagers of giving cash to a subset of them? In a small economy, does encouraging multiple new businesses have negative (or positive) spillovers for existing businesses?

## 2. Intervention and Research Design

### a. Context: Northern Uganda

Twenty years of war and widespread displacement have left the majority of the population of northern Uganda impoverished. Social networks that traditionally cared for the most vulnerable in this region are greatly overstretched. Those marginalized from kin and their communities are at-risk both economically and socially. It will take many years for households to build up assets and livestock and achieve pre-war levels of productivity and income. A major worry is that the most vulnerable households will not be able to develop and maintain livelihoods and income without assistance that targets their specific needs, including provision of skills, capital, and social networks.

Young women and girls in particular have suffered economically and educationally from the war. In 2007 AVSI and two of the IPA Investigators surveyed more than 600 young females aged 14 to 35 affected by the conflict in northern Uganda, including more than 200 women formerly abducted by the armed group. The evidence from the survey, along with program experience among NGOs in northern Uganda, suggests that the development of new economic opportunities and building social capital will be crucial ingredients in reducing poverty and improving the health, education and psychosocial well-being of youth. Young women, especially those with children or orphans to care for, are in most need of such livelihoods assistance. This includes a disproportionate number of formerly abducted young mothers, most of whom do not return to school.

An international NGO, AVSI Uganda, has been active in Northern Uganda for almost three decades. Over the last 7 years, AVSI developed and refined an economic assistance program that targets the most vulnerable members of the community and provides them with extensive psychosocial services and social networks alongside business skills and grant (rather than credit-based) assistance. To assess the program and the research questions above, we worked with AVSI on the design, implementation and evaluation of two new phases of the program in 2009 and 2011: the Women's Income Generation Support, or WINGS, program.

### b. WINGS Intervention

There are three components to the core WINGS program: (i) a few days of business skills training (BST), (ii) an individual start-up grant of roughly \$150, and (iii) regular follow-up by trained community workers. Optional components include (iv) group formation, training and self-support; and (v) spousal inclusion, training and support. A brief description of each follows.

#### *Business Skills Training*

AVSI provides a brief course in basic business skills for all participants. This course typically runs for five days and covers topics necessary for the planning, starting, and managing of simple business activities. The curriculum has been adapted for illiterate users and AVSI staff is experienced in effectively working with illiterate beneficiaries, who are the majority of the target group of this proposed program. Trainers are AVSI staff members with years of experience in the psychosocial and livelihoods sector and with specific training in business skills, group dynamics and problem solving within the world of business. Clients submit business plans to the AVSI team after the training. Each plan is reviewed and discussed with the client. Upon approval, the client is eligible for a start-up grant.

### *Start-Up Grant*

All clients receive a start-up grant of approximately \$150 USD to be used for the implementation of approved business plans. In the past, this money has been disbursed all at once and in several tranches.

### *Follow-up*

AVSI understands that the importance of follow-up visits to the individual and the groups is important from two sides: the inter-personal and the business dimension. Many years of experience have demonstrated to AVSI that on-going support for young, new entrepreneurs is essential to help them succeed and address the challenges that arise with every nascent business endeavor. Clients receive at least three follow up visits.

On the business side, AVSI staff maintains close supervision of business activities for the first few business cycles, providing advice on meeting market challenges and implementing sound business practices. AVSI staff have been trained in business skills and most importantly have years of experience within the environment of small enterprises in the specific geographic districts of this program, with accumulated links to successful businesses and an array of formal and informal financial services.

### *Group Training*

While not a part of the core WINGS intervention, AVSI has the ability to help individual entrepreneurs in the same community form business support networks to enable them to effectively share information and ideas, to collaborate in activities like savings and investment, and (possibly) to reinforce farsighted investment decisions and discourage shortsighted consumption. Group support of this nature is a common feature of savings, enterprise development, and microfinance programs partly for these reasons.

AVSI has developed a Group Dynamics facilitator's manual based on years of experience in Uganda. The manual addresses topics such as the purpose and usefulness of group participation, qualities and selection of group leaders, communication skills, record keeping and evaluation of progress; these topics are approached through interaction with the participants and frequent small group work and activities. It is one of the added components we will evaluate.

### *Spousal inclusion and training*

A central tenant of AVSI's approach is to take a holistic view of a person's needs and resources. Typically this leads the organization to prioritize working with households and families rather than individuals whenever possible. Prior to this evaluation, AVSI had allowed individuals to participate in their livelihoods programs with partners, but such inclusion was not systematic. As we describe in a later section, AVSI formalized their approach to working with partners for the purpose of this evaluation and created new training materials and a follow-up procedures to enable them to better support individuals participating in the program with a partner.

## **c. Research Design**

The WINGS program and evaluation began in January 2009 and concluded in 2012. At the start of the program, AVSI worked with leaders in 120 communities in Gulu and Kitgum districts to identify and screen 2,300 potential beneficiaries. Following this initial assessment, AVSI selected 1,800 of the most

vulnerable residents between the ages of 14 and 30 (86% female), approximately 15 per program community.

The empirical strategy for the evaluation consisted of a randomized experimental design and mixed-methods data collection. Following the baseline survey with all 1,800 beneficiaries in mid-2009, IPA held public lotteries in Gulu and Kitgum to randomly assign the 120 program villages to Phase 1 or Phase 2 (stratified by district). In this wait-list control design, all beneficiaries were guaranteed to receive the program, but not all at once. By serving 900 beneficiaries per phase, AVSI had to scale-up their program by 300 percent. Therefore, it was not possible to serve all intended beneficiaries at once.

Phase 1 started in mid 2009 and Phase 2 began in early 2011 following the endline survey of all 1,800 beneficiaries in November 2010. By comparing the beneficiaries in Phase 1 to those in Phase 2, who had not received the program at the time of the endline survey, we were able to estimate the medium-run impacts of the program on our core outcomes of interest: sustained livelihoods, poverty, empowerment, gender-based violence, family education and health, and psychosocial well being.

In addition to the pre and post surveys of all beneficiaries, the IPA team also conducted in-depth qualitative data on the process of business development; administered additional experimental behavioral economic activities (Interactive Behavioral Measurements, or IBMs) to measure beneficiaries' risk and time preferences that may impact business decision-making and success; and completed a community survey with non-participants to measure community-level impact of the program on market prices and existing entrepreneurs. The qualitative work fed largely into the research design in Phase 2. Additional qualitative work, and analysis of the IBMs, will be incorporated in future academic papers.

### *Program Variations*

**Support for Business Networks.** AVSI's experience with this program model suggested that the target women lack support networks that they could use for business advice, savings and lending, and other support. Development programs commonly form villagers, especially women, into groups for this purpose. It is universal, yet untested. We wanted to test whether this was an effective way to increase success and well-being. Therefore in the 60 Phase 1 villages we instituted a cross-cutting design (CCD), where women in 30 of the Phase 1 villages were encouraged to form a mutual support group, elect a leadership, and hold regular meetings. The groups received two days of advising and team building exercises. When we conduct the interim survey at the end of Phase 1, we will be able to measure the impact of these women's support networks on all of our outcomes of interest.

**Follow-Up Dose.** Program experience suggests that on-going support for young, new entrepreneurs is essential to help them succeed and address the challenges that arise with every nascent business endeavor, but it is not clear that close monitoring is cost-effective or essential to business success. AVSI staff maintains close supervision of business activities for the first few business cycles, providing advice on meeting market challenges and implementing sound business practices. In addition to these economic objectives, the follow-ups were conceived as a means of counteracting the relative marginalization of the target group.

To the best of our knowledge, the economic and social impacts of follow-up support to recipients of economic assistance programs like WINGS has not been rigorously evaluated. The most relevant literature may be the role and impact of loan officers in microfinance programs, but the evidence base is very limited (Siwale & Ritchie, 2011). Given the logistical challenges and high cost of facilitating multiple home visits and monitoring, it is important to demonstrate the cost-effectiveness of this component of the program. In the second phase of the study, beneficiaries were randomized to receive 0 follow-up visits, 2 visits, or 5 visits to estimate the effect of follow-up 'dose'. In addition to studying the impact of

dose, we also attempted to tease apart the mechanism of follow-up impact—‘accountability’ versus longer-term advising and relationship building—by examining differences in early spending decisions based on beneficiaries’ expectations of follow-up.

**Household Approach.** The link between economic assistance programs and women’s empowerment is mixed. Women’s income tends to increase and benefit household members, particularly children, but women targeted for assistance do not consistently report increased empowerment, such as greater independence from their male partners, increased control over household resources, or more participation in household decision-making. Increasingly, researchers, donors, and practitioners have begun to focus on the role of men in women’s empowerment (DAW, 2003; Sternberg & Hubley, 2004), but rigorous evaluations of interventions involving men are still rare.

As we describe in the next section, our main findings for the standard WINGS package support this “impact-paradox”<sup>1</sup>: targeting a vulnerable woman to be the recipient of an economic assistance program benefits the household financially, but on average does not empower the woman or improve her well-being in any measurable way in the medium-term. This finding led the research and program teams to design and evaluate a slight reframing of the intervention from an individual-approach to a more holistic household-approach targeting the woman plus an important household member. We called this new version of the program “Women Plus”, or W+ for short.

We wanted to test the hypothesis that we could maintain (or increase) the positive household effects observed when targeting the woman while also having a positive impact on her sense of empowerment and well-being. So we asked every pending program recipient to identify an important household member who could participate in the initial phases of business development—from the business skills training through the process of proposing, launching, and growing the business in the medium term. The idea was to support the woman as the principal business owner while engaging a key member of her household who could provide direct or indirect support for the business.

To test this hypothesis, we randomized the 60 Phase 2 villages to participate in either the standard WINGS program or the W+ variant. Program beneficiaries in villages assigned to W+ could invite an important household member to join them at the initial business skills training; beneficiaries in control villages participated as individuals. While we did not require W+ beneficiaries to participate with a partner or dictate who that partner had to be, most women participated with husbands, male companions, or other important male figures; the male participants in W+ villages could also attend the training with a partner.

W+ program beneficiaries and their partners received the same training as beneficiaries in control villages over the same number of days, but W+ teams also completed additional training modules during this time that focused on communication, joint problem-solving, and gender relations. We added this aspect of the training for W+ because the results of a heterogeneity analysis supported our qualitative finding that women with more supportive partners at baseline were more successful in the program.

---

<sup>1</sup> Garikipati, S. (2008). The Impact of Lending to Women on Household Vulnerability and Women’s Empowerment: Evidence from India. *World Development*, 36(12), 2620-2642. doi:16/j.worlddev.2007.11.008

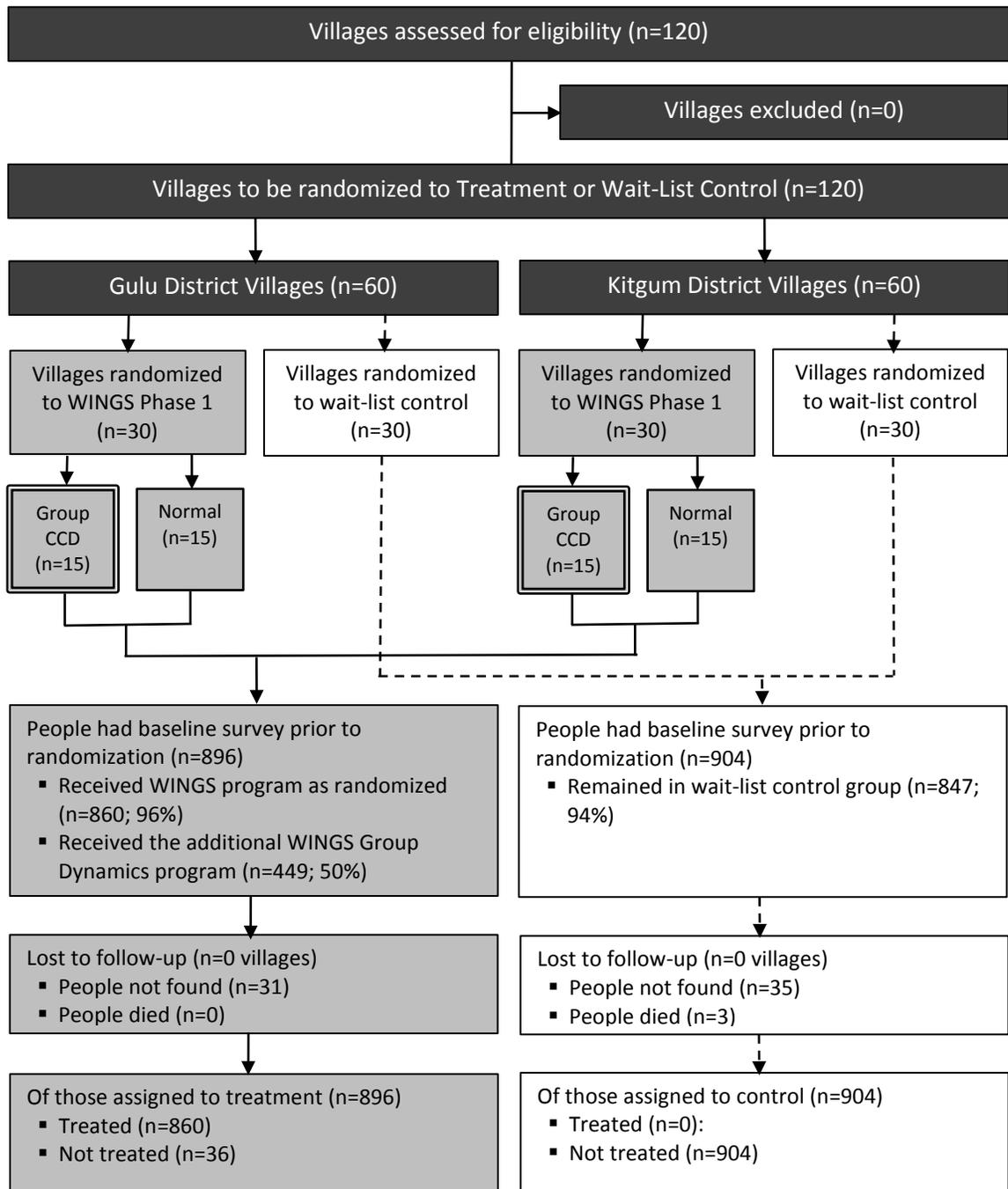
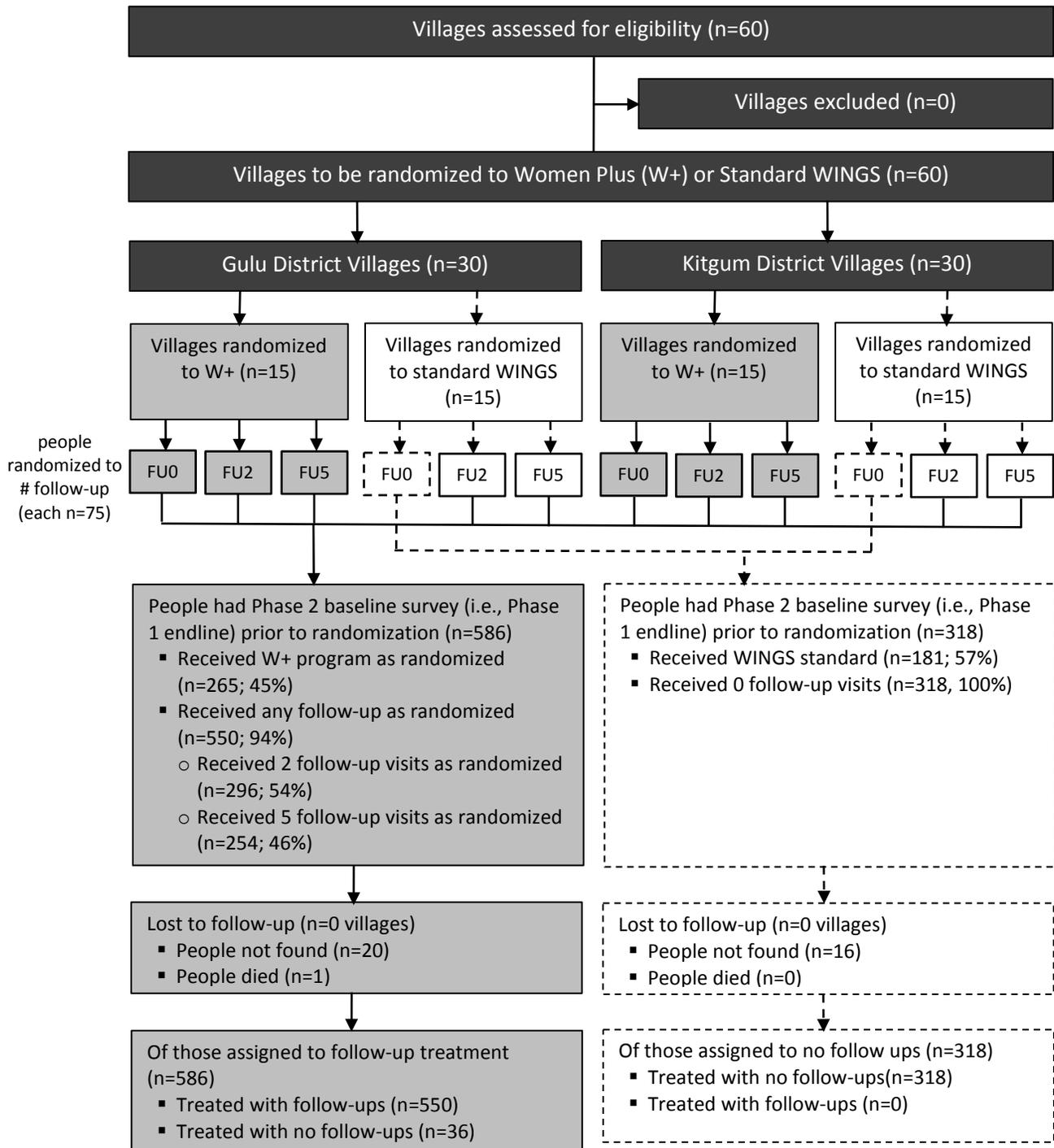


Figure 1. Flow diagram for Phase 1.



**Figure 2. Flow diagram for Phase 2.**

### 3. Who are the beneficiaries and what do they do?

Who is eligible for the intervention, what do they do prior to the intervention, and how do occupations change? We review some pre-program (baseline) data on the treatment and control group before turning to impacts.

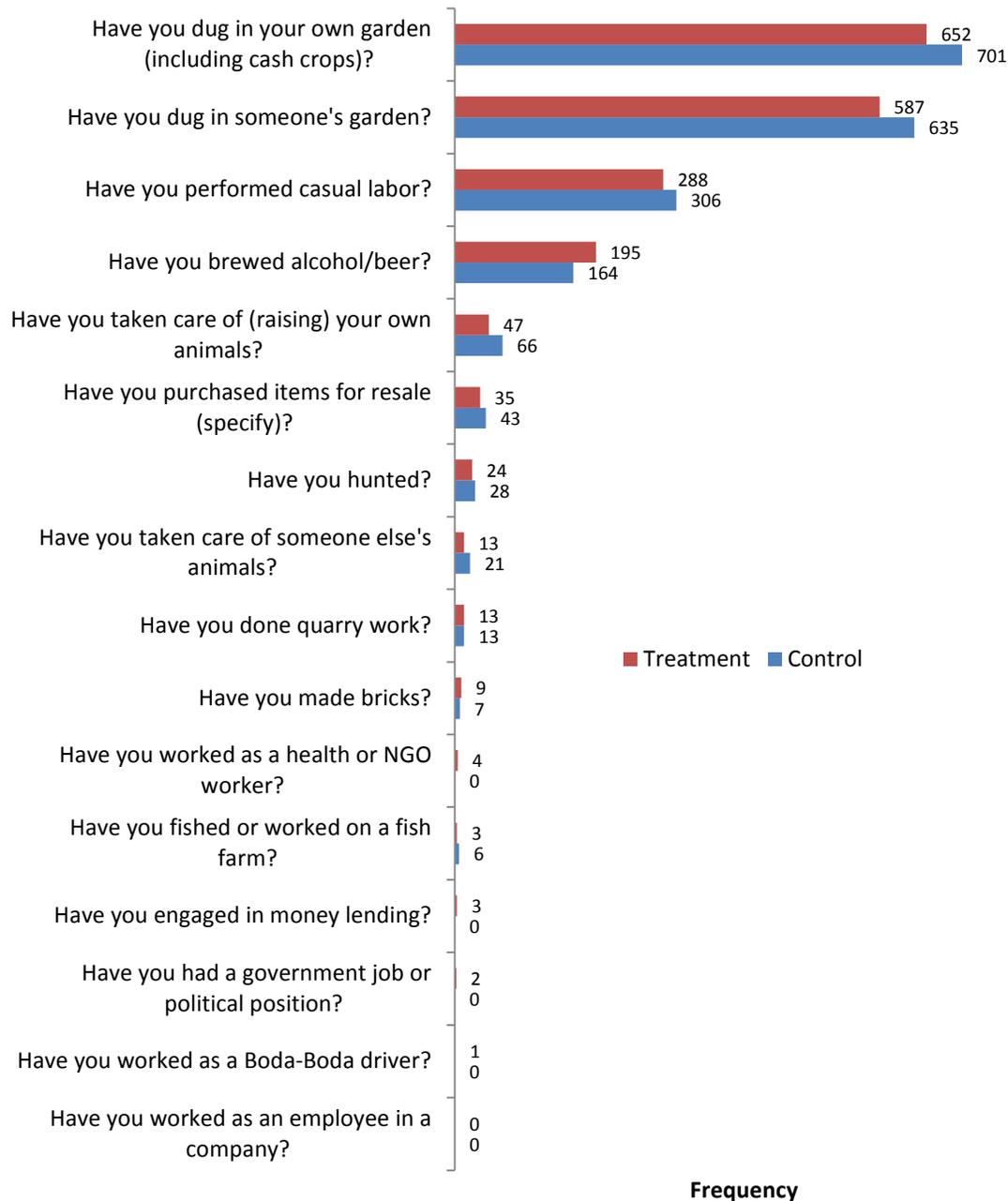
#### a. Participant profiles

As shown in Table 1 below, the typical WINGS candidate was a young woman between the ages of 20 and 35, with little or no formal education, low income and limited access to credit.

**Table 1: Summary statistics of population at baseline**

<b>Gender</b>		
Male	13.8%	
Female	86.1%	
<b>Age</b>		
Under 20	13.9%	
20-24	20.1%	
25-29	28.3%	
30-34	21.0%	
35+	16.7%	
<b>Education</b>		
Percentage with no formal schooling	39.7%	
Percentage with 8 or more years of schooling	3.6%	
Mean years of schooling	2.8	
<b>Economic</b>		<b>USD</b>
Mean cash earnings (UGX, past 4 weeks)	8,914	\$3.58
Mean savings (UGX)	4,839	\$1.94
Percentage with access to UGX 15k loan	23.8%	
Percentage with access to UGX 100k loan	4.1%	

Farming activity, followed by casual labor, are the main economic activities before the intervention. Relatively few women engage in trading or trades. Figure 3 below shows the frequency of various activities at baseline (the number of people, out of the sample of 1,800, who answered “yes” to the following questions regarding their activities in the past four weeks).



**Figure 3: Number of people who reported having done each activity in the past four weeks at baseline**

The above figure looks at the frequency, not the intensity of activities. Figure 4 below shows the breakdown of economic activity by hours at baseline, for all participants (treatment and control). It tells a similar story to the frequency chart above, in which the largest percentage of time is spent on farming and subsistence work. Farming, animal raising and casual labor make up approximately 90% of hours spent on economic activity.

