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Expanding Opportunities

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Executive Summary

The PROFIT Financial Graduation Sub-Component, funded by the International Fund for Agricultural Development (IFAD) and the Government of Kenya (GOK), aims to raise the viability of smallholder livelihoods in Kenya using the BRAC-pioneered Graduation Approach. Through a sequenced set of interventions including an asset transfer, technical and life skills training, mentorship, consumption and savings support, the PROFIT Financial Graduation Sub-Component will enable vulnerable women and youth to build sustainable livelihoods. The interventions also aim to reduce risk aversion on supply and demand sides of financial sustainability. Ultimately, the goal of the program is to place vulnerable households on an upward trajectory out of ultra-poverty.

Since January 2017, with technical assistance from BRAC USA, the PROFIT Financial Graduation program was implemented by The BOMA Project and CARE International Kenya in Samburu and Kitui, respectively. Expanding Opportunities is conducting a quasi-experimental impact evaluation of the PROFIT Financial Graduation pilots by assessing changes in income, savings, food security, health, and confidence that can be reliably attributed to program activities. This report assesses progress at midline. The evaluation questions used to guide the evaluation are:

1. Do program activities, including consumption support, savings support, asset transfer, and skills training and coaching, provide increased livelihood sustainability among participant households?
2. Does participation in the program empower women and youth?
3. What are some of the contextual factors that may affect sustainability and scale-up of this and similar programs in the future?