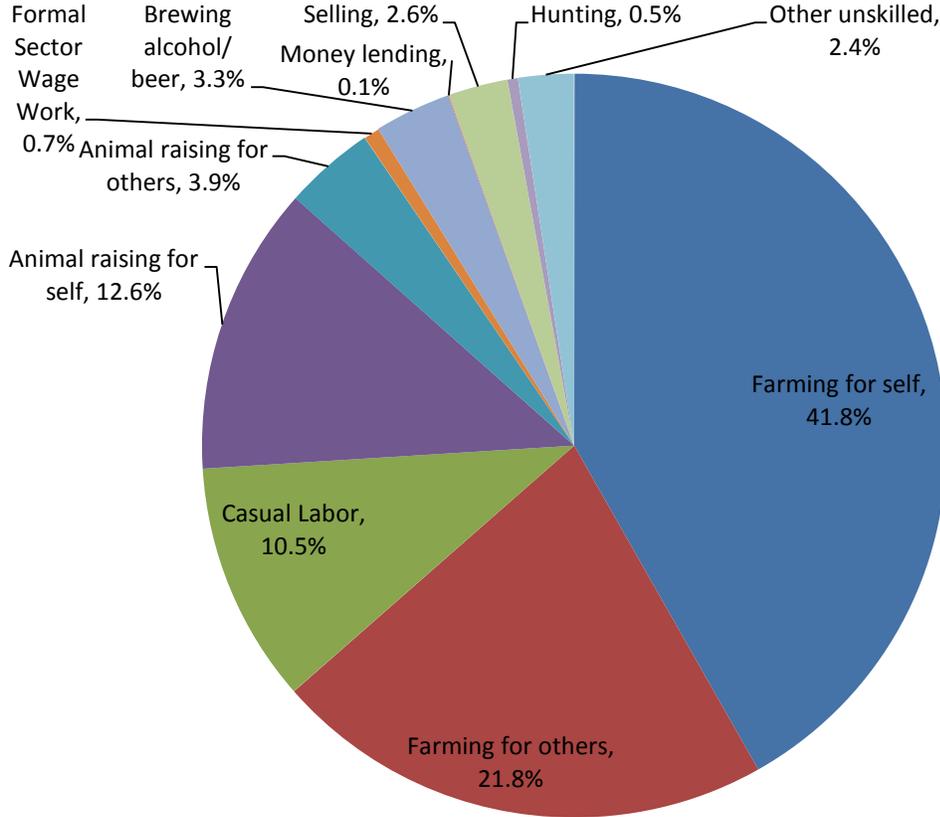


Figure 4: Hours spent on economic activity at baseline

## b. Businesses proposed and pursued

What types of enterprise did people pursue? We look at the activities proposed by Phase 1 beneficiaries and also their overall pattern of economic activities eighteen months after treatment. We see a substantial increase in trading activities.

Business plans proposed by WINGS recipients were then received and approved by AVSI. Figure 5, taken from an AVSI presentation, shows the breakdown of these approved businesses by type. Over half the businesses centered on the general selling of mixed items, with the rest being dominated by selling of livestock, fish and farm products.

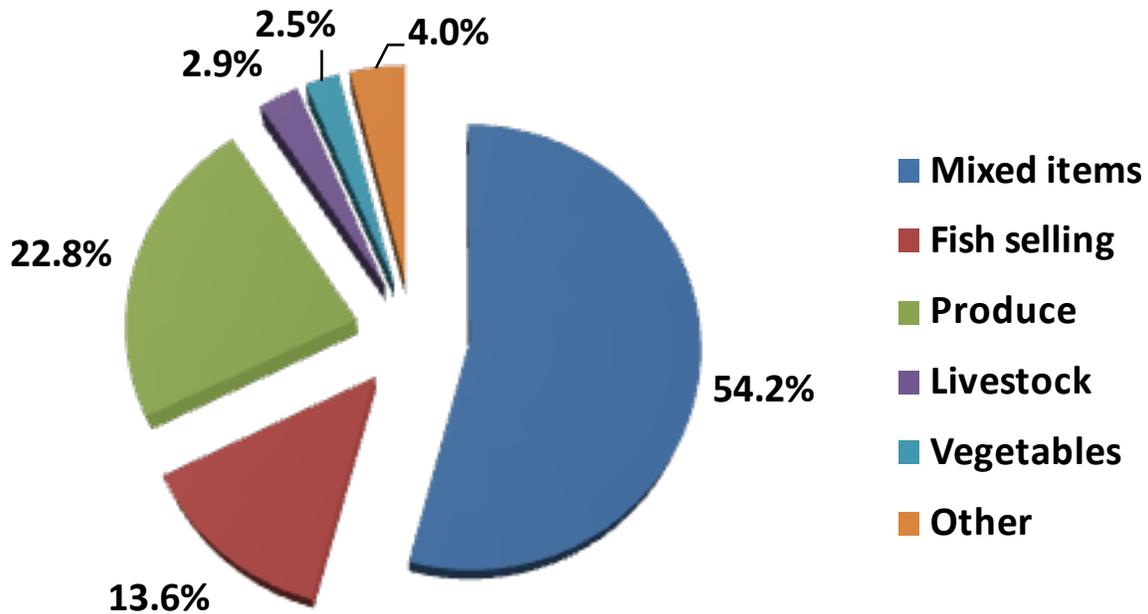
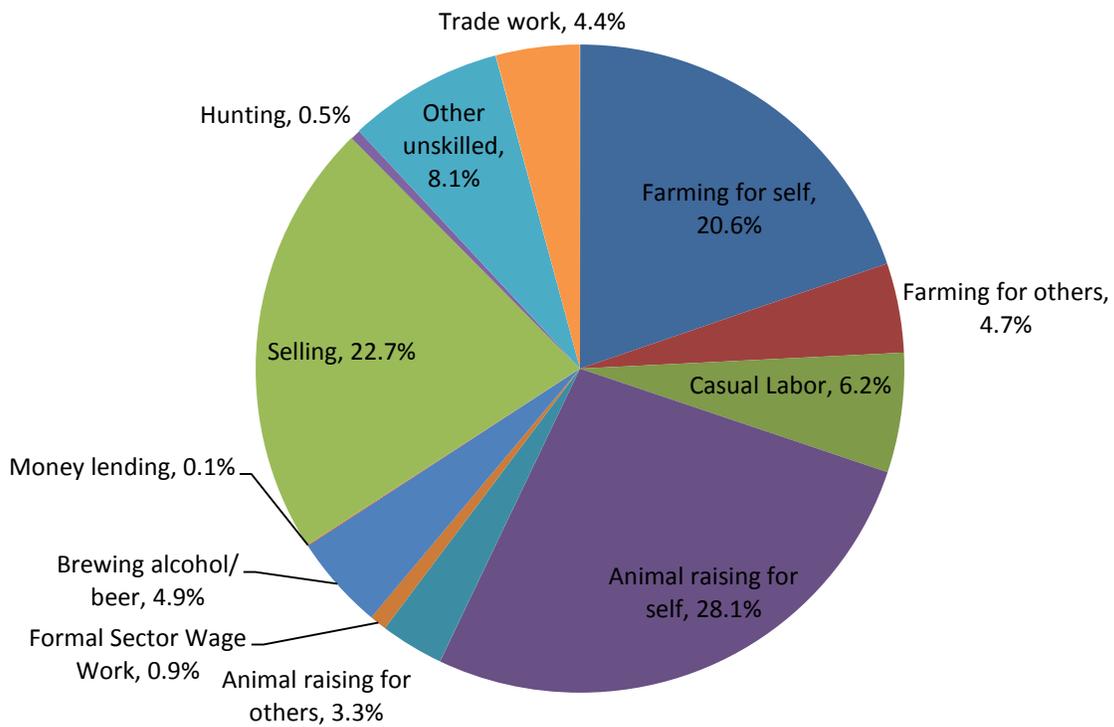


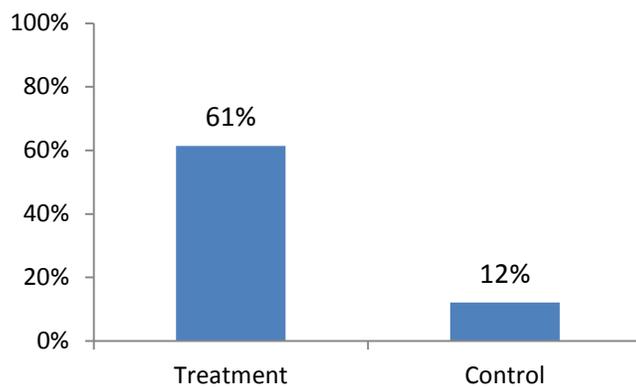
Figure 5: Business approved for AVSI recipients

Following the intervention, we see a dramatic shift in hours spent selling items (from 2.6% up to 22.7% of time) and an increase in animal raising and farming for oneself (below, in Figure 6). This is likely the direct impact of the new businesses started by the WINGS beneficiaries, in which they were selling produce, livestock or various items.



**Figure 6: Hours spent on economic activity at midline**

Eighteen months after the intervention, Phase 1 beneficiaries are roughly 50 percentage points more likely to be engaged in trading—61% of treated people are engaged in trading versus 12% of controls. Figure 7 displays these means, calculated on a series of questions concerning whether participants had regularly sold fruits, vegetables, livestock, livestock products, grains, or groceries that they had either primarily or exclusively purchased for resale.



**Figure 7: Percentage of group buying and reselling at midline**

## 4. Impacts of the core Intervention: Do economic and social empowerment go hand in hand?

We begin with a simple comparison of the initial Phase 1 group to the Phase 2 group, roughly 18 months after Phase 1 received the training and grant, but before Phase 2 started the program.

Table 2, below, lists a number of indicators of economic well-being and the average levels among those assigned to the WINGS program and those assigned to the control group (Phase 2), roughly 18 months after the start of the intervention. The difference between these two averages is the impact of the program. In figures below, we report the level and proportional change this average treatment effect represents (using estimates from average treatment regressions rather than the simple difference between the treatment and control group).

**Table 2: Indicators of economic well-being in the control and treatment (assigned to WINGS) groups**

<b>Indicator</b>	<b>Control</b>	<b>Treatment</b>
Net cash earnings in the past 4 weeks (000's of UGX)	16.5	31.3
Household short-term spending (000s of UGX)	35.6	46.5
Wealth index (0 to 1)	0.4	0.5
Total hours of employment in the past 4 weeks	59	92
Total hours spent on chores in the past 4 weeks	158	161
Total hours spent on subsistence work in the past 4 weeks	30	41
Total hours spent on market activities in the past 4 weeks	29	50
Value of transfers out of the household since Christmas (000s of UGX)	9.3	18.7
Outstanding loans (000s of UGX)	5.7	9.3
Perceived access to credit (index)	0.8	1.0
Savings (000s of UGX)	40.7	163.4

### c. Impacts on earnings and earnings opportunities

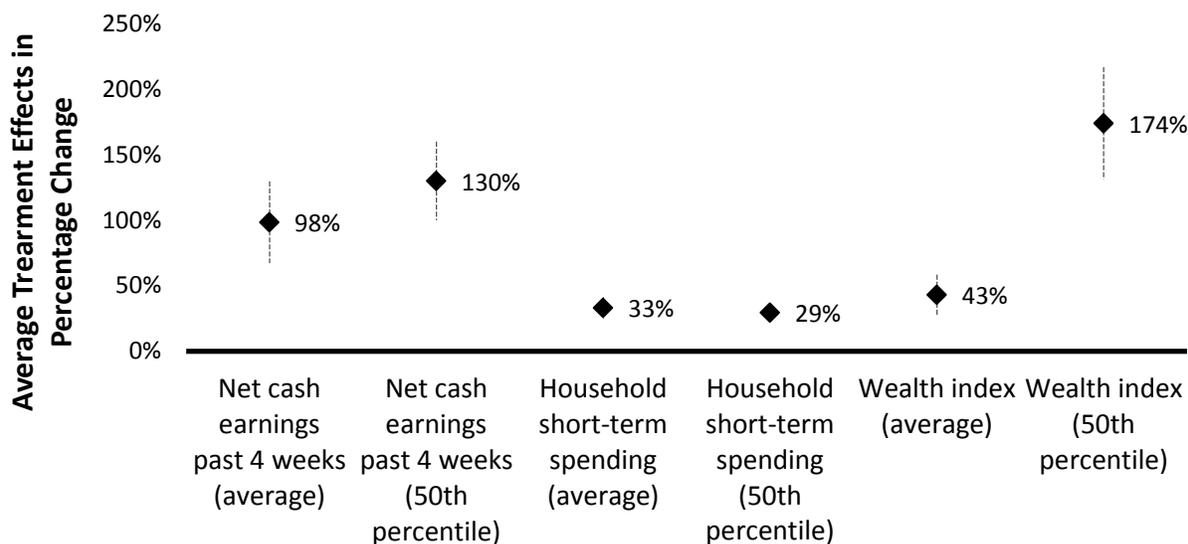
An important goal of the WINGS program is to help beneficiaries create small businesses that generate earnings and earning opportunities for the women or household. The most important goal is to reduce poverty and the extreme deprivation of being on the poorest end of an already extremely poor population.

There are a number of ways to measure poverty, including cash earnings, the money that households actually spend on goods and services (i.e., short term consumption), and the stock of more durable assets and other forms of wealth (an asset or wealth index). Throughout this report we will rely on all three.

Comparing the treated to the (temporary) control group, the WINGS program had a very large effect on cash earnings relative to the control group, essentially doubling individual incomes among program recipients compared to the control group. (Note: This cash income excludes income that may be received in kind, such as from subsistence farming.) For the average WINGS beneficiary, net cash

earnings increased UGX 16,211 in the month before the survey, a 98% increase over controls (See Table 2 and Figure 8).<sup>2</sup>

In absolute terms, an increase of UGX 16,211 does not seem large (about \$6.50 at market exchange rates of 2500). Relative to the average income in the control group it is quite substantial, however. The low absolute level of profits should be kept in mind when looking at these large relative changes.



**Figure 8. Average treatment effects on poverty**

Diamond represents the Average Treatment Effects in Percentage Change. Average Treatment Effect is equal to the difference in mean between the Treatment Group and the Control Group. The dashed line spans the Lower and Upper bound of the Confidence Interval.

This average impact is influenced, and possibly skewed, by a small number of people who do very well. For instance, at the 99<sup>th</sup> percentile, we have people in the treatment group who earn as much as UGX 288,000 in a month, perhaps because of an unusually good month. To avoid drawing conclusions about the whole program from high-performers, we can also look at the median treatment effect, which is how the person in the precise middle of the treatment group performed. For that median person, their monthly income increased UGX 7,800 (equivalent to USD 3.13 at the 2010 market exchange rate). The median control group member earned just UGX 6,700 (USD 2.69) a month, so you could read the median treatment effect as a doubling of incomes at the median (Figure 8). Again, however, note that the absolute levels of change are fairly small.

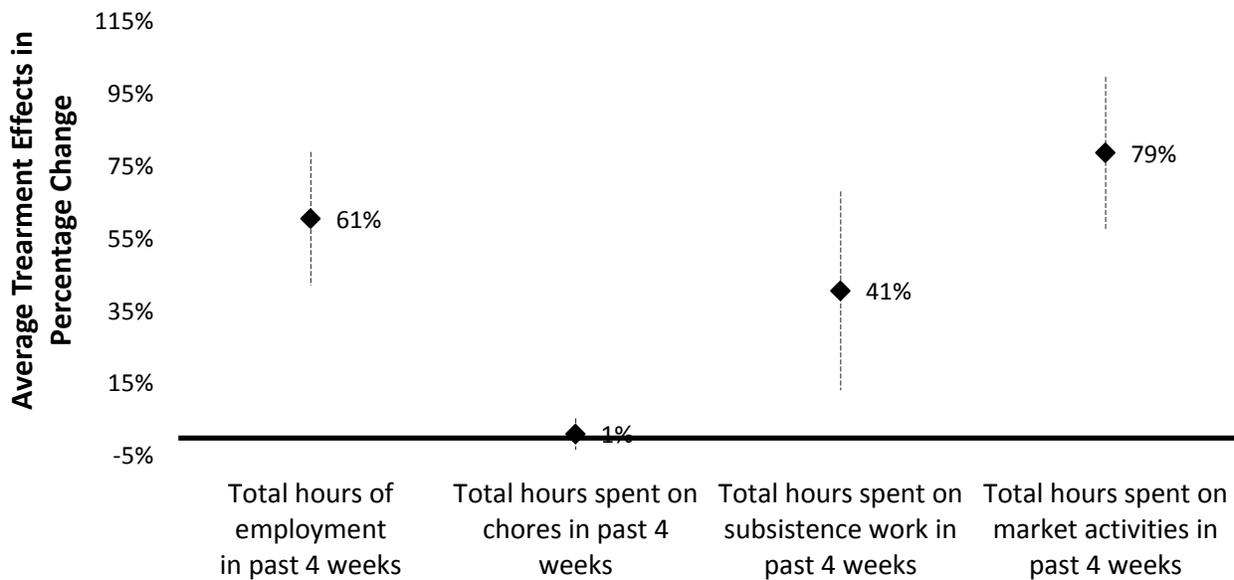
Income is not the only way to measure material well-being. Net income is volatile, and may not represent actual change in poverty and material well-being, because it could be temporary, or shared with others or saved for later in life. Thus economists typically use a measure of “consumption” as a measure of poverty. We have two measures of consumption:

<sup>2</sup> About half the income gains come from additional work; beneficiaries use the capital and skills they receive to increase hours of employment. Thus hourly earnings increase by about half. This suggests that the program enables people to increase productivity. This productivity may come from the new business skills, or it may represent returns available all along, but that an absence of credit or capital kept them from achieving.

- i. Household short-term spending: This is an estimate of the household’s short term spending per person on food and non-food items in the previous month.
- ii. Household wealth index: This is an index, scaled 0 to 1, of the household’s durable assets (e.g. furniture) and housing quality, and so reflects wealth and potential for long term consumption and spending.

Our household spending measure increases UGX 11,741 (USD 4.72) from the program, which is a 33% increase over the control group (Figure 8). Both the consumption and income impact are clearly statistically different from zero, meaning we are assured of a positive impact. The median treatment effect is fairly similar in proportion. As with income, however, the absolute change is smaller.

We also see an increase in wealth. The absolute value of the index does not have an easy or natural interpretation. It is an approximate ranking of households. The average and median treatment effects are large and positive, and statistically robust, implying that WINGS clients substantially increase their durable assets relative to the control group. We can interpret these results as saying that the increased income from the intervention is channeled largely into short-term as well as durable consumption, raising standards of living.



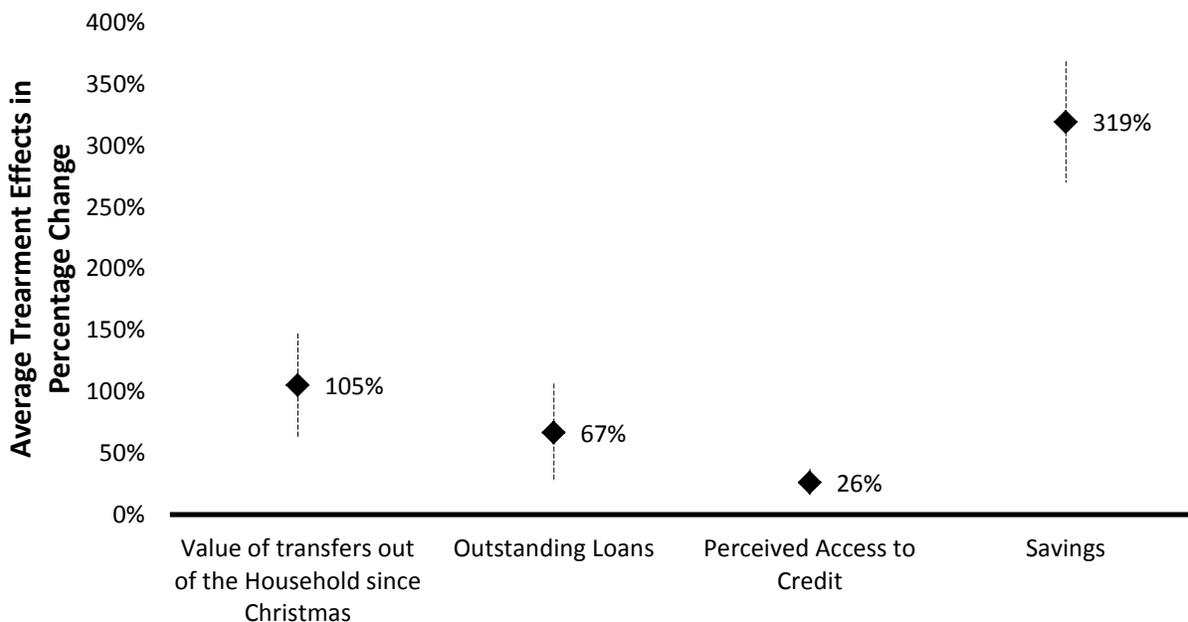
**Figure 9. Average treatment effects on employment**

Diamond represents the Average Treatment Effects in Percentage Change. Average Treatment Effect is equal to the difference in mean between the Treatment Group and the Control Group. The dashed line spans the Lower and Upper bound of the Confidence Interval.

From Figure 9, we also see that hours of employment increase substantially. WINGS clients do not change the hours they spend on chores, but they do increase their labor supply in earning activities, either agriculture (which we classify as subsistence work) and also market activities (including their enterprise, plus any other enterprises and wage work). One interpretation is that the added capital from the grant and from ongoing higher incomes mean that the client’s labor is more productive, and so they increase hours of work. This interpretation rests on the idea that the clients were capital constrained

before the grant of cash—they could earn high returns from added capital, if they had it, by growing the size of their enterprise and working more at it. Capital and labor are complements, and so when the cash is received the clients respond by increasing their labor to use the new capital as effectively as possible. Economic theory suggests this rise in labor supply is countered, somewhat, by an “income effect” whereby wealthier people want to consume more of everything, including more leisure time. For the capital constrained, this income effect is probably swamped by the incentives to increase work.

Figure 10 displays financial impacts. Savings triples on average, going from UGX 40,740 (USD 16.36) to UGX 169,862 (USD 68.22). Some income is also transferred to other household members and outside the household. Our consumption measure includes spending inside the household on education and health. But it does not include transfers outside the household, which were UGX 9,734 (USD 3.90) more among the treated than the controls, a 105% increase over controls.

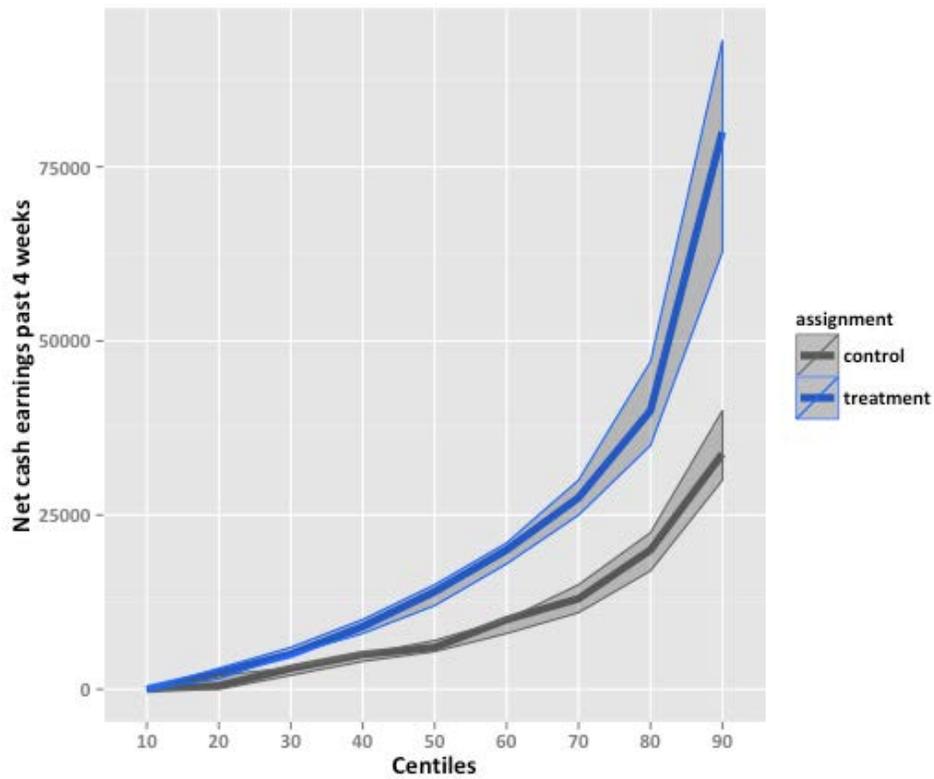


**Figure 10. Average treatment effects on financial outcomes.**

Diamond represents the Average Treatment Effects in Percentage Change. Average Treatment Effect is equal to the difference in mean between the Treatment Group and the Control Group. The dashed line spans the Lower and Upper bound of the Confidence Interval.

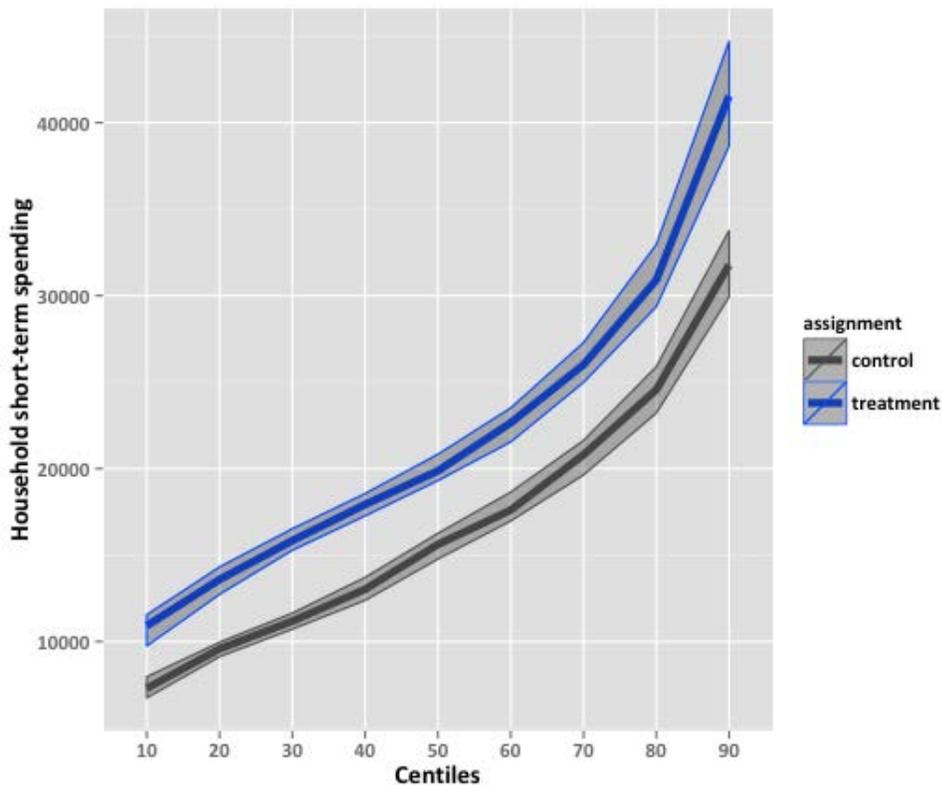
#### d. What is the distribution of poverty impacts?

We have talked about the average and the median impact, but in fact there is a great deal of variation within the treatment group. For instance, while the median increase in income (i.e. the treated person at the 50<sup>th</sup> percentile) is UGX 7,800 (USD 3.13), the person at the 20<sup>th</sup> percentile saw an increase of just UGX 1,700 (USD 0.68) and the person at the 80<sup>th</sup> percentile saw an increase of UGX 20,500 (USD 8.23, Figure 11).



**Figure 11. Net income in the past 4 weeks QTE**

Income is quite volatile from month to month, and so what we want to look at is a measure of more “permanent” income, like consumption. At the median consumption increased UGX 4,601 (USD 1.85), at the 20<sup>th</sup> percentile it increase UGX 4,225 (USD 1.70), and at the 80<sup>th</sup> percentile it increased UGX 6,806 (USD 2.73, see Figure 12).



**Figure 12. Household consumption QTE**

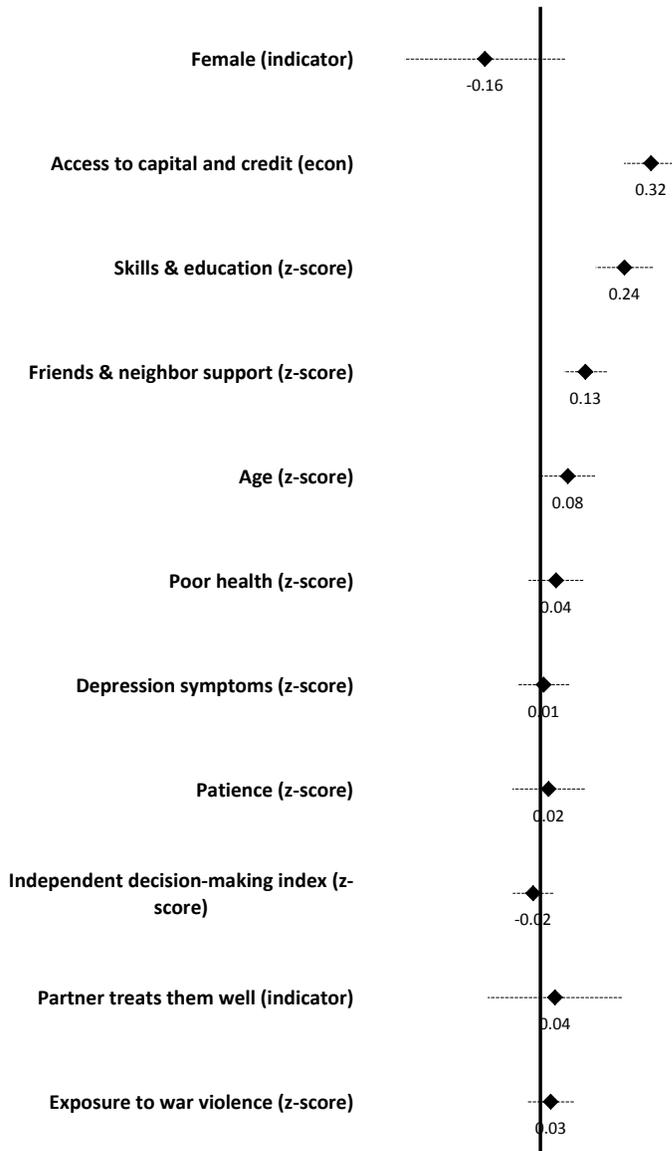
The good news is that the program generally had a uniformly positive impact on income and consumption—virtually everyone was well served by the program. Some had enormous potential, good fortune, and succeeded tremendously. But the return on investment was very low for many people—so low that we may get into the area of such low returns that the program does not serve them merely as well as some alternative, such as simple cash handouts, or a more efficient program, or a program with alternative design (see Section 4).

### e. Who succeeds?

AVSI targeted poor, excluded and underprivileged young women and men. Within this group, however, there is fairly wide variation in initial wealth, skills, social support, and other characteristics. Who among the target beneficiaries succeed in the absence of treatment? Who responds more successfully to the program? Who fails? A look at these patterns not only helps explain some of the wide variations in economic success, but also helps targeting and program design in future.

First, we look at what characteristics are associated with more success in the absence of the treatment. This is analogous to looking within the control group at what characteristics are correlated with later earnings and wealth. We look at several potential determinants of success or failure, one by one, in Figure 13. We create a composite measure of “economic success” from endline earnings, durable assets, and savings than has zero mean and unit standard deviation (a z-score). Each baseline characteristic is likewise turned into a z-score or (in a few instances) is a binary indicator. A negative value implies the characteristic is associated with lower economic performance. The specific number indicates the change (in standard deviations) in economic success from a binary change or unit standard deviation change in

the characteristics. (The specific results come from a regression of success on a treatment indicator, the baseline value of the characteristic, and an interaction between the two).



**Figure 13: Ignoring treatment, the correlation between baseline characteristics and endline economic success**

In general, we see that women in the sample report lower levels of economic success at endline than males in the sample, though the estimate is not statistically significant at conventional levels. The largest and most significant correlate of success is initially high access to credit and capital. Wealth begets wealth. Higher levels of education, stronger support networks and being older also contributed to success. Perhaps surprisingly, having a good partner and a higher level of economic decision-making empowerment showed little effect. Similarly, levels of physical health, exposure to war violence and

depression did not have a significant positive or negative effect on success. These sources of vulnerability do not appear to be associated with success variation, at last in this already vulnerable group.

Second, we look at who responds to treatment with more economic success in Figure 14. Rather than looking at how these same factors influence average levels of success, we look at how they influence the size of the program impact. (Statistically, this is the coefficient on the interaction between the characteristic and treatment). Again, we see that females have lower success, except that here we see that, in addition to having lower average levels of success, their response to the treatment is also more muted than males.

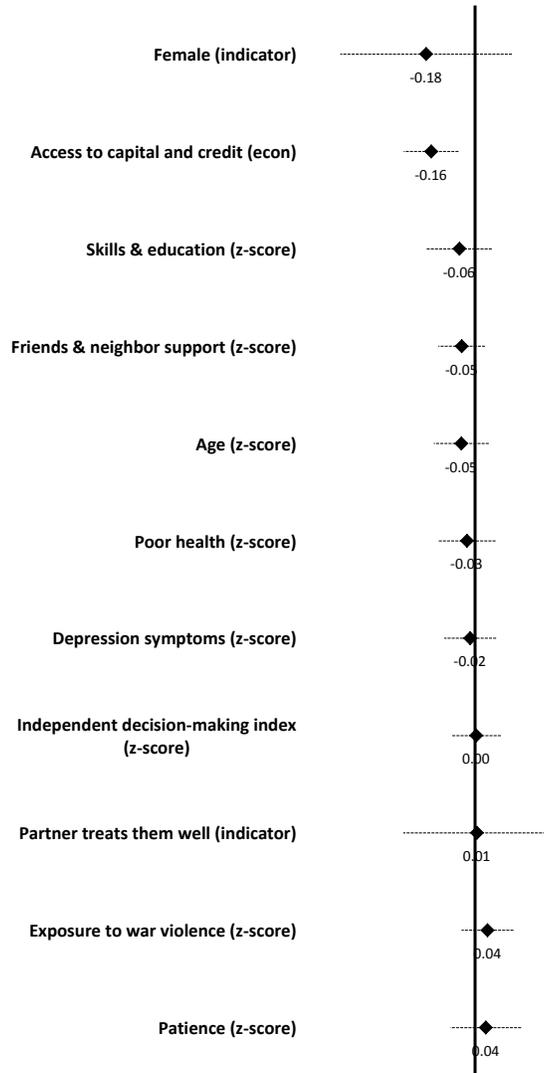


Figure 14: Impact on ATE of a unit change in the characteristic

We also see that those with higher levels of access to credit at baseline see fewer gains from treatment. This is consistent with the result above, where wealth begets wealth. The more capital rich people would have advanced anyways—the intervention is less influential in their success. Rather, it is those who are the most credit and capital constrained who benefit the most from the intervention. This is consistent with economic theories of poverty.

These same theories, however, predict that those with the highest potential (higher levels of skills, ability, patience and good health) and most constraints (access to capital and credit, in this case) would see the greatest benefits from the intervention. We do not see a large positive effect of skills/education, patience or good health on response to treatment (unlike the case of capital constraints) suggesting that these may not be strong measures of ability and potential.

We see little effect of partner relations on ultimate success. If we look at income alone (rather than the aggregate measure of income, savings and assets) we see a considerable positive relationship between better partner treatment and income. This relationship, as well as qualitative data suggesting the importance of partner success to well-being, motivated one of the Phase 2 cross-cutting interventions (“W+”) discussed below.

## f. Health and social impacts

**Table 3: Indicators of health and social impact in the control and treatment (WINGS) groups**

<b>Indicator</b>	<b>Possible Range</b>	<b>Desirable scores</b>	<b>Control</b>	<b>Treatment</b>
<b>Health</b>				
Days sick last 30 days	0-30	Low	3.2	3.7
Went to bed hungry last 7 days	0-1	Low	0.1	0.1
Perception of health status	1-10	High	5.5	5.7
Betancourt index of depression and anxiety	0-48	Low	9.0	9.1
<b>Empowerment</b>				
Economic decision making index	0-18	High	10.7	10.8
Gender attitudes index	0-15	High	5.6	5.5
Interpersonal violence index	0-21	Low	19.4	19.2
Independence index	0-15	High	5.2	5.3
Household support index	0-9	High	7.2	7.1
<b>Social Capital</b>				
<i>Groups and Networks</i>				
Group membership	0-Any	High	1.7	2.4
Is a community leader	0-1	High	0.2	0.2
<i>Trust</i>				
Self-reported trustworthiness	1-10	High	5.8	6.2
<i>Social Cohesion/Inclusion</i>				
Community hostility index	0-12	Low	0.7	1.0
Social support index	0-21	High	7.2	7.9
<i>Collective Action</i>				
Mobilized the community for meetings	0-1	High	0.2	0.2

We are not merely interested in material well-being. Lack of stable employment and poverty can be disempowering, depressing, and alienating. The poor do care about their next meal, or their material goods, but they also value greater happiness, lower anxiety, closer social relations, and respect and recognition in their community. This is especially the case when the target beneficiaries are the most disempowered, depressed, and alienated in their community. It may be especially true among women who typically have less control over their lives and decisions than men.

In general, however, we see little health and social effects, positive or negative, of the intervention on beneficiaries, despite the evident poverty impact.

Table 3 lists major health and social indicators and the average levels of each measure or index in the treatment and control groups.

**Health**

Starting with health, we look at the number of days beneficiaries reported being sick in the last month, the number of days they reported going to bed hungry in the past week, and a perception of their health status relative to others in the community (see Figure 15).

The only statistically significant finding is that the average WINGS beneficiary reported being sick 20 percent more days in the past month than did the average member of the control group. The percentage of people who went to bed hungry in the past week was measured with error, so we cannot be confident that the change is different from zero. The same can be said for perceptions of health status and an index of symptoms of depression and anxiety.

Since the impact on the number of days sick is reported as percentage change, it is important to keep in mind the absolute difference. In this case, a 20 percent increase is equal to about a half a day more per month on average since the average member of the control group reported being sick 3.2 days in the past month.

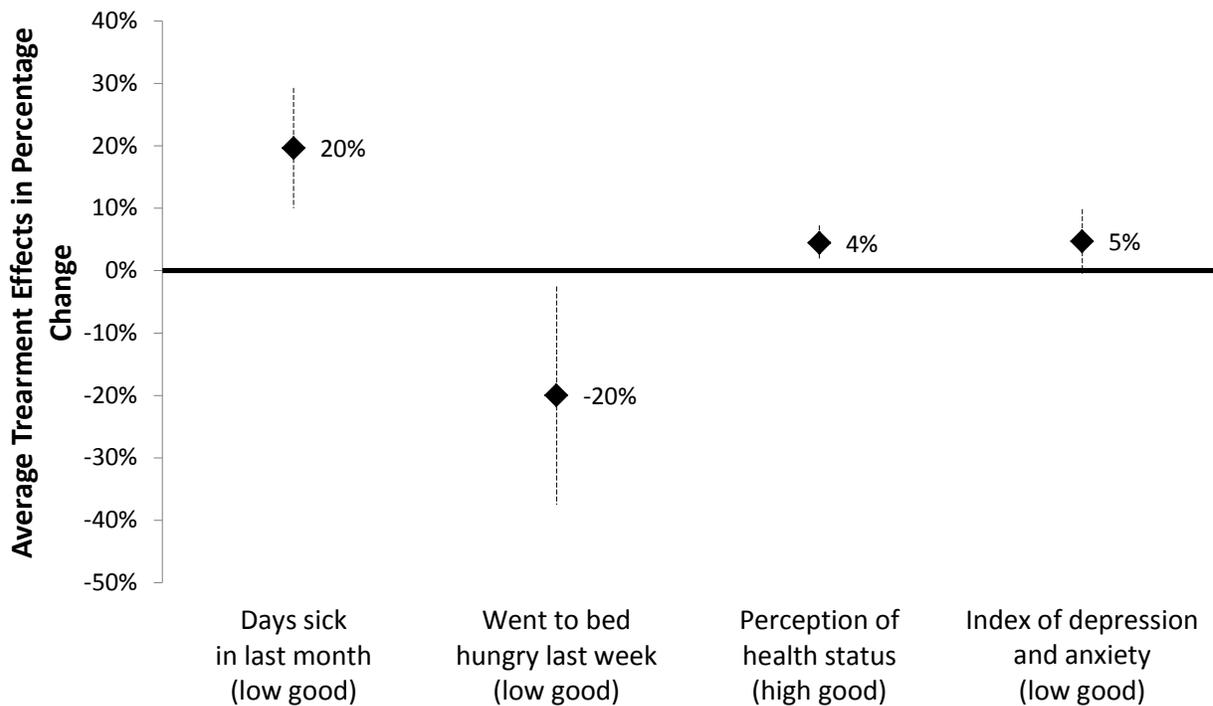
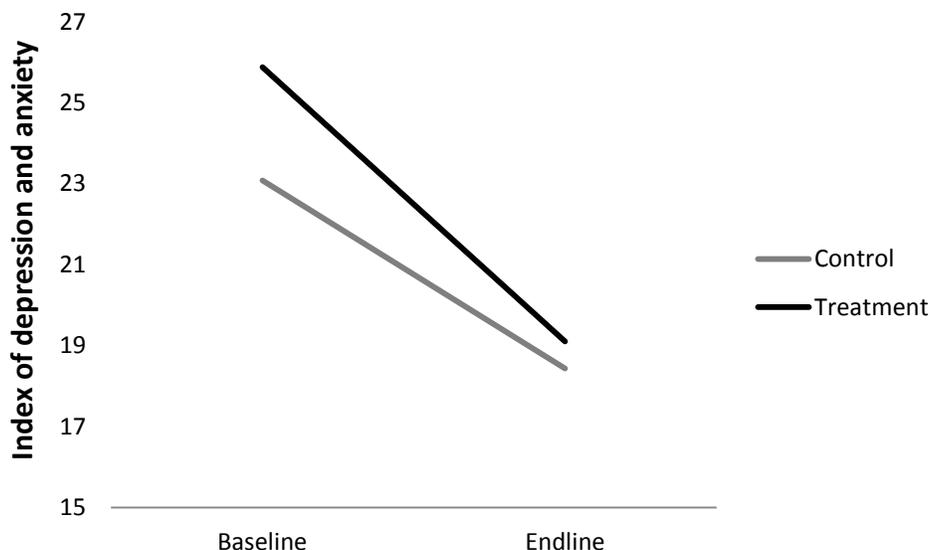


Figure 15: Impacts on health.

To assess psychological health, we administered a set of questions about symptoms of anxiety and depression (such as feeling sad, having worries, and experiencing nightmares) adapted from other work in northern Uganda that derived a 'local' understanding of these constructs through qualitative work.

As shown in Figure 16, we see no significant impact of treatment on psychological distress, in spite of the economic success enjoyed by beneficiaries. Both groups report a reduction in psychological distress over time, which is not surprising because the overall quality of life in northern Uganda likely improved with every year spent living away from the displacement camps.<sup>3</sup>



**Figure 16. Impact on self-reported symptoms of anxiety and depression.**

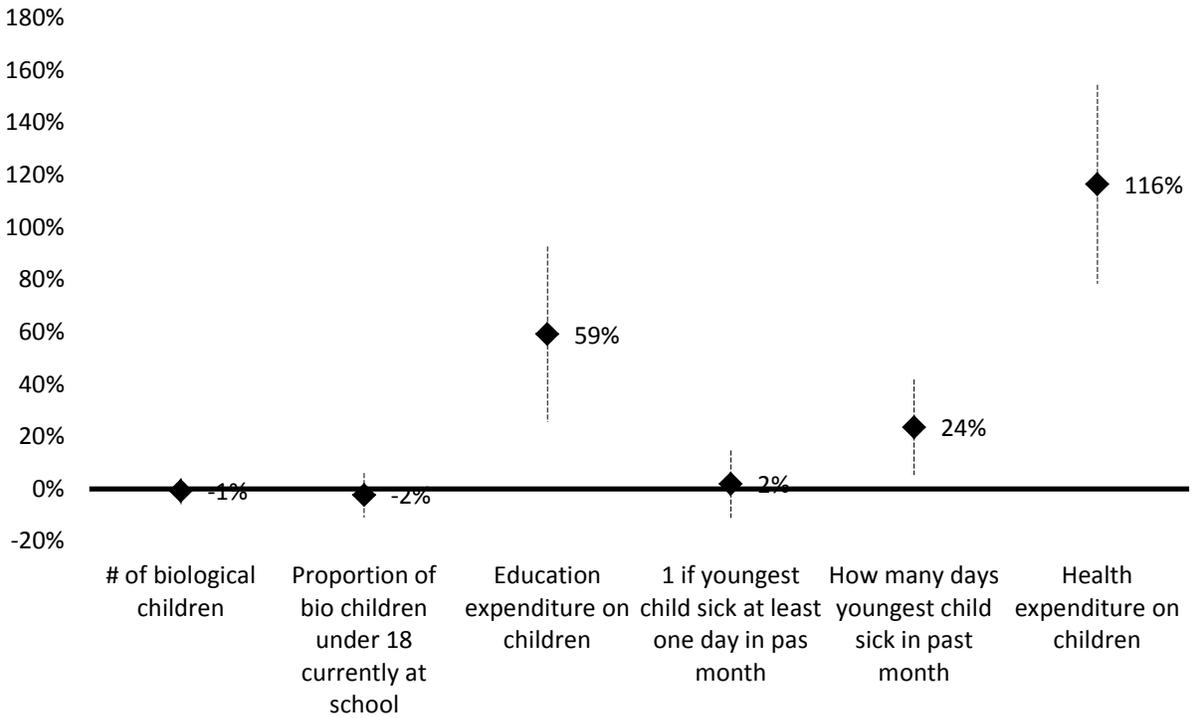
Note. We measured psychological distress by creating an additive index of 34 self-reported symptoms of anxiety and depression. Respondents could report that they experienced symptoms often, sometimes, rarely, or never. A higher score on this index represents greater psychological distress. There are no norms for this index, so it is not possible to state that scores above a specific value are clinically significant. All we can conclude is that higher scores reflect greater distress.

### **Children**

Looking at treatment effects on children presents a bit of a puzzle. Recipients of the WINGS program show higher expenditure on their children's education and particularly their health, but we see no corresponding increase in the percentage of children attending school or their children's health. Incidence of children's sickness seems to remain constant, but children of WINGS recipients seem to be sick for more days (below, Figure 17). The reason for this result is not clear.

---

<sup>3</sup> This finding is a good reminder about the value of having a control group that did not receive the intervention. If we had only observed the treatment group before and after the intervention, it would have appeared as if the program led to a decrease in distress. What we see here (with the help of our control group) is that distress declined over time for everyone, regardless of whether they received the program.

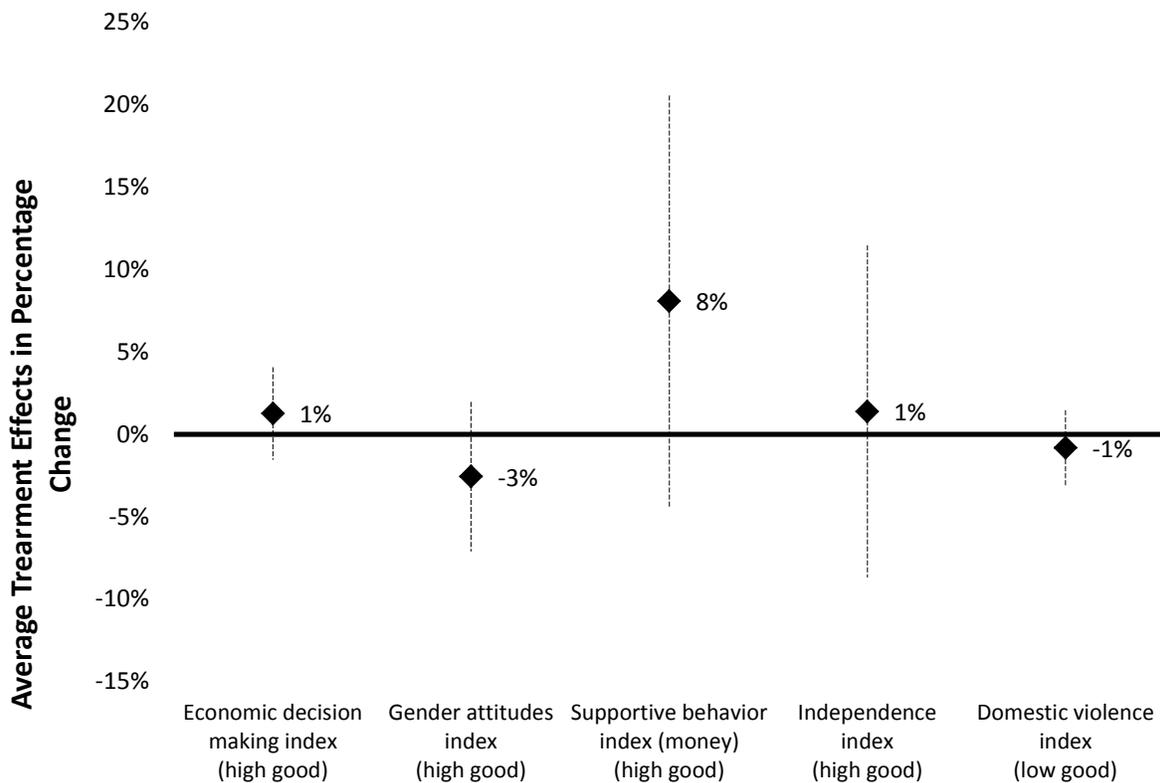


**Figure 17: Impacts on recipients' children**

### ***Empowerment***

Next we look at several measures of empowerment (Figure 18), including the person's influence in household economic decision-making, household relations, attitudes toward female empowerment, and intimate partner violence, and we see almost no difference between treatment and control group members. This average effect of zero<sup>4</sup> may conceal important heterogeneity—some women who do better and some who do worse, and our ongoing analysis will explore some of the main possible sources of heterogeneity.

<sup>4</sup> This average effect of zero is very nicely illustrated by dash line for each indicator crossing the zero axis, suggesting that the effect could possibly be zero.



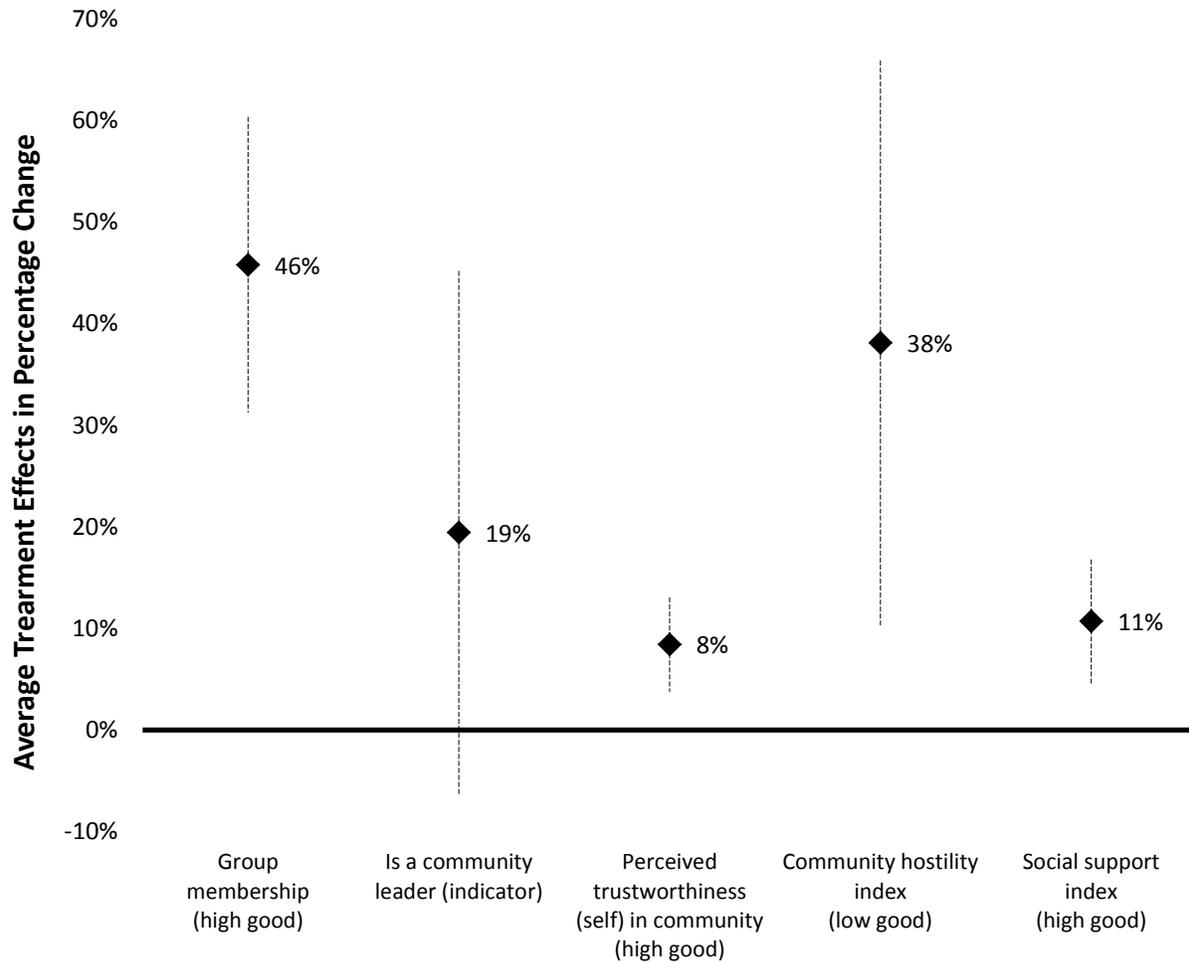
**Figure 18. Impact on empowerment.**

Notes: Diamond represents the Average Treatment Effects in Percentage Change. Average Treatment Effect is equal to the difference in mean between the Treatment Group and the Control Group. The Dash line spans between Lower and Upper bound of the Confidence Interval.

The finding of no differences between the treatment and control group members on intimate partner violence is significant because of the risk of increased intimate partner violence as women have more money. It will be important to continue to analyze the data for heterogeneous impacts in intimate partner violence, but the absence of any main effect is encouraging. Other studies have reported increases in intimate partner violence, but in loan-based schemes, and not in randomized impact evaluations. The fact that the WINGS program was grant-based, thus without the pressures of repayment and high interest rates, might have reduced the risk for intimate partner violence.

### ***Social Capital***

Finally we look at several measures of beneficiaries' social capital. Social capital can take on a variety of meanings, but we use it here to mean the value found in one's social network. Increasing the social capital of beneficiaries is both a desired outcome of WINGS and a potential predictor of economic success. Here we consider whether WINGS impacted beneficiaries' social capital in terms of group participation and leadership, trustworthiness, collective action, and social cohesion and inclusion.



**Figure 19: Impacts on social capital**

Notes: Diamond represents the Average Treatment Effects in Percentage Change. Average Treatment Effect is equal to the difference in mean between the Treatment Group and the Control Group. The dashed line spans the Lower and Upper bound of the Confidence Interval.

Membership and participation in groups helps people to obtain information and other resources, find social support and companionship, and influence community decision-making. WINGS beneficiaries are involved in almost 50 percent more groups on average than members of the control group. This is a large difference in relative terms, but only translates to 0.72 more groups on average. WINGS beneficiaries are also more likely than control group members to be a community leader, but this difference is not statistically significant.

Trust is another important dimension of social capital; trust can facilitate transactions and relationship building. On average, WINGS beneficiaries rated themselves 8 percent higher on a scale of trustworthiness than did the average person in the control group. This difference is small but statistically significant and suggests that participation in the program changed how beneficiaries see themselves relative to others in the community.

Social cohesion and inclusion are also key components of social capital. People who relate well to others and are accepted by others face fewer barriers to conducting business and accessing resources. We measured two aspects of social cohesion and inclusion: community hostility toward the beneficiary and

social support. Examples of community hostility include having serious conflicts with other community members, having community members say things to insult or hurt you or your children, or experiencing unprovoked aggression from other community members. We find that WINGS beneficiaries, on average, report 38.1 percent more hostility than people in the control group. This difference is statistically significant, but it is important to note that this is a very small absolute difference. The community hostility index ranges from a possible score of 0, meaning no hostility experienced, to 12, an indication of high hostility. As shown in Table 3, the mean score among the control group is 0.70, a very low hostility score. Therefore, an increase of 38.1 percent among the treatment group results in a mean score that is still less than 1 on this index.

We also find that the average WINGS beneficiary also reports having 10.7 percent more social support compared to the average member of the control group, a statistically significant difference. Social support is indicated by turning to friends or neighbors for advice and receiving practical or material help from these people.

Finally, collective action and cooperation are also important elements of social capital. Usually we think of these constructs as group-level phenomena that characterize communities that work together to solve problems. Both require individual input, however, so we can examine to what extent individuals contribute to the collective well-being of a community. In Phase 1 we find that a significantly higher percentage of WINGS beneficiaries mobilize the community for meetings compared to members of the control group. This suggests that the WINGS program had an activating effect on beneficiaries that made them more likely to contribute to the well-being of the community.

Overall we can say that treatment group members report both an increase in positive community support and relationships, but also an increase in negative community attitudes and relations—both small effects in absolute terms. One hypothesis is that kin and community members whom the beneficiary can now help support are brought closer, while others may be resentful of the assistance, given the great need in these communities.

## 5. Are these impacts “high”? A cost-benefit analysis

### a. From “impact” to relative return”

Overall, the WINGS program increased earnings and allowed higher consumption—short and long term—for some of the poorest and most vulnerable people in northern Uganda. However, the simple magnitude of the economic impacts is not very informative from a policy perspective.

We are not solely interested in the benefit, but rather the benefit relative to costs. One way to do this is to estimate the rate of return on the NGO’s “investment”, which is the cost of delivering the program.

Most of all, we would like to see if the return is positive—that the program does not cost more to deliver than it produces in benefits to the poor. For instance, suppose that an intervention results in a stream of benefits to the client in future. In the case of WINGS, for example, suppose that the intervention increased earnings by UGX 16,200 not just in the month we measured, but every month for the next 5, 15 or 50 years. What is that worth? Is the present value of that stream of earnings greater than the sum spent by the program?

More than this, we would like to see that a program is one of the best possible investments in the poor—that it provides a higher return than the alternatives. One way to do this is to compare the

program and its returns with those from other interventions. That is, we'd like to see that the stream of benefits is at least as great as alternative interventions that cost similarly.

Evidence on returns from different interventions is slim, but a growing body of evidence from programs targeting the ultra-poor suggests that positive returns are possible. Recent research on returns on small grants to the poor suggest annual rates of return of 40 to 100 percent.

Of course, few of these studies include within the cost of the grant the cost of targeting and disbursing. If accounted for, these would undoubtedly lower rates of return downwards. If the cost of disbursement and targeting were 40 to 100 percent, this administration cost could conceivably eat away most of the excess returns. At some point, one might argue, it would simply be better to give the cash rather than the program to the poor.

So far we have focused mainly on the material benefits of the intervention, especially earnings. What if an intervention provides some non-pecuniary benefit, such as reductions in depression or improvement in community support? These benefits are (literally) priceless, and it is difficult to calculate a return. Estimates could be made, but in this instance they do not seem necessary. The psychosocial impacts of the AVSI intervention are, it appears, quite modest. Thus it seems reasonable to evaluate the returns from this intervention based on the impact on earnings alone.

**Table 4: Rate of return calculations**

Treatment effect	Impact on monthly cash earnings	Horizon (years)	Discount rate (of future earnings)	Net present value of earnings	Rate of return on investment (by cost of intervention component)					
					Grant alone	+ Targeting & Disbursement costs	+ Business training	+ Group dynamics training	+ Follow-up	+ Overhead (i.e. Total)
					300,000	550,944	798,514	961,705	1,658,537	1,720,063
Median	9,700	50	50%	232,800	-22%	-58%	-71%	-76%	-86%	-86%
Average	16,200	50	50%	388,800	30%	-29%	-51%	-60%	-77%	-77%
Median	9,700	50	15%	775,550	159%	41%	-3%	-19%	-53%	-55%
Average	16,200	50	15%	1,295,249	332%	135%	62%	35%	-22%	-25%
Median	9,700	50	3%	3,012,633	904%	447%	277%	213%	82%	75%
Average	16,200	50	3%	5,031,408	1577%	813%	530%	423%	203%	193%
Median	9,700	15	50%	232,650	-22%	-58%	-71%	-76%	-86%	-86%
Average	16,200	15	50%	388,550	30%	-29%	-51%	-60%	-77%	-77%
Median	9,700	15	15%	693,062	131%	26%	-13%	-28%	-58%	-60%
Average	16,200	15	15%	1,157,484	286%	110%	45%	20%	-30%	-33%
Median	9,700	15	3%	1,404,613	368%	155%	76%	46%	-15%	-18%
Average	16,200	15	3%	2,345,849	682%	326%	194%	144%	41%	36%
Median	9,700	5	50%	212,697	-29%	-61%	-73%	-78%	-87%	-88%
Average	16,200	5	50%	355,226	18%	-36%	-56%	-63%	-79%	-79%
Median	9,700	5	15%	407,736	36%	-26%	-49%	-58%	-75%	-76%
Average	16,200	5	15%	680,960	127%	24%	-15%	-29%	-59%	-60%
Median	9,700	5	3%	539,828	80%	-2%	-32%	-44%	-67%	-69%
Average	16,200	5	3%	901,568	201%	64%	13%	-6%	-46%	-48%

**B. Follow-up component**

					Estimated per person cost of intervention	
					2 FU	5 FU
	Impact on monthly cash earnings	Horizon (years)	Discount rate (of future earnings)	Net present value of earnings	278,733	696,832
Median	1,700	50	50%	40,800	-85%	-94%
Average	5,000	50	50%	120,000	-57%	-83%
Median	1,700	50	15%	135,921	-51%	-80%
Average	5,000	50	15%	399,768	43%	-43%
Median	1,700	50	3%	527,987	89%	-24%
Average	5,000	50	3%	1,552,904	457%	123%
Median	1,700	15	50%	40,774	-85%	-94%
Average	5,000	15	50%	119,923	-57%	-83%
Median	1,700	15	15%	121,464	-56%	-83%
Average	5,000	15	15%	357,248	28%	-49%
Median	1,700	15	3%	246,169	-12%	-65%
Average	5,000	15	3%	724,027	160%	4%
Median	1,700	5	50%	37,277	-87%	-95%
Average	5,000	5	50%	109,638	-61%	-84%
Median	1,700	5	15%	71,459	-74%	-90%
Average	5,000	5	15%	210,173	-25%	-70%
Median	1,700	5	3%	94,609	-66%	-86%
Average	5,000	5	3%	278,262	0%	-60%

## b. Estimating the returns to the WINGS program

What kinds of returns do we see from the WINGS program? Table 4 above provides one example of a returns calculation.

The top panel, A, describes the return from the full intervention (we return to panel B below, when evaluating the follow-up component).

To estimate the stream of earnings, we can look at the average treatment effect (of roughly 16,200 UGX a month) or the median treatment effect (of roughly 9,700 UGX a month). The long term return will depend on two considerations. First is the time horizon of returns. As a thought experiment, we look at 5, 15 and 50 year horizons.

The second consideration is the “discount rate”, or the value we place on returns today versus returns tomorrow. This is partly a function of personal preference. Most people prefer money today to money tomorrow. It is also an economic consideration. That money has an “opportunity cost”—its value if it had been put into a risk-free investment and paid out a regular return. As a thought experiment, we look at three alternative discount rates: a “low” rate of 3%, one more medium-sized, of 15% per year (the same, roughly, as Uganda’s lowest commercial lending interest rate), and a high rate of 50%, which heavily discounts returns in the future (but is consistent with interest rates charged by rural microfinance institutions in different countries, and lower than the rates of time preference we measure in behavioral games in this sample).

Note that a high discount rate is akin to having a fairly short horizon—at the higher discount rates, it matters little whether the horizon is 5 or 50 years.

With these discount factors, a stream of 16,200 UGX every months for 15 years is equivalent to UGX 388,550 at a 50% rate, 1.15 million at a 15% rate and UGX 2.54 million at 3%. The more you value money today versus money tomorrow, the lower is the present value of that stream of future earnings. You can see a similar pattern for 50 and 5 year horizons.

We then compare this present value to the cost of the program. In total, using records provided by AVSI, we estimate that the total cost of the intervention, per person, was approximately UGX 1.720 million (last column). To illustrate the cumulative cost of the components of the program, we start with the amount of the grant (UGX 300,000) and gradually add our estimates of the per person cost of each program component until we reach the total of 1.720 million.

To calculate the rate of return, we take the return (the difference between the present value and the cost) and examine it relative to the total cost of the intervention. At a 15% discount rate, a continuous increase in monthly earnings of 16,200 (the average treatment effect) is worth approximately UGX 1.15 million today. That is more than UGX 500,000 lower, or 33% lower, than the per person cost of the total program. So the rate of return is -33%.

With a lower discount rate of 3%, however, the same average treatment effect yields a significant positive return—of 36%.

One note: Both of these results come from average treatment effects. The (lower) median treatment effect never reaches the breakeven point even with the lower discount rate. This points to the importance of having a consistently high return in future. If the return drops over time, the positive returns estimated for the average treatment effect in the 5% scenario may be exaggerated. On the other hand, if there is growth over time, the returns are undoubtedly greater.

Another note: We see that the less expensive is the program, the higher is the return. Each component contributes to the return. Components that cost more than the benefit they add reduce the average return. Components that provide the highest benefit for their cost increase the average return. Inexpensive, high-return components are possibly the best ones to focus on. This is a question we will tackle below in looking at the contribution of follow-up, experimentally.

### c. The returns to follow-up

In general, the intervention was not designed to calculate the cost-effectiveness of each component. In Table 3, the fact that we assume the benefit stays the same without any of the added components is unlikely to be true. Generally it is not possible to say which of the above actually contributed to the observed increase in income. The idea that the main effect is given by the cash transfer comes from results of other studies, but few have looked at the returns to added components.

The randomization of follow-up, however, does allow us to test the cost effectiveness of that intervention. Table 3, Panel B calculates returns to the follow-up component. We turn to this below, in the discussion of follow-up. It is worth noting that for low discount rates, the average treatment effect from the follow-up component yields a positive and sometimes quite high rate of return. This suggests that the assumption of constant benefits regardless of the program components is not an accurate one, and we ought to concentrate attention on the right-most columns of Table 3.

### d. Conclusions

This kind of cost-benefit analysis is inherently challenging and it is difficult to draw strong conclusions. A few lessons are worth emphasizing, however:

- Our higher estimate of returns—the average treatment effect evaluated using a 3% discount rate for a sufficiently long time horizon—is consistent with positive long term rates of return, suggesting that the intervention does better than the crude (but important) alternative—simply giving to the client cash equivalent to the cost of the program. This average treatment effect seems robust enough that it is reasonable to take this higher estimate as a guide to impact.
- The more that a client values future over present consumption (i.e. the more patient they are, and the lower the discount rate), the more value the WINGS intervention provides relative to the alternatives. Analysis of time preference measures in the behavioral games, as it happens, suggest very high rates of impatience among the population, suggesting negative overall rates of return.
- Likewise, if the donor or implementer of the program places a high value on future earnings, and is farsighted and patient, while the client is not, then the donor may still feel this is a worthwhile investment.
- This merely implies that the intervention had a positive return. This is not necessarily the same thing as the best possible return. In particular, it is undoubtedly true that some components provide more impact at less cost than others, and including the lower-impact-higher-cost components in the program reduces the potential return. Similarly, there may be other interventions available that provide more “bang for the buck” in terms of higher returns given limited resources.
- A glance at the incremental cost of some services and components raises some suspicions. The cost of administering and targeting the cash grant is roughly the same as the amount of the grant itself. The cost of follow up is as much as the cost of the grant and the

targeting/disbursement costs combined. Whether components such as these provide equal relative rates of return is an important question for investigation, which we start to examine below.

## 6. What are the effects of the WINGS programs on other village members, especially existing traders and entrepreneurs?

In addition to the comparison of WINGS Phase 1 clients to future Phase 2 beneficiaries, we might ask what the effect of this intervention is on the local village economy and (most of all) the men and women already in the businesses that the WINGS clients open.

Many of these villages are quite small, and the WINGS client households often represented 15 to 25% of the households. The cash transfer, therefore, was a sizable and noticeable shock to the village economy. Economic theory predicts both positive and negative effects, depending on one's starting position.

The injection of cash will raise spending by WINGS clients, providing a source of business and demand for existing traders and producers. This should increase their profits. At the same time, this may lead prices in the village to increase if the demand shock is large enough, and the trade in these items is sufficiently restricted. These rising prices reduce the purchasing power (and hence well-being) of any household that is a net consumer of the goods (i.e. people who don't produce or trade in that good).

At the same time, WINGS clients start to trade and produce themselves. This acts to lower prices in the community, especially to the extent they begin to bring in tradable goods that were previously expensive and difficult to obtain. These falling prices benefit all households that are net consumers of the good. Net producers and other traders, meanwhile, can see their profits fall both because of lower prices and also because they have more competition from the WINGS clients who have started similar enterprises.

Theoretically, therefore, the effect could go either way. What happens on balance in the WINGS village? We are in the midst of a more formal theoretical and empirical analysis, but preliminary results suggest that WINGS clients and agricultural households in the village both benefit on net, while households that traded in or produce goods and services suffer from falling prices and competition.

To assess this, the research team visited all the treatment and control villages after the completion of Phase 1 and surveyed about 2,500 randomly chosen households who did not participate in the WINGS program. The survey collected detailed information on income, entrepreneurial activity, labor supply, savings, as well as consumption and expenditure of non-participant households. Comparing the responses of non-participants in Phase 1 versus Phase 2 villages sheds light on the community-wide effects of the WINGS program.

WINGS clients primarily became traders of goods outside the community and producers of other tradable goods. Preliminary results suggest that WINGS benefits net consumers of these products. In the realm of the survey, detailed data on community prices was collected, and a price index created. In Phase 1 communities this price index is two percent lower than in Phase 2 communities. This suggests that WINGS increases the supply of scarce traded goods and stimulates competition between micro-enterprises, driving down consumer prices. Lower prices reduce the costs of the consumption basket, decreasing consumption expenditure by 11 percent. Most affected by the price decline are groceries: monthly grocery expenditure decreases by about nine percent. Non-participants put the resulting

surplus into savings: grain holdings, for example, increase by four percent among households citing agriculture as main source of livelihood.

Preliminary results further suggest that WINGS crowds out profits of existing micro-enterprises. In theory, existing micro-enterprises are affected through two mechanisms. On the one hand, higher competition may crowd-out sales. On the other hand, because WINGS participants spend part of their income gains on consumer goods, sales of existing micro-enterprises may increase. In practice, we find that the former effect slightly dominates the latter. Profits of existing micro-enterprises fall by on average 2,500USH per month (roughly 12 percent). Labor supply of non-participants to micro-enterprise activities, however, is not affected.

Furthermore, WINGS tends to affect the agricultural labor market. WINGS participants spend less time working on other households' plots. Lower agricultural labor supply in turn tends to slightly drive up agricultural wages. While WINGS participants spend less time working on other households' plots, non-participant households do spend half a day per month more. This is accompanied by an increase in labor income of 1,200 USH per month. The labor supply effect varies across non-participant households. While households not having a micro-enterprise show an increase of half a day per month, households operating a micro-enterprise spent only a quarter of a day/month more working on other peoples' plots.

Overall, the WINGS program leads to a rise in the aggregate well-being of the community, but wealth and well-being are redistributed away from traders and net producers of traded goods towards the WINGS clients and agricultural households (net consumers of traded goods). This redistribution, and the adverse effects of an aid program on other community members, is not something typically taken into account in programs of this nature and ought to be a consideration in future.

## 7. Do supervision and mentoring improve performance? The effectiveness (and cost-effectiveness) of follow-up

### a. The potential gains from follow-up: The “accountability” and “advice” effects

Follow-up is a central part of AVSI's intervention package. At the same time, it is an expensive service to provide—it takes a significant amount of staff time, transport, and administrative and logistical support. Does it work and why? Is it cost effective? What does this tell us about microenterprise development for the poor?

AVSI sees two important advantages of follow-up: one business-related and one interpersonal. Many years of experience have demonstrated to AVSI that on-going support for young, new entrepreneurs is essential to help them succeed and address the challenges that arise with every nascent business endeavor. In AVSI's standard intervention, clients receive at least 3 follow up visits, and often more.

We can imagine two major theoretical rationales for, and effects of, follow-up. One we call the “**accountability effect**”: expecting a program officer to check up on you leads to more focus and disciplined behavior, such as increased investment, emphasis on starting up business operations, effort, and ultimately aggregate profits of the enterprise. These accountability effects might be mainly business-oriented, but conceivably they could lead to more independence and empowerment for the woman, or “good” behavior by household members (e.g. support for the enterprise, or reduced intimate partner violence).

A second rationale we call the “**advice effect**”: having a trained program officer visit and give you substantive advice may affect your business and personal success. For instance, AVSI staff maintains close supervision of business activities for the first few business cycles, providing advice on meeting market challenges and implementing sound business practices. They seek to help young entrepreneurs to meet with experienced businessmen and women in their area, share difficulties and seek practical advice and mentoring. AVSI staff have been trained in business skills and most importantly have years of experience within the environment of small enterprises in the program region, with accumulated links to successful businesses and an array of formal and informal financial services. AVSI staff have also been trained in psychosocial skills and basic counseling, and one objective of follow-up was to provide basic psychosocial support to this highly poor and vulnerable population. Staff could work as a listener, advice-giver, or active mediator in group, community and household disputes.

## b. Distinguishing accountability from advice

How to discern these different theories and effects? Distinguishing business versus interpersonal effects is the most straightforward: we assess each in turn with a variety of different measures. To distinguish the accountability effect from the advice effect, and the returns to increased advice, is more complicated.

First, we worked with AVSI in Phase 2 of the intervention to vary the amount of follow-up experimentally, at the level of the individual. Phase 2 clients were placed in a lottery. Within each village, a third were told they would receive no further follow-up, and that AVSI would not visit them again. A third were told that AVSI would visit them twice more, mainly to check on progress on stated goals and the business plan, and provide advice. The final third were told that AVSI would visit them roughly five times in the coming months, both to check on progress and provide more extensive advice. All were told that the assignment was random, for the purposes of evaluation, and not linked to the quality of their proposal.

To distinguish the accountability from the advice effect, we surveyed clients twice after the intervention: the first time roughly a month after they received the grant, but before any follow-up visits occurred; while the second survey occurred roughly a year after the grant, after all follow-ups were long completed. We call these the “short term” and “long term” Phase 2 endline surveys. The important distinction is that, at the time of the short-term survey, no one had received follow-ups but they had been told whether or not to expect one.

We should see the effects of the accountability treatment most clearly in the short term endline survey: those who expect follow-up visits and being held accountable for their decisions may be more inclined to invest rather than consume the grant, work harder, or have made more progress in business startup and profitability.

We should be able to see the advice effect most clearly in the long run endline survey, by comparing the effects of receiving 5 versus 2 follow-up visits on average. The comparison of 2 follow-ups to no follow-up will indicate in large part the effects of accountability in the longer run, but will also incorporate some effects of advice. Thus it will help us distinguish the impact of follow-up, but it might not tell us the mechanism so clearly.

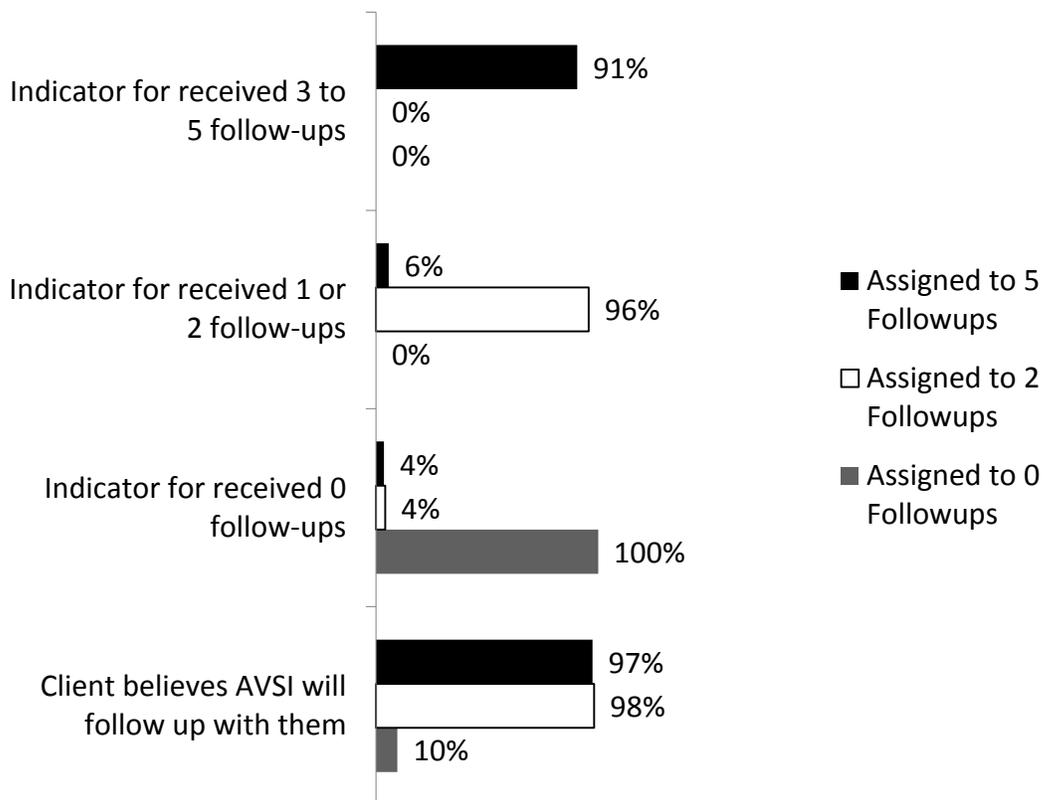
### c. Short-term impacts of follow-up

#### *Follow-up assignment and follow-through was largely successful*

To pick up any accountability effect, it's important that clients believe and remember their treatment assignment. That is, the clients assigned to no follow-ups must be told and remember and believe this. The clients assigned to any follow-up must remember and expect this as well. To a large extent this seems to be the case, as can be seen in Figure 20 below. Of those assigned to either 2 or 5 follow-ups, 97 to 98% expected a return visit from AVSI at the time we ran the short survey. Of those assigned to no follow-ups, just 10% expected (erroneously) a visit from AVSI for accountability and advice.

To pick up any advice effect, the follow-ups assigned must more or less match the actual follow-ups received. This too appears to be the case, as seen in Figure 20. Of those assigned to receive 5 follow ups, 91% received at least three to six follow-ups (with the vast majority of these receiving 5). None of the people assigned to 0 or 2 follow-ups received several follow-ups accidentally. Of those assigned to two follow-ups, 96% received 1-2 follow-ups (most receiving 2). None of those assigned to zero follow-ups appeared to have been followed up by AVSI according to our records (though it is possible that a small number of unrecorded follow-ups occurred).

All this suggests we have some of the best conditions possible to observe accountability and advice effects, if they exist.



**Figure 20: Expectations and results of follow-ups.**

*We see a moderate accountability effect on grant investment, though not on patterns of investment*

Figure 21 shows the proportion of the grant that clients spent on the following four categories within the first month of receiving the grant:

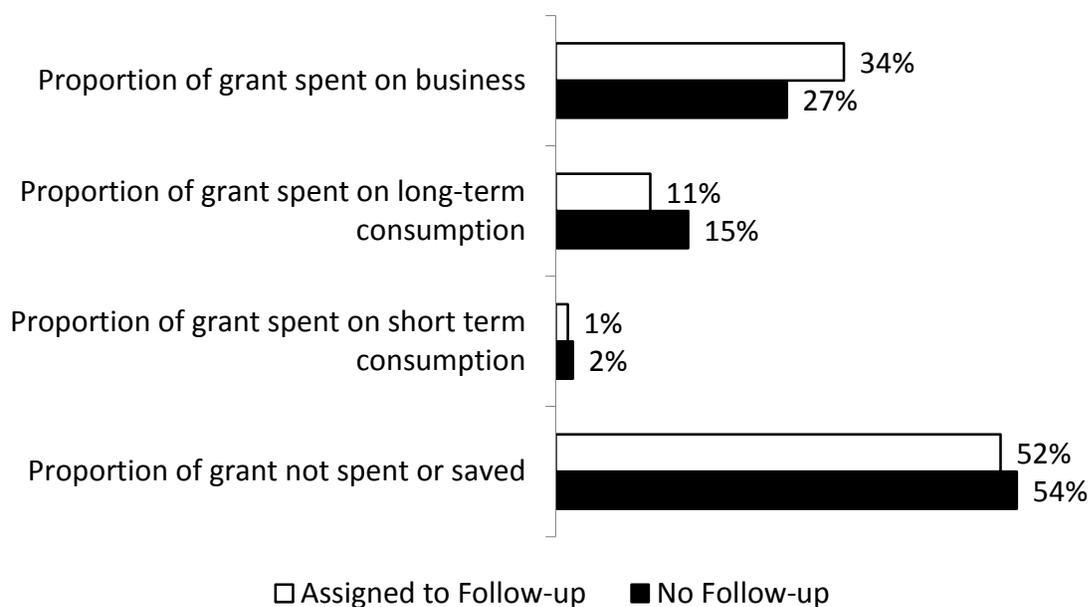
- a) business expenditures (e.g. raw materials, tools, inventory, etc.)
- b) “long-term” consumption (e.g. durable assets, home improvements, etc.)
- c) “short-term “ consumption (e.g. food, small household items, etc.)
- d) unspent or saved funds

We presented clients with a pile of stones and a sheet with pictures of twelve kinds of expenditures (which we classify later on into these four categories). Clients were asked to allocate the stones according to how they spent the grant, and the proportions are calculated from the relative balance of stones.

AVSI field staff strongly encouraged investment of the grant in the business. Within a month of receiving the grant, those expecting a follow-up visit had spent 34% of the grant on business-related expenditures, compared to 27% of those not expecting any follow-up or accountability (see Figure 19). This difference of about 7 percentage points is not large in absolute terms—about 26,000 UGX, or USD 10.44—but in relative terms is large. It represents a roughly on-quarter increase in business investment compared to the no follow-up group, and is statistically significant.

The increase in business investment comes mostly at the expense of consumer durables and other long-term consumption, which falls 4 percentage points among those expecting a follow up, from 15% to 11% of the grant. This difference too is statistically significant.

There are smaller decreases in short-term consumption and saved/unspent grant funds, which are not statistically significant. Expectations of accountability do not seem to increase the pace of investment or spending.



**Figure 21: Grant allocation 4 weeks after receipt**

While we see an increase in the level of business expenditures, we do not necessarily see a shift in the pattern of investment and expenses.

Figure 22 presents the results of a business expenditures survey, which asked clients to estimate total expenses in various categories in the previous 4 weeks. (These expenses might or might not come from the grant, and are not constrained to be less than the grant amount—they are merely the client’s recollection of aggregate spending in every category.)

We see very small, statistically insignificant differences in the amounts spent within each business category.

What is surprising is that we also see little difference in the aggregate amount reported spent on business items. Both treatment and control groups report about 36,000 UGX (USD 14.49) in spending. This is remarkable because it diverges from the response we received from the allocation of grant spending questions above.

The results differ in the level—if the clients had spent a quarter to a third of the grant on business, we would expect 90,000 to 120,000 UGX in spending (USD 36.15 – 48.20). The results also differ by treatment status—those expecting a follow-up visit said they spent a higher proportion of their grant but their level of spending is about the same at 36,000 UGX.

It is difficult to say which estimate is right—both in some respects probably represent reality. We can imagine systematic measurement error in either case. We suggest the divergent result should lead us to be cautious about inferring a solid accountability effect.

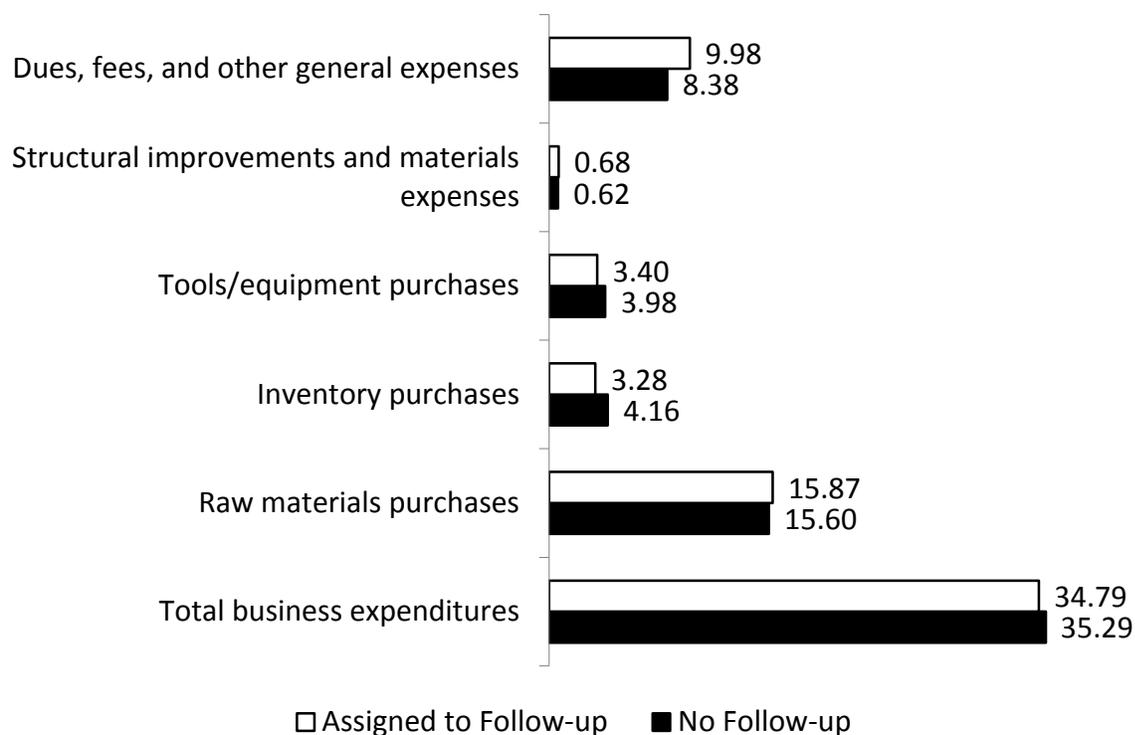
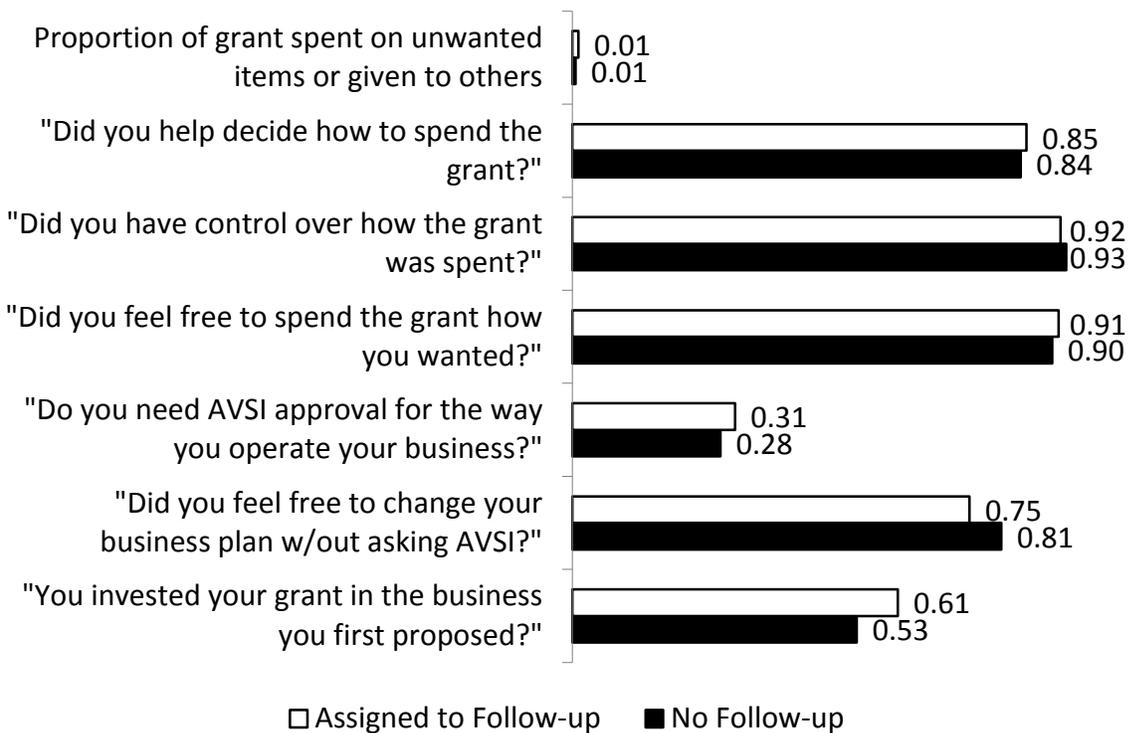


Figure 22: Estimated business expenses since grant, in 000s of UGX

*Those assigned to follow up (accountability) do not appear to report lower levels of control over the grant.*

The intervention seeks empowerment of the poor, but at the same time holds them accountable for investment. Do clients feel they have limited control over the grant as a consequence of being followed up? AVSI required clients to produce a coherent business plan, and strongly encouraged the buying and selling of items (though clients were free to change afterwards). How did clients respond to these guidelines, and did they feel constrained by them?

Figure 23 records responses to a number of empowerment questions asked four weeks after grant receipt. In general, most clients, regardless of whether they are assigned to follow up or not, report that they spent little of the grant on unwanted items, played a role in grant spending, had control over the spending, and felt free to spend the grant how they pleased. Those who were assigned to follow up felt slightly less free to make changes, and tended to follow through with the business in their proposal (rather than an alternative). But in general the clients expressed a fair amount of independence and control.



**Figure 23: Perceived control over grant**

#### d. Longer term (one-year) impacts of follow-up

Table 5 displays indicators of wellbeing as measured at the long-term endline survey, roughly one year after the start of Phase 2, for those assigned to the WINGS program with and without any follow-up.

**Table 5: Indicators of well-being in the control and treatment (assigned to follow-up) groups**

<b>Indicator</b>	<b>Possible Range</b>	<b>Desirable Scores</b>	<b>Control</b>	<b>Treatment</b>
<b>Poverty and Financial</b>				
Net cash earnings in the past 4 weeks (000s of UGX)	0 to Any	High	18.6	24.1
Household short-term spending (000s of UGX)	0 to Any	-	53.2	55.2
Wealth index (0 to 1)	0-1	High	0.4	0.5
Savings stock (000s of UGX)	0 to Any	High	192.8	250.2
<b>Health</b>				
Days sick last 30 days	0-30	Low	3.3	2.7
Went to bed hungry last 7 days	0-1	Low	0.1	0.1
Perception of health status	1-10	High	6.3	6.4
Betancourt index of depression and anxiety	0-48	Low	9.9	8.4
<b>Empowerment</b>				
Economic decision making index	0-18	High	11.5	11.3
Gender attitudes index	0-15	High	5.8	5.9
Interpersonal violence index	0-21	Low	20.6	20.6
Independence index	0-15	High	6.6	7.1
Household support index	0-9	High	7.4	7.4
<b>Social Capital</b>				
<i>Groups and Networks</i>				
Group membership	0-Any	High	2.6	2.7
Is a community leader	0-1	High	0.3	0.2
<i>Trust</i>				
Perceived trustworthiness in community	1-10	High	7.0	6.9
<i>Collective Action/Cooperation</i>				
Mobilizes the community for meetings	0-1	High	0.1	0.1
<i>Social Cohesion/Inclusion</i>				
Community hostility index	0-12	Low	0.6	0.5
Social support index	0-21	High	6.5	6.0

### *The one-year economic impact of follow-up: increased profits and savings, but lower asset wealth*

Table 5 and Figure 24 display the impacts of receiving any follow-up on four different measures of economic success: net cash earnings in the past 4 weeks (previous to the survey), a measure of short term spending (consumption), an index of durable assets and wealth, and the stock of savings.

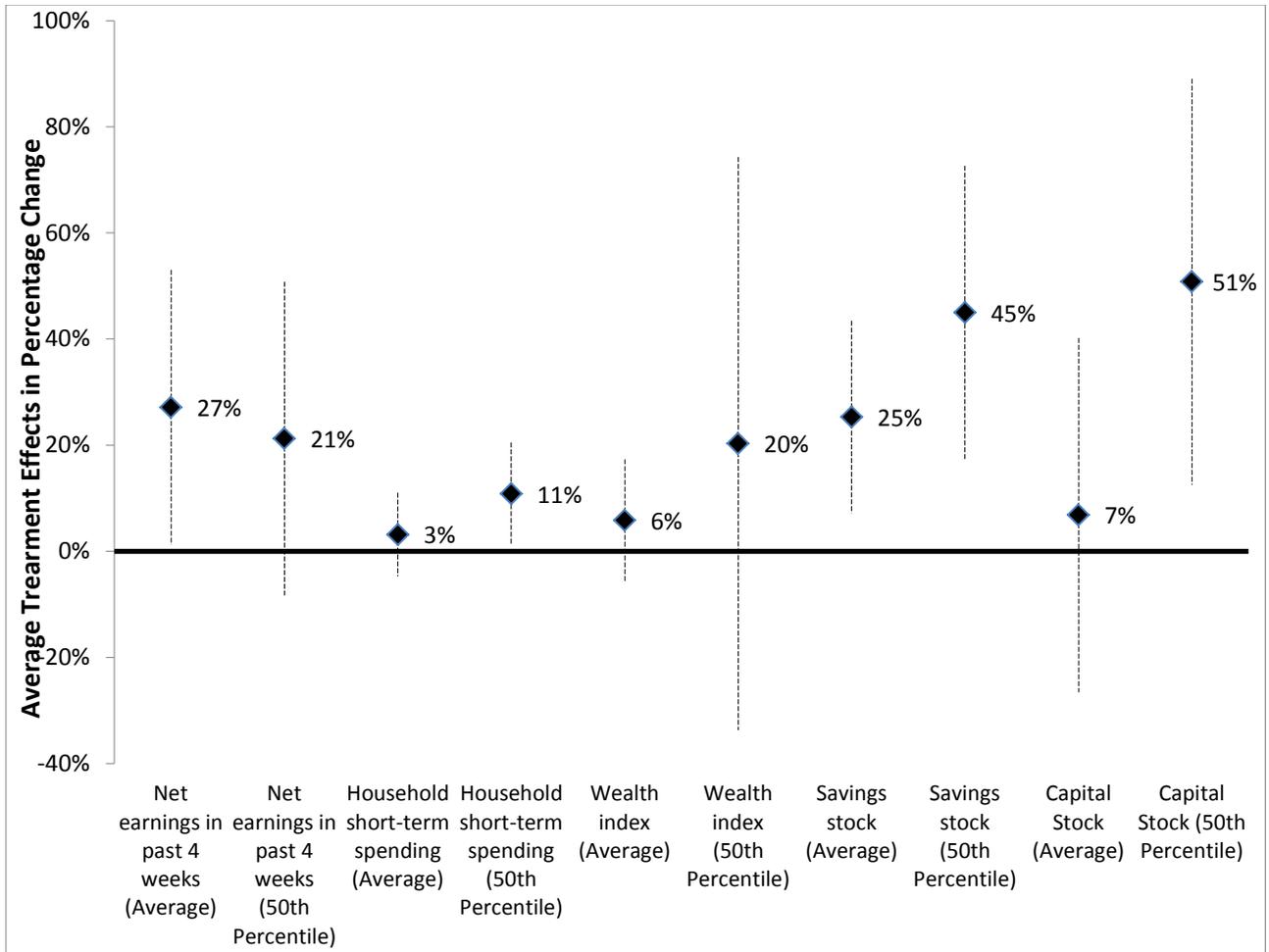
Those assigned to any follow-up report 27% higher cash earnings, a statistically significant increase. In absolute terms the impact is small—about 5,000 UGX per month, or USD 2.01. Since cash earnings are so low in this group, however, the relative impact on the business is substantial.

This average effect on earnings is the same for assignment to 2 and 5 follow-ups, suggesting that the marginal effect of the 3<sup>rd</sup>, 4<sup>th</sup> or 5<sup>th</sup> follow-up visit (for profitability, at least) is low. Two visits seems to be enough to encourage higher profits—either because more of the grant was invested (i.e. they have a higher capital stock, perhaps because of the accountability effect) or because of the substantive value of the advice. Looking at the median capital stock shows a fairly large increase, indicating that the former is probably a factor. The absence of an earnings effect from the third to fifth visits, however, diminishes the case for the substantive value of advice.

This average impact, however, is somewhat sensitive. Like the Phase 1 economic impacts above, this treatment effect of follow-up on income seems to be driven especially by a handful of very high impacts. Alternative measures that are not as affected by these extreme values, like the median treatment effect, are substantially lower. Other transformations of income that compress these extreme values (not shown) show virtually no average impact on income. This suggests that we should take the income ATE with some caution.

With higher income we would expect an increase in short-term consumption, long-term consumption (through durables) and also savings. Those who receive the two follow-ups, however, tend to show a small or no change in current consumption, a large increase in savings stock (by 25%, or about 50,000 UGX, USD 20.08), and a modest (but not significant) increase in asset wealth. This increase in savings and increase in durable assets is most pronounced among those assigned to 5 follow-ups.

The evidence here points to modest improvements from both accountability and advice. To the extent that net cash earnings is the best measure of returns, however, we do not see an added benefit from the third to fifth follow-up. Rather, the third to fifth follow-up, if anything, mainly seems to lead to a decision to save more—a reallocation of how income is used rather than an increase in income. The confidence intervals are so wide, however, that it is impossible to distinguish an independent and significant effect of the third to fifth follow-ups. The evidence is, frankly, ambiguous and sometimes inconsistent. It is difficult to see much evidence in favor of many follow-ups, however, especially given the cost-effectiveness analysis below.



**Figure 24: Impact of assignment to any follow up**

*Follow-up leads to modest, though not always significant, improvements in health, empowerment, and social well-being.*

Looking across a variety of measures of health, empowerment, and social well-being, we see small to moderate improvements among those assigned to follow-up, although these improvements are not always statistically significant.

## Health

As shown in Figure 25, beneficiaries who received follow-up support reported fewer days of illness on average than those who did not receive this support, but the effect was small in absolute terms and not significant. Any number of follow-up visits led to a decrease in the percentage of beneficiaries who went to bed hungry, but this effect was only significant for those who were assigned to receive five visits; 43 percent fewer beneficiaries in the intensive follow-up condition reported that they went to bed hungry in the past week compared to people in the no follow-up condition. Those who receive follow-up also report 11 percent fewer symptoms of depression and emotional distress. The impact of the 2 follow-ups (14.2%) is larger than the impact of 5 follow-ups (9.6%), though the difference between the two is not statistically significant, so must be taken with caution.

Despite these apparent effects on hunger and psychological distress, at least with intensive follow-up in the case of hunger, there was no evidence of an effect on perceived health status.

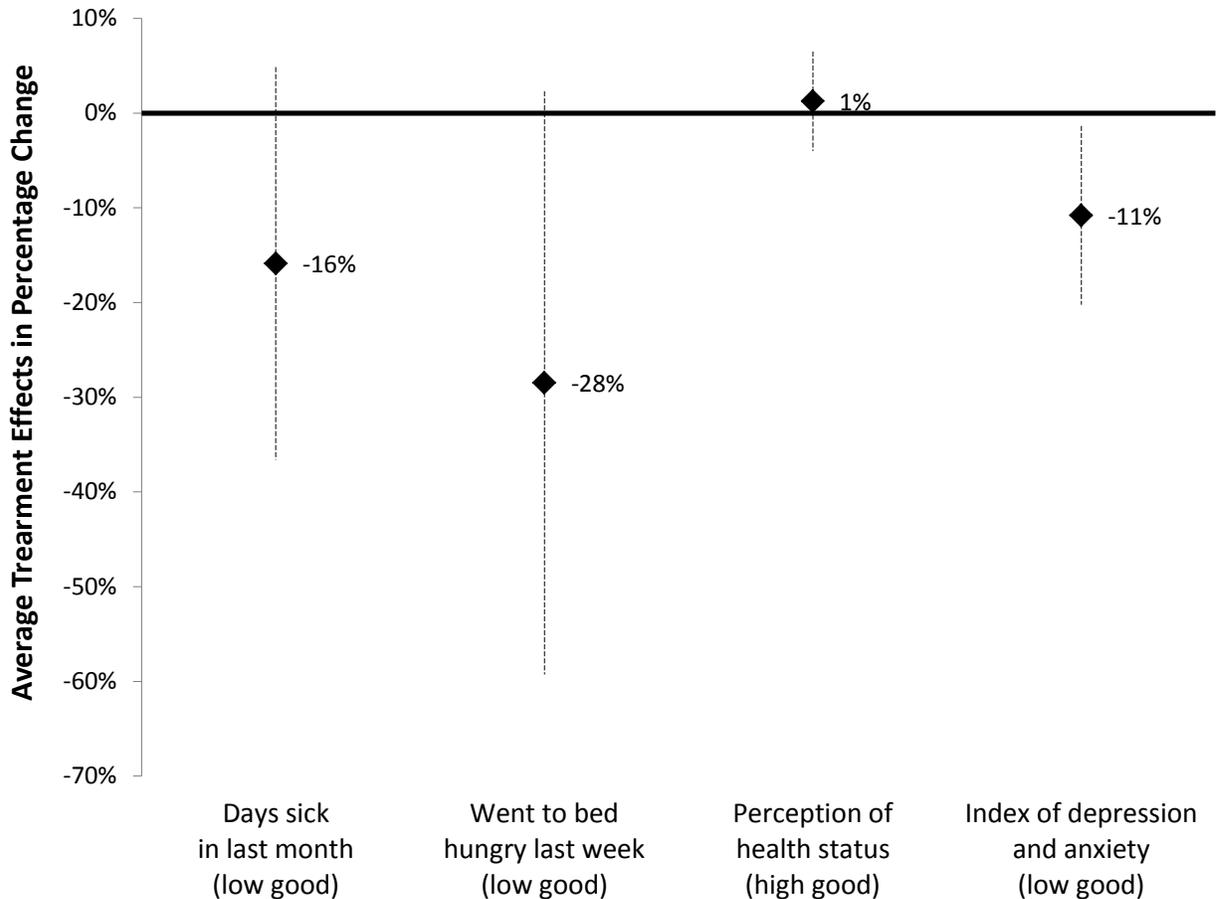
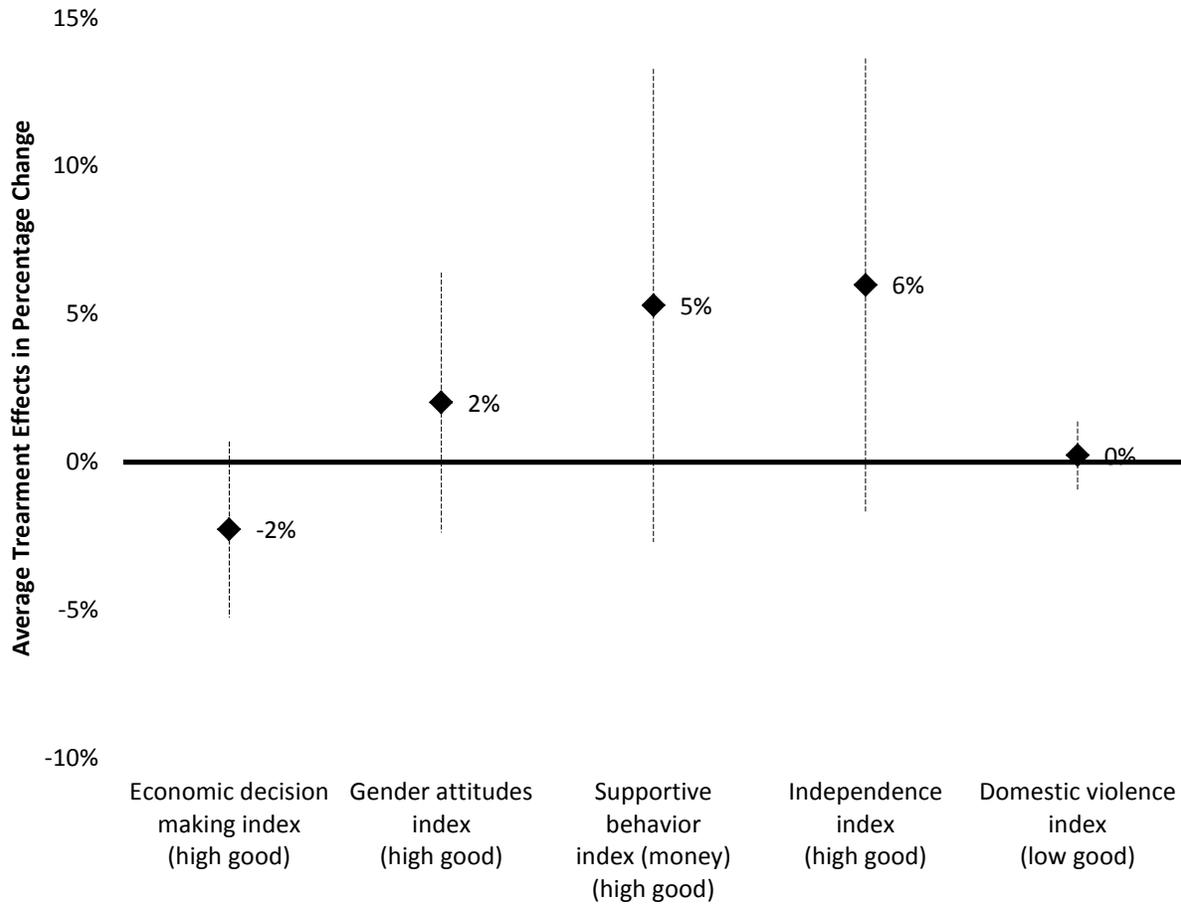


Figure 25: Impacts on health

## Empowerment

Figure 26 examines measures of independence and empowerment, and relations with the spouse/main male in the household, and the household in general. Those who receive follow-up report little change in independence in the household or ability to make decisions on their own. These empowerment measures are nearly unchanged between those assigned to receive follow up and those that were not.

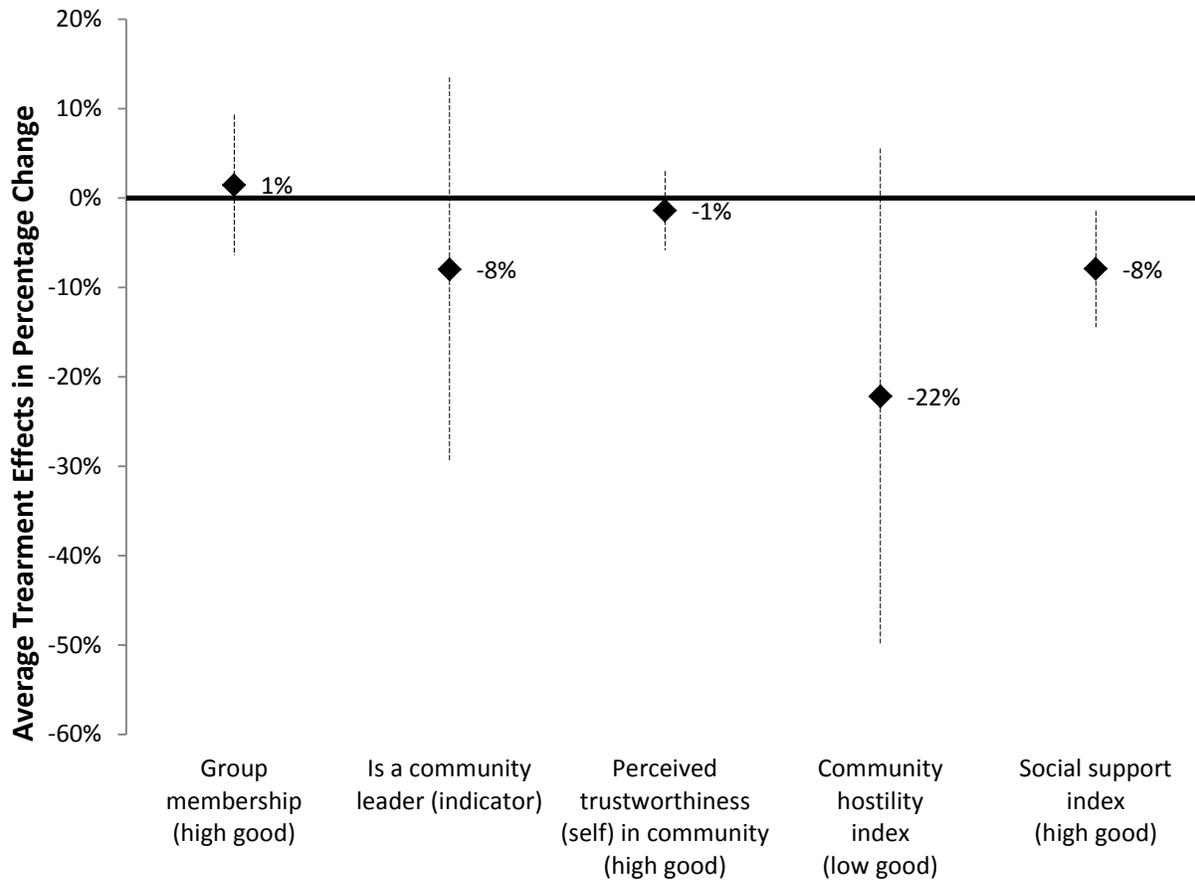
We see modest increases, of the order of 5 to 7%, in spousal support, independence in the household, and in rates of marriage. None of these are statistically significant, however.



**Figure 26: Impacts on empowerment**

**Social Capital**

Figure 27 examines core measures of social capital. We observe reductions in community hostility (of 22%) as well as community support (of 8%) though only the latter is statistically significant. All impacts (positive or negative) are larger, surprisingly, for two follow-ups than five follow-ups, though the difference between the two is not statistically significant. We are hesitant to draw a conclusion from this puzzling pattern, as it could be a result of statistical noise.



**Figure 27: Impacts on social capital**

### e. Is follow-up cost effective?

To assess whether the added follow-up breaks even (i.e. has a positive return), we can return to the rate of return analysis above, in Table 4.

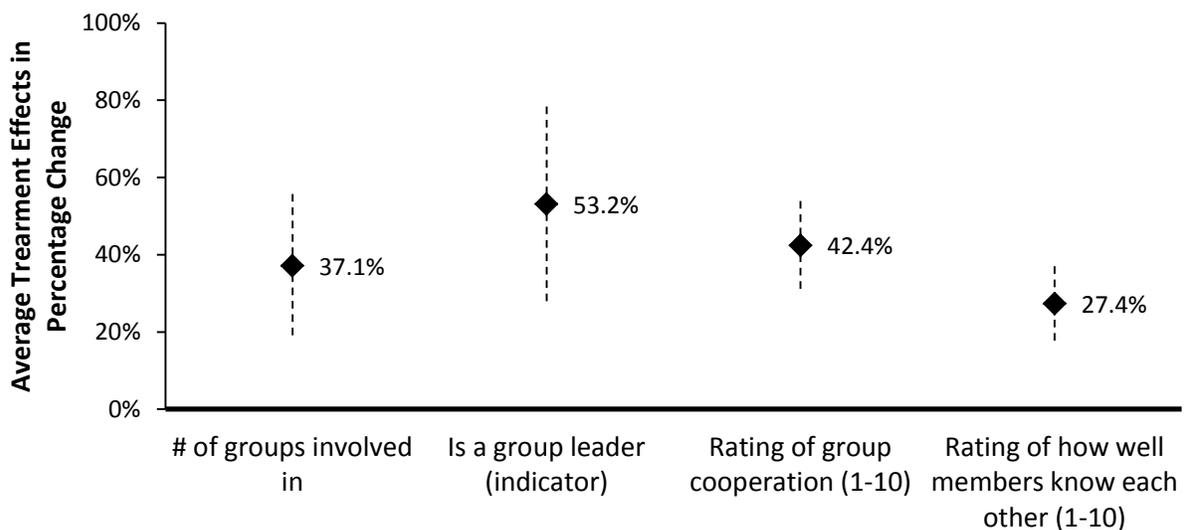
Again, we see that whether or not the return is positive depends a great deal on the size of the treatment effect and the value placed on current versus future money.

The average treatment effect of roughly 5,000 UGX (USD 2.01) is somewhat fragile, but in magnitude seems to be large enough to justify the cost of two follow-ups, estimated as 2/5ths of the total cost of follow-up in Phase 1, or roughly 279,000 UGX per participant (USD 111.65). In this case the return to follow-up is 43% at a 15% discount rate and a (large) 160% at a 3% discount rate, looking at a horizon of 15 years. These returns are greater than the average return to the entire WINGS intervention in Phase 1, suggesting that follow-up may have raised the overall cost effectiveness of the intervention relative to some other components. The follow-up cost does not necessarily represent its administrative and overhead cost, however, and so may overstate somewhat the relative returns, in addition to the lack of robustness regarding alternative measures in our estimate of the treatment effect.

## 8. The effect of building social and group networks

Before examining whether the group dynamics intervention had an impact on business or social success, first we should look whether it had any impact on group dynamics. Survey responses suggest it did.

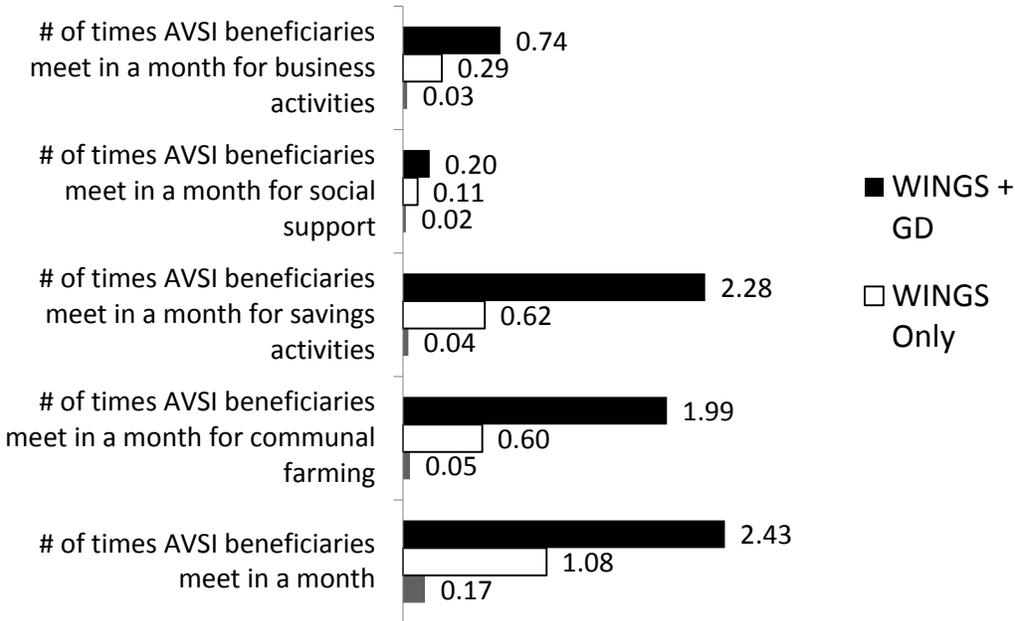
The immediate impact of the group dynamics training was to increase group participation, leadership, and cohesiveness, as seen in Figure 28 below. The average participant in a group dynamics program was involved in 2.8 groups, compared to 2.1 groups in the WINGS program alone and 1.72 in the control group.



**Figure 28: Impacts of group dynamics training on group participation**

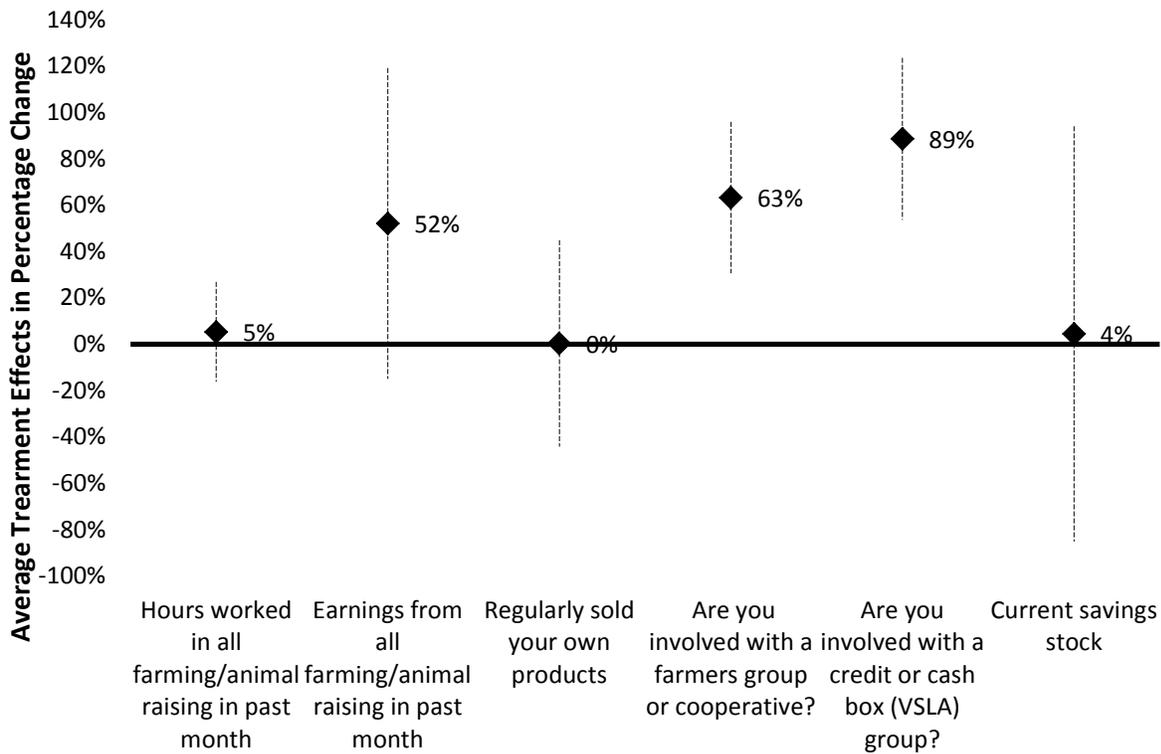
Participants in the group dynamics training also met far more often with their groups for different activities. Figure 29 below shows the frequency of meetings per month for various activities.

The responses suggest that WINGS clients trained in group dynamics are not running joint microenterprises or helping each other with the new business so much as they are engaging in more communal farming (a traditionally collaborative activity in the area) and forming savings groups together. These communal farming and savings groups could simply be a substitute for other groups (i.e. those without the group dynamics training might easily find other community members to save and farm with). These may also be new social bonds and joint economic activities, in which case we might expect an increase in farm productivity and income, as well as an increase in participation in savings groups, the amount of savings and access to credit.



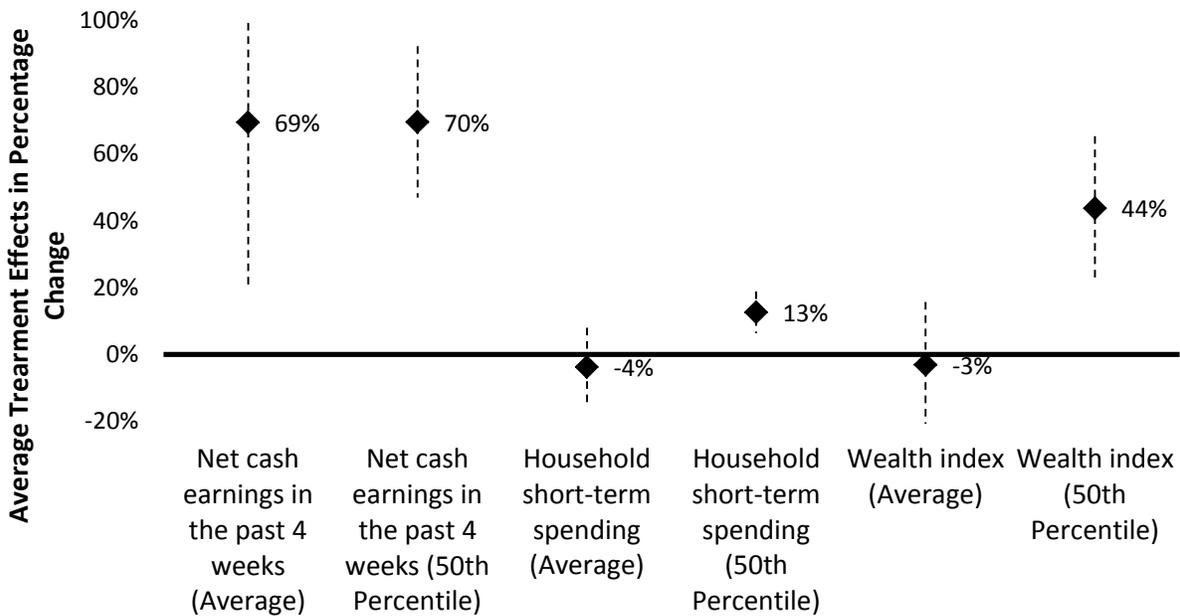
**Figure 29: Group dynamics effect on meeting frequency**

We see results that indicate that the latter case is true, as participation in external communal farming and savings groups went up for those who received the group dynamics training. This participation seems to have resulted in much greater farming productivity, as can be seen by the increase in farming income accompanied by a much smaller increase in hours (below, in Figure 30).



**Figure 30: Group dynamics impact on farming and savings activities**

The impacts on poverty and employment are less clear. As noted in the earlier draft, we see a dramatic increase in income, which persists when looking at the median treatment effect as well as the average. Other measures of wealth, however, such as household consumption and a normalized wealth index, do not see the same impact, although the median treatment effects show a slight increase (seen in Figure 31).



**Figure 31: Group dynamics training impacts on poverty**

Finally, the increase in group cohesiveness and group meetings for social support do not correspond with the positive effect in psychosocial measures one might expect (seen below in Figure 32), although we do see a non-significant drop in community hostility.

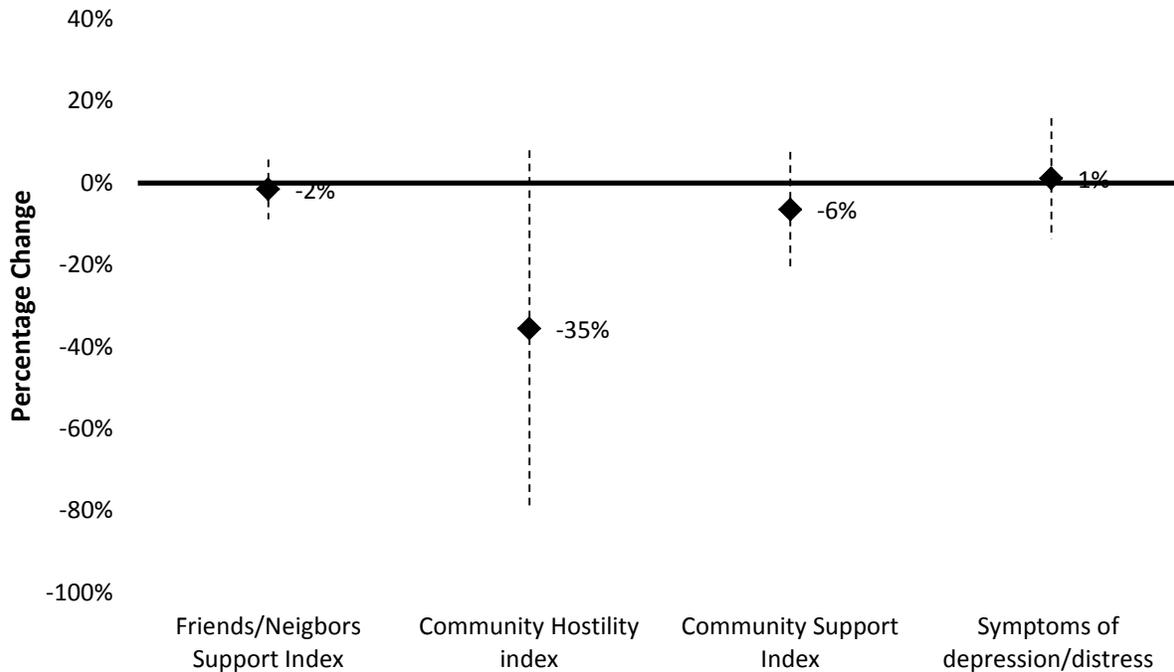


Figure 32: Group dynamics impact on psychosocial outcomes

## 9. Does Male Involvement Promote Women’s Empowerment and Well-Being?

Consistent with other studies of economic assistance programs targeting poor women, our results suggest that WINGS had a positive impact on economic activity, household wealth, and economic security, but did not improve women’s health and empowerment. What could account for this impact-paradox, as it has been called in the literature?

One hypothesis is that any personal gain women derived from an increase in their household’s economic well-being was offset by the stressors associated with planning, launching, and maintaining a new business. A complementary hypothesis is that the lack of male partner involvement in the program limited opportunities for changes in gender attitudes and behaviors that would lead to women’s empowerment.

We decided to test these ideas by running the program again, this time experimentally varying the framing from an individual approach to a more inclusive household approach. Women in the standard program participated as individuals; women in the W+ variant of the program participated with household partners. Would this slight reframing—essentially a zero-cost variation of the standard program—have a positive impact on women’s empowerment and well-being?

### a. Underlying theory of change

Our theory of change was based on three key elements leading to change in women’s empowerment: (a) re-framing the program as an opportunity to receive training and start-up capital for a female-led business that would involve the household; (b) including male partners from the start; and (c)

incorporating discussions about gender relations and exercises to build the couple’s communication and joint problem-solving skills into the business skills training.

We hypothesized that this ‘nudge’ would lead to a measurable impact in the partner’s direct and indirect support for the business—from relaxing constraints placed on the woman, to providing emotional and indirect support that helps the woman to juggle all of her responsibilities, to actively participating in business operations. We further hypothesized that increased partner support would lead to more business success and begin to change gender attitudes in the household.

Our results partially supported these hypotheses.

**Table 6: Indicators of well-being in the control and treatment (assigned to W+) groups**

<b>Indicator</b>	<b>Possible Range</b>	<b>Desirable Scores</b>	<b>W normal</b>	<b>W+</b>
<b>Poverty and Financial</b>				
Net cash earnings in the past 4 weeks (000s of UGX)	0 to Any	High	25.9	18.6
Household short-term spending (000s of UGX)	0 to Any	-	57.4	51.8
Wealth index (0 to 1)	0-1	High	0.4	0.5
Savings stock (000s of UGX)	0 to Any	High	226.4	233.9
<b>Health</b>				
Days sick last 30 days	0-30	Low	3.3	2.5
Went to bed hungry last 7 days	0-1	Low	0.13	0.09
Perception of health status	1-10	High	6.2	6.4
Betancourt index of depression and anxiety	0-48	Low	9.5	8.4
<b>Empowerment</b>				
Economic decision making index	0-18	High	11.4	11.4
Gender attitudes index	0-15	High	5.8	5.9
Interpersonal violence index	0-21	Low	20.6	20.7
Independence index	0-15	High	7.2	6.7
Household support index	0-9	High	7.4	7.4
<b>Social Capital</b>				
<i>Groups and Networks</i>				
Group membership	0-Any	High	1.8	1.7
Has a leadership position in a group	0-1	High		
<i>Trust</i>				
Perceived trustworthiness in community	1-10	High	7.0	6.9
<i>Collective Action/Cooperation</i>				
Index of community contributions	0-Any	High	127.5	303.5
<i>Social Cohesion/Inclusion</i>				
Community hostility index	0-12	Low	0.6	0.5
Social support index	0-21	High	6.5	6.0

## b. Did W+ impact the couple's communication and relationship?

Yes, the impact was small but significant (see Figure 33). Despite only spending a few hours learning and practicing communication and joint problem-solving skills in the business skills training, the average W+ participant reported statistically significant gains in these skills more than a year later. For instance, when asked to assess her partner's listening skills, the rating of the average W+ beneficiary was 9.2 percent higher than the rating of the average participant in the standard WINGS program (about a half step on a 10-step rating ladder). Our measures mainly come from the longer one-year evaluation, as the immediate post-program evaluation contained few questions of this nature.

We also see a significant impact on communication frequency. On average, W+ participants rated their frequency of communication with their partner 8.1 percent higher than the rating of the average participant in the standard program. A small but significant difference of 5 percentage points was observed in the proportion of women who reported having talked with her partner about the business since receiving the grant, adding further support that W+ training led to the acquisition of new skills.

Lastly, it appears that couples are experiencing improvements in their relationship as a result of the program: the average woman in the W+ program rated her relationship with her partner 6.2 percent higher than did the average woman in the standard WINGS program.

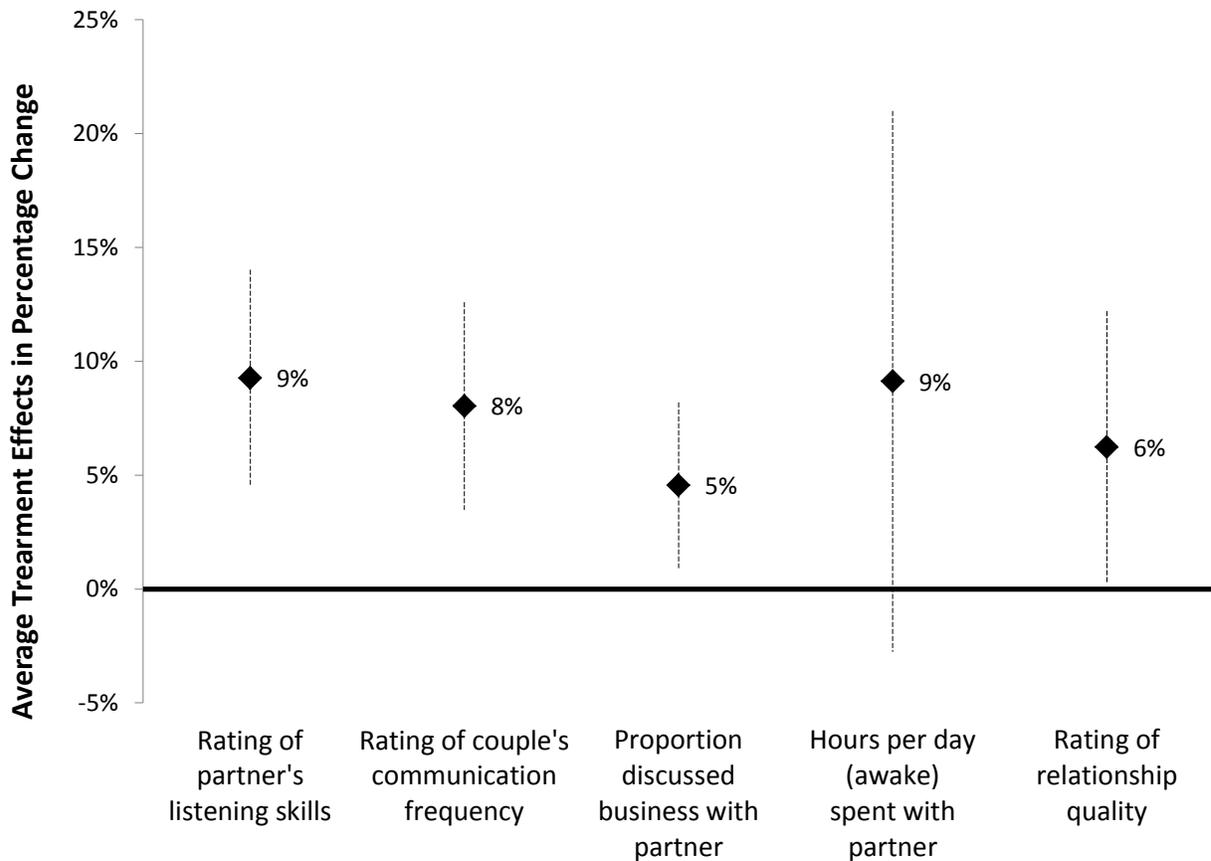


Figure 33: Impact on relationship skills and quality

### c. Did W+ impact the partner's direct and indirect support for the business?

We observed no differences between the groups of women in terms of hours spent on the business and domestic chores, but a significantly greater proportion of W+ participants reported that their partners helped with many household chores, as shown in Figure 34 below. Thirty-six percent of women who participated in W+ reported that their partners became more supportive after the business skills training compared to only about one quarter of women who participated in the standard WINGS program.

When asked to rate her partner's support for the business, the rating of the average W+ beneficiary was 8.1 percent higher than the rating of the average participant in the standard WINGS program. Similarly, her rating of her partner's involvement in the business was 7.8 percent higher than her counterpart's in the standard WINGS program. These differences show small but statistically significant change in direct support.

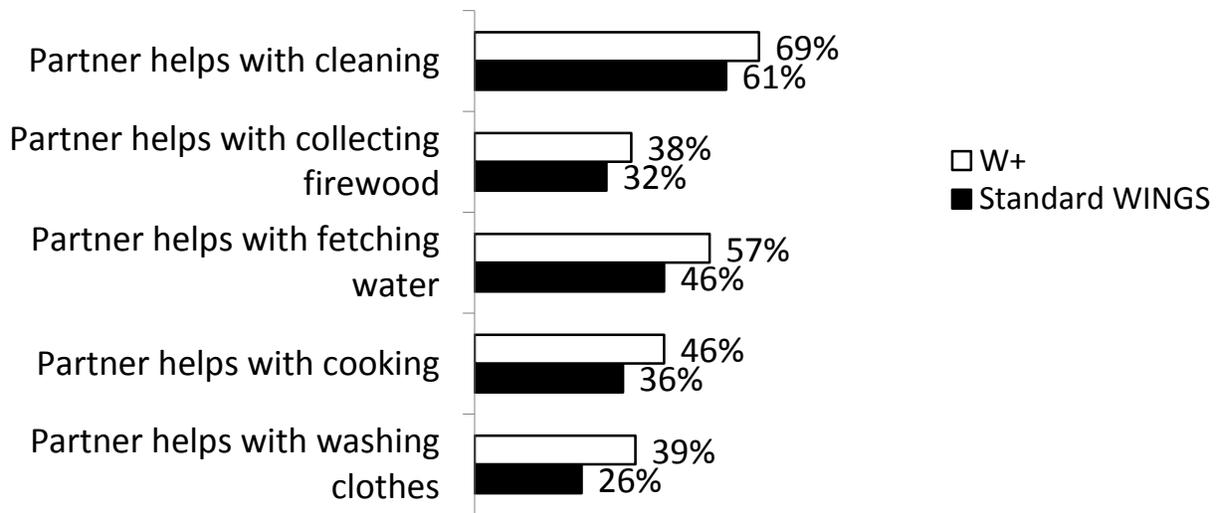


Figure 34: Partner contribution to household chores

### d. Did W+ impact the household's economic security?

The results are mixed (see Figure 33). On average, women in the W+ program reported more than a quarter less profit in the past four weeks and nearly 10 percent less non-durable household consumption compared to women in the standard WINGS program. Non-durable goods are consumables that do not last, like food and medication. The fact that both of these indicators moved together makes sense because households with less income have less money to spend.

These statistically significant negative findings are challenged by the observation that W+ participants accumulated 1.5 times more wealth on average than did their counterparts in the control group. We measured wealth by durable assets—items like farm implements that can be used over and over again—so this significant increase in wealth suggests a shift of grant spending or investment into durable assets.

It is also notable that one month after receiving the start-up capital, the average W+ participant reported 72.6 percent less in household savings compared to the average participant in the standard program. This difference evened out, however, by the end of the program. This initial difference in savings cannot be explained by differences between the groups in terms of business investments, borrowing, or transfers.

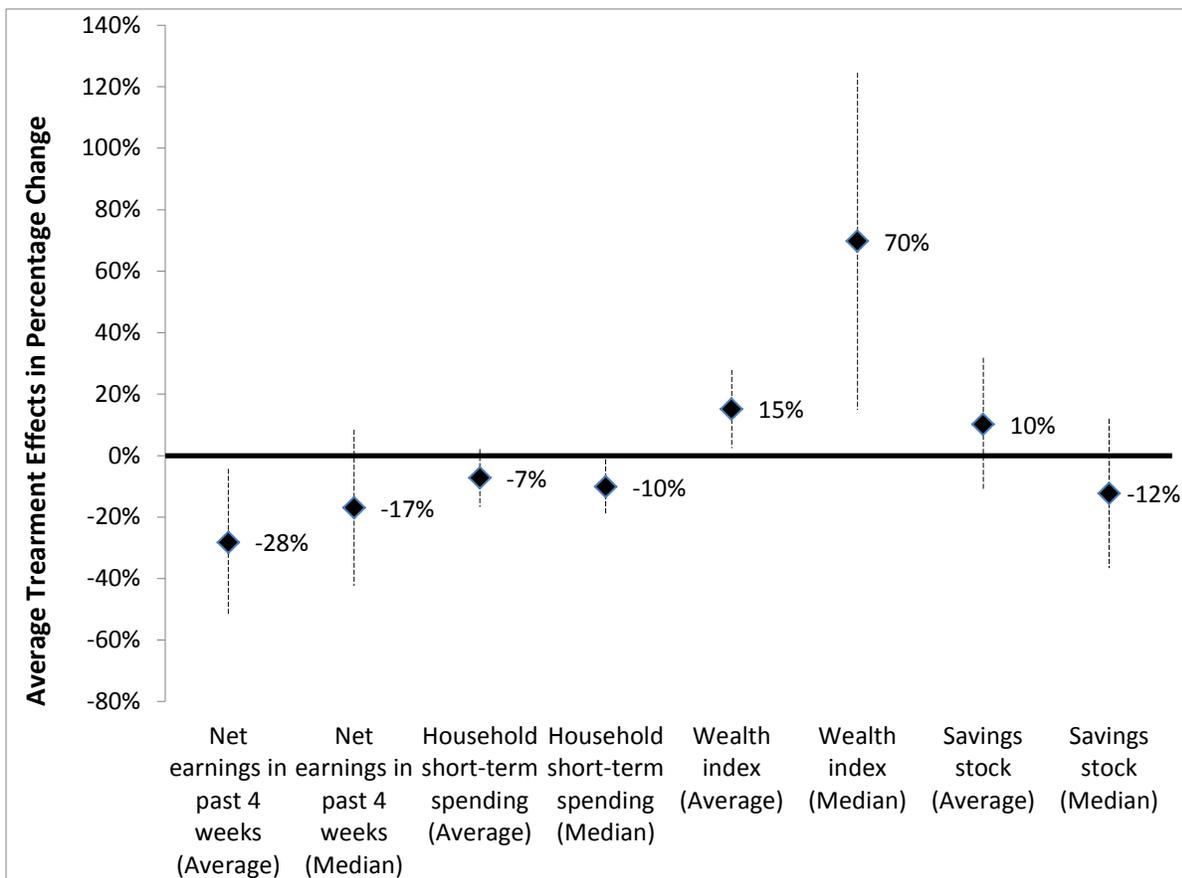


Figure 35: Impacts on poverty and savings

One possible explanation is that AVSI reports that it observed that in the W+ households the husband and wife would often divide the money to run different businesses, and therefore the profits of each business could be smaller than the total would be registered in case a bigger capital was invested in one business. Unfortunately this information came too late to be measured in the profits-making section of the survey. But the household assets and consumption figures should reflect the husband’s investments and profits indirectly. The evidence here is mixed—an increase in asset wealth but a decrease in consumption and savings. Overall, it is difficult to see a pure economic case for the W+ intervention.

Interestingly, the W+ program seems to have had a positive impact on economic security in a very literal sense. On average, women in the W+ program reported experiencing about one quarter less community victimization compared to women in the standard WINGS program. This statistically significant difference can be accounted for by lower rates of robberies, property destruction, and stolen goods.

### e. Did W+ impact the woman’s health and empowerment?

When surveyed 30 days after receiving the start-up capital, the average W+ participant’s score on an index of symptoms of depression and anxiety was 15 percent lower than the score of the average woman in the control group. When surveyed again at the end of the program, evidence of a positive impact persisted, with W+ participants reporting 8.6 percent lower scores. Both differences were statistically significant, but small in absolute terms—the rough equivalent of endorsing 1 out of 8 possible symptom less frequently, from often to sometimes, from sometimes to rarely, or from rarely to never.

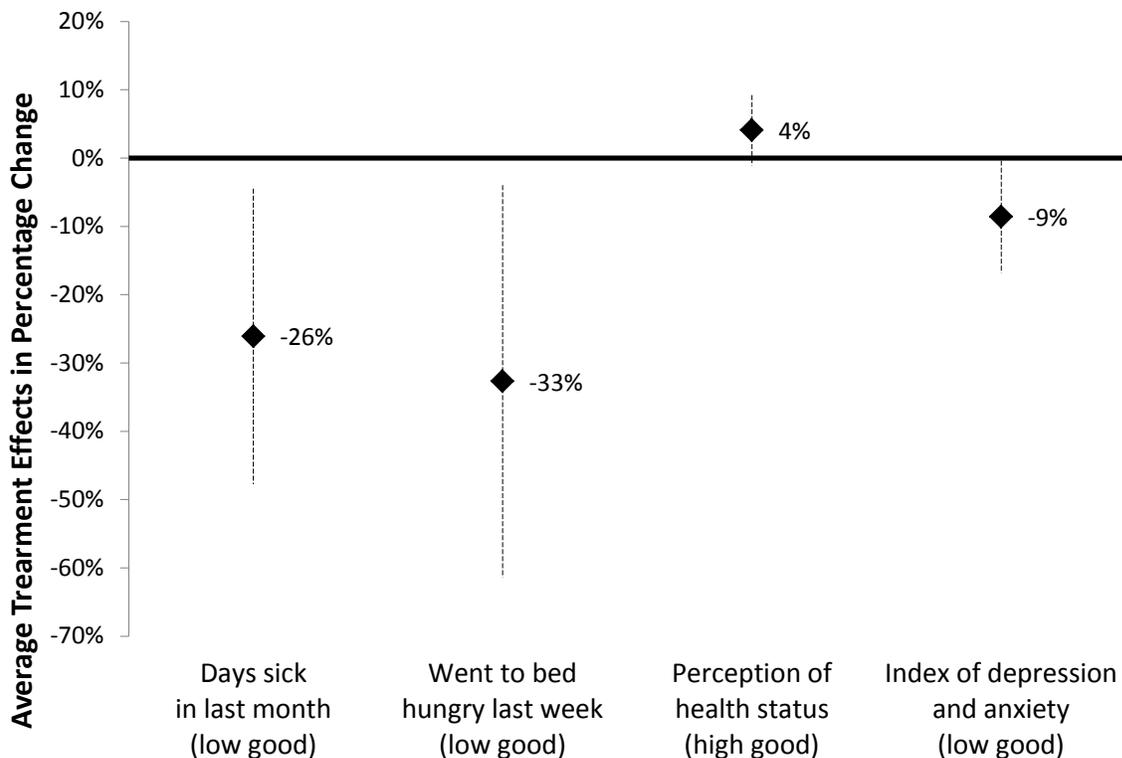
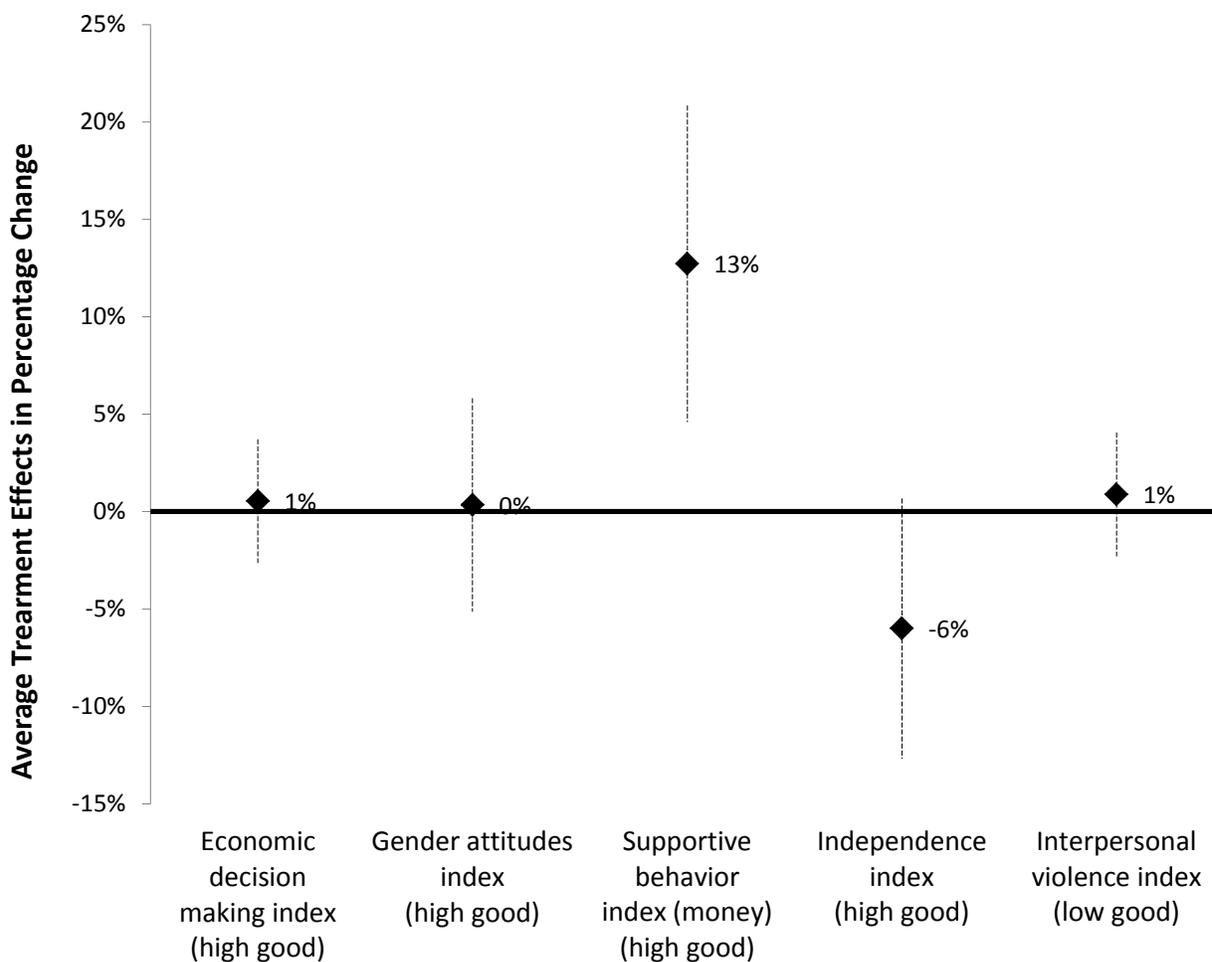


Figure 36: Impacts on health

We also observe positive and statistically significant impacts on the number of days sick in the past month and the number of hunger days in the past week (Figure 36). While positive, these improvements only led to a small increase in perceived health status that is not statistically significant.

The results regarding impact on empowerment are mixed. Consistent with Phase 1, we find that women in W+ do not report experiencing any statistically higher (or lower) rates of intimate partner violence on average. Similarly, the impact on indices of economic decision-making and gender attitudes were statistically indistinguishable from zero.

We do see an impact on an index of supportive behavior. The average W+ participant’s score was 13 percent higher than the average participant in the standard program. This index measures how well the beneficiary is treated by her partner and the extent to which the partner supports her business and allows her access to financial resources for household needs. This finding is consistent with the evidence we see regarding improved relationships and cooperation among W+ participants and their partners.



**Figure 37: Impacts on empowerment**

We also observe a possible contraction of a woman’s independence; the average W+ participant’s score on an index of independence was 6.1 percent lower than her counterpart’s. A negative interpretation would be that the involvement of her partner actually decreased empowerment. A positive or neutral

interpretation of this finding would be that the W+ participants were working more closely with their partners on the business, which led to real or perceived differences in freedom.

## 10. Discussion and Conclusions

### *The poorest, most capital and credit-constrained women stand to benefit most from microenterprise start-up assistance*

The intervention not only doubled incomes among the very poorest women, but had the largest impact on those with the least assets and access to credit. One reason is that, in the absence of the intervention, the women with initial assets and credit access, however meager, manage to invest and advance.

This suggests that future interventions ought to target the poorest and most constrained people with capital. It meets two of the objectives of any humanitarian program: target the poorest and most vulnerable, and have the highest impact at the lowest cost.

### *The need for cost-effective service delivery*

While the impacts of the intervention were large, in general they struggle to pass a simple cost-benefit test. Assisting the poorest women from extreme poverty may be so important that such cost-benefit considerations are secondary, or must better take into account the greater value we place on helping the very poorest. A case could be made for valuing movements away from the direst poverty over other impacts of aid.

We doubt this case needs to be made, however, since we believe it is possible to deliver nearly the same anti-poverty impacts at less cost. The grant to the women was likely the most impactful element of the program. It represents, however, less than a sixth of the per-person cost of the intervention. Increasing the ratio of grant to total cost is likely to be one of the best investments in poor women in Uganda. Halving the cost of the intervention would likely reduce the impacts of the grant by far less than half, enabling more ultra-poor women to be reached and increasing the aggregate welfare in the region.

Additions like follow-up narrowly passed a cost-benefit test. These additions need to be delivered more cost effectively, perhaps relying on more local expertise that do not come with the high wage and transport costs of sending highly trained social workers to the field.

### *Cost-effectiveness in poverty alleviation is best pursued through further experimentation*

Overall, more research is recommended to tease out the effect of the different components, and the extent of spillovers if the intensity of treatment is varied. Perhaps the most important variation to test is the impact of a simple, low-cost cash transfer versus the more complete intervention. Two cash transfers could be tested: one equal to the regular program cash transfer (but without all the benefits of the full program such as training and supervision) and one equal to the full cost of delivering all components of the intervention.

Another clear candidate for further interrogation is the business skills training. A recent report by McKenzie and Woodruff (2012) notes that there is little evidence so far of its effectiveness, let alone cost-effectiveness. Few have investigated the impact of training on very low-skill populations like this one, in combination with a cash grant. This situation offers the highest potential for training impacts,

since skills are so meager in the population. The fact that we see little relation between skills/education and economic success, however, suggests that training's impact might be modest. It can and should be investigated whether this process is worth its cost by experimentally varying whether training is provided and the length and content of that training. While it may not be possible or desirable to do away with training entirely, it is possible it could be streamlined or economized (training currently takes 4-5 days).

Another focus of future research could be on reducing the cost of disbursement. While it is difficult to allocate and attribute costs, presently it looks as though it costs as much or more to target clients and disburse grants than the grants themselves. Streamlining and economizing here is likely to have some of the greatest impact on value, and allow the most people to be served by such an intervention. One potential way to reduce costs is to shift from costly in-person grant distribution to remote disbursement via a mobile phone-based banking system like M-Pesa in Kenya or Mobile Money in Uganda. This would not work for all clients presently, but mobile phone penetration rates are increasing every year and telecom providers continue to expand the geographical reach of their networks.

Additionally, since both the economic and non-economic impacts of the interventions could change over time (non-economic impacts may take especially long to emerge) we recommend a research design that allows measurement of 3 to 5 year impacts. To the extent an organization like AVSI does not wish to maintain an ultra-poor and vulnerable control group for that period, the cash versus full program comparison is possibly the most instructive, especially to the extent that cash grants can be varied to get at the returns to different size transfers.

These conclusions all stem from the emphasis on poverty-alleviation as a goal. To the extent that non-economic impacts are the objective, a different program may be required. We revisit this point after reviewing the evidence on these non-economic effects.

### *Improvements in economic well-being do not necessarily have secondary effects on a woman's health and empowerment*

While the anti-poverty impact is an important finding on its own, we came to the study with the hypothesis that improving economic status would have large secondary effects on outcomes such as a woman's health and empowerment.

#### ***Physical and Mental Health***

Current thinking suggests that the relationship between poverty and mental health is bidirectional, meaning that the causal pathway can flow in both directions. On the one hand, the social drift hypothesis says that ill mental health can lead to poverty by limiting a person's ability to engage in productive activities and isolating them from sources of support. On the other hand, the social causation hypothesis claims that the experience of poverty can lead to increased stress and social isolation, thereby heightening the risk of mental health problems such as depression and anxiety.

If this latter pathway exists, then economic programs would *indirectly* improve a woman's health by reducing her daily stressors. In humanitarian settings, this pathway has been referred to as a psychosocial approach. While common to nearly all post-conflict and humanitarian settings, there is limited evidence of the effectiveness of this approach, with a recent systematic review showing no rigorous studies that examined the impact of broader services and security interventions (see Tol et al., 2011) and very limited evidence on the effect of economic programs on mental health (Lund et al., 2011).

**Our results are disappointing: we find little evidence of secondary effects of improving economic status on women’s physical and mental health in the medium term.** On average, women who participated in WINGS were less likely than women in the control group to go to bed hungry, but this effect was not statistically significant at conventional levels. There was no measurable difference between the groups in perceived health status or reported symptoms of anxiety and depression. If anything, women who participated in the program were sick about a half a day more in the past month.

We do see higher expenditure on children’s health and education among the treatment group, but this does not appear to lead to improved health or educational status, at least in medium term. The incidence of sickness among the beneficiaries’ youngest children remains constant, but the children of WINGS participants seem to be sick about a half a day more per month. The reason for this is not clear, and the difference is unlikely to be meaningful.

### ***Empowerment***

Poor rural women are typically targeted in microfinance programs because they are believed to be more likely than men to repay the loan and use the profits to benefit the household, particularly through spending on children’s education and health (Garikipati, 2008). The conventional wisdom also assumes that lending to women will enhance their status in the household, thereby empowering them through a set of “mutually-reinforcing virtuous spirals” (Mayoux, 1999). While ample evidence suggests that lending to women does lead to reliable improvements in individual and household income, the data on empowerment are not as consistent or clear. Households benefit from economic assistance targeting women, but women may not be empowered as a result, a pattern that Garikipati (2008) refers to as the “impact-paradox”.

**This paradoxical pattern describes our results well: women report benefits to the household in terms of income, consumption, savings, and investment in children, but not greater levels of empowerment.** Specifically, we detect no effect of WINGS on participation in household decision-making, independence, gender attitudes, or rates of intimate partner violence. While this finding of no effect on intimate partner violence is important—suggesting that participation in WINGS did not increase a woman’s risk of violence—we had hoped to see a decline.

### ***Involving men does not solve this paradox, but some results are promising***

Why do we observe economic success but not empowerment or health? With respect to the lack of secondary effects on physical and mental health, one possibility is that the personal gain women derived from an increase in their household’s economic well-being was offset by the stressors associated with planning, launching, and maintaining a new business. As for the lack of an impact on empowerment, it could be the case that not involving male partners in the program limited opportunities for changes in gender attitudes and behaviors that would lead to women’s empowerment. The second phase of this study examined the question: Would taking a more inclusive household approach that encouraged partner involvement reduce her daily stressors, improve her health, and make her more empowered?

We observed four important outcomes of experimentally varying partner involvement in the business:

**First, involving male partners and training the couples on communication and joint-problem solving led to more partner involvement and support for the business, both direct and indirect, and had a lasting positive impact on the couples’ interactions.** While these effects are small, we believe they are meaningful. Our theory of change for W+ begins with the hypothesis that skill building and a more inclusive approach would lead to changes in male behavior and, ultimately, attitudes.

**Second, the combination of income generation plus partner involvement and support had small but positive impacts on women’s physical and mental health.** Compared to women who participated in the standard WINGS program—which did not lead to any health impacts in the first phase—women who participated in W+ were sick less often, were more food secure, and experienced fewer symptoms of depression and anxiety. Again, we must caution that these effects are small: less than 1 day difference in the number of days sick in the past month, 4 percent difference in the proportion of women who sometimes go to bed hungry, and the rough equivalent of endorsing 1 out of 8 possible symptoms of anxiety and depression less frequently, from often to sometimes, from sometimes to rarely, or from rarely to never.

While small, these effects are important from a policy and practice perspective because we find that a simple reframing—a ‘nudge’—can have a positive impact on women’s health and couples’ relationships about a year after the brief training. Recall that W+ did not involve couples’ counseling or booster training sessions. Participants in the W+ program received the same amount of program contact as participants in the standard WINGS program. The only difference being that W+ participants spent part of their training time learning and practicing communication and problem-solving skills with partners and participated in the program as a pair with the goal of creating and sustaining a successful female-led business. For practically no additional cost, we see important gains in a woman’s well-being.

**Third, the impact-paradox with respect to women’s empowerment continues: we do not observe secondary effects on women’s empowerment.** Gender norms and attitudes are learned over a long time and are resistant to change. By having men participate in the initial training, watch role-plays, and practice communicating with their partners in front of the group, we aimed to stimulate social learning that would lead to behavior change. We found modest evidence that this process began for the W+ couples.

Principles of operant conditioning suggest that, over time, men will be reinforced for supporting their wives as their behaviors are reinforced by the wife and by the observation that their collective effort is benefitting the household. This process is hypothesized to create a situation of cognitive dissonance in which the male partner develops conflicting beliefs (e.g., women should not be allowed to travel freely outside of the village vs. giving women freedom of movement helps them to be more productive business partners) and then seeks to resolve the dissonance by updating his beliefs. However, social norms about gender roles and relations are powerful guides for behavior so change within households may depend on the strength of norms in their communities.

Overall, while we do not observe changes in women’s empowerment in the medium-term, it is reasonable to think that a program like W+ can lay the foundation for longer-term change. An alternative explanation of the results is that the ‘nudge’ wasn’t a strong enough dose of an intervention to bring lasting attitudinal and behavioral change for women’s empowerment. More testing of intensity and combination of programs targeting communication, skills and norms is needed.

**Fourth, women participating with partners are not more economically successful.** In fact they might be worse off in some ways. Women in W+ reported earning one quarter less profit and consuming 10 percent less in non-durable household goods. At the same time, they also reported accumulating 1.5 times more wealth. It could be the case that partners are influencing a shift in spending towards durable goods. Program experience also suggests that couples might be ‘splitting’ the start-up capital rather than working together on one business activity. This could have the effect of reducing the woman’s potential profit. This might not be a bad strategy per se, but we cannot make a determination at this time.

## *Social Capital*

In the last three decades, scholars and practitioners have generated a wealth of evidence that points to the importance of social networks in poverty reduction efforts (e.g., Grootaert, 1999; Narayan & Pritchett, 1997). The basic idea is that people who are more involved in community life have greater sources of social support and a louder voice in community decision-making. For someone engaging in business activities, these connections may lead to greater economic success and act as a buffer against hard times. We hypothesized that WINGS would lead to increased social capital and that greater social capital—generated through the formation of business groups—would lead to increased business success. The evidence is mixed.

**WINGS beneficiaries experienced a small increase in positive community support and relationships, but also a small increase in community hostility.** It could be that the program helps to strengthen ties to close community members who can benefit from the beneficiary's new ability to provide support, but strains relations with the broader community due to feelings of resentment and the crowding out of existing businesses. We find that WINGS benefits net consumers of retail goods by reducing prices, but that this reduction in prices leads to a 12 percent reduction in profits for existing micro-enterprises. Overall, the WINGS program led to a rise in aggregate well-being of the community, but there were adverse effects for existing traders.

**It is not clear whether stimulating social capital by organizing beneficiaries into business groups had an effect on business success: we see a dramatic increase in income among those who participated in the group dynamics training, but no impact on consumption or wealth.**

## *Focusing future program objectives and targeting support*

The intervention was predicated on psychosocial impact and reintegration of the most vulnerable as much as poverty alleviation for the poorest. The findings suggest that, as designed, the intervention is mainly effective at tackling poverty and ineffective at changing levels of social integration and empowerment. This is no fault of the program – the conventional wisdom in humanitarian aid is that economic empowerment and more general psychosocial well-being and independence are closely tied. What this study (and others) are beginning to show is that the relationship is not so simple.

This implies future programs need to rethink and be explicit about their aims, and tailor their intervention to that. If poverty alleviation is the primary outcome of interest, more streamlined programming dealing with the most binding constraint (capital) is probably optimal. Efforts should be made to lower program delivery costs for everyone in order to deliver more intensive support to those who need it most while expanding the reach of the program to more people in need. For instance, AVSI could shift to mobile money transfers and remote monitoring to lower costs and add beneficiaries while at the same time limiting expensive in-person strategies (e.g., accountability, advising, counseling) to those with above average expected or exhibited needs.

If health outcomes are key, then evidence-based medicine and mental health programming is most promising. If the main objective of a program is women's empowerment, then interventions that target strongly held norms are likely needed. Economic-focused interventions do not seem to deliver secondary effects on empowerment or health or social connectedness, but more research is needed in this area.

## Appendix: A statistics primer

We set out to write a report that is free of excessive technical jargon. Whenever possible, we tried to present findings in meaningful terms, our prose aided by several tables and figures. While we believe that the lessons of the report can be understood without a background in statistics, there are a few concepts that are good to review.

### *Impact or effect size*

Simply put, impact refers to the size of the difference between groups when evaluating outcomes. In this report, impact will often be stated as the average difference between people who received the WINGS program in Phase 1 (treatment) and people who did not (control). This difference can be framed as an absolute value (e.g., increase of UGX 10,000, roughly USD 4.02) for the average WINGS beneficiary) or as a percentage (e.g., increase of 100% for the average WINGS beneficiary).

### *Statistical significance*

You will notice in our tables that we report probabilities known as p-values. When p-values are less than the generally accepted cutoffs (1%, 5%, 10%), we indicate this with one or more asterisks. P-values help us to evaluate our study hypotheses. The default hypothesis is always that there are no differences between the treatment and control groups, or that the program has no impact. When we detect a difference, we use the p-value to evaluate whether we should reject the default hypothesis that there are no differences and conclude that the program had an impact.

For instance, let's say that the average WINGS beneficiary earned UGX 10,000 more than the average member of the control group and the associated p-value is less than 0.01. We would indicate this with three asterisks in the table (\*\*\*) . This p-value means that, if there were truly no differences in earnings between the treatment and control groups, the probability of finding impacts of UGX 10,000 or larger would be less than 1%. Since the probability is so small, we can reject the default hypothesis that the program had no impact on earnings. We would say that the result is "significant." This is different than saying that the magnitude of the result is large; magnitude refers to effect size or impact as explained above. Taken together, significance and magnitude help us know what to make of our results.

### *Confidence intervals*

Another way to evaluate our results is to report confidence intervals. Statistical tests are never exact, and we always have some degree of error in what we set out to measure. Confidence intervals tell us the range of values that our finding could take. For instance, we might report that the average effect size is UGX 10,000, but because there is some error in this estimate, we would also report that the "true" effect size falls somewhere between UGX 8,000 and 12,000 (USD 3.21 – 4.82). Often we report the 95% confidence interval, meaning that the "true" value would be fall in this interval in 95 out of 100 studies. If we wanted to be more confident, say 99%, our confidence interval would expand (e.g., UGX 6,000 to 14,000 – USD 2.41 - 5.62). We always want the confidence interval to be small; the smaller the interval the more precise our estimate of impact (better surveys lead to more precise measurement, which is why we take so long preparing!).

### *Average, mean and median*

The term “average” refers to the central value of a group of numbers, in our case the central value for an outcome among members of the treatment group or the control group. The arithmetic mean and the median are two measures of the central value. When we say “average,” we are referring to the mean. Because means can be distorted by extreme values—people who do really well or really poorly—we sometimes report the median, the precise middle value in the group (the 50<sup>th</sup> percentile).

## References

- Banerjee, A., E. Duflo, et al. (2010). "The Miracle of Microfinance? Evidence from a Randomized Evaluation." Unpublished working paper, MIT.
- Banerjee, A. V. and E. Duflo (2005). "Growth theory through the lens of development economics." Handbook of Economic Growth. P. Aghion and S. Durlauf. Amsterdam, Elsevier Press.
- Blattman, C., Fiala, N., Martinez, S. et al. (2011). "Employment Generation in Rural Africa: Mid-term Results from an Experimental Evaluation of the *Youth Opportunities Program* in Northern Uganda." Innovations for Poverty Action policy report.
- de Mel, S., D. J. McKenzie, et al. (2008). "Returns to Capital in Microenterprises: Evidence from a Field Experiment." Quarterly Journal of Economics 123(4): 1329-1372.
- Garikipati, S. (2008). "The Impact of Lending to Women on Household Vulnerability and Women's Empowerment: Evidence from India." World Development, 36(12), 2620-2642.
- McKenzie, David John and Woodruff, Christopher. "What Are We Learning from Business Training and Entrepreneurship Evaluations Around the Developing World? (September 1, 2012)." World Bank Policy Research Working Paper No. 6202.
- Siwale, J. and Ritchie, J. "Failure by Design: The Rise and Fall of a Microfinance Institution in Zambia – a case of Pride Zambia."
- Udry, C. and S. Anagol (2006). "The return to capital in Ghana." The American Economic Review 96(2): 388-393.
- Vyas, S & Watts, C. (2008) "How does economic empowerment affect women's risk of intimate partner violence in low and middle income countries? A systematic review of published evidence." Journal of International Development 21, 577–602.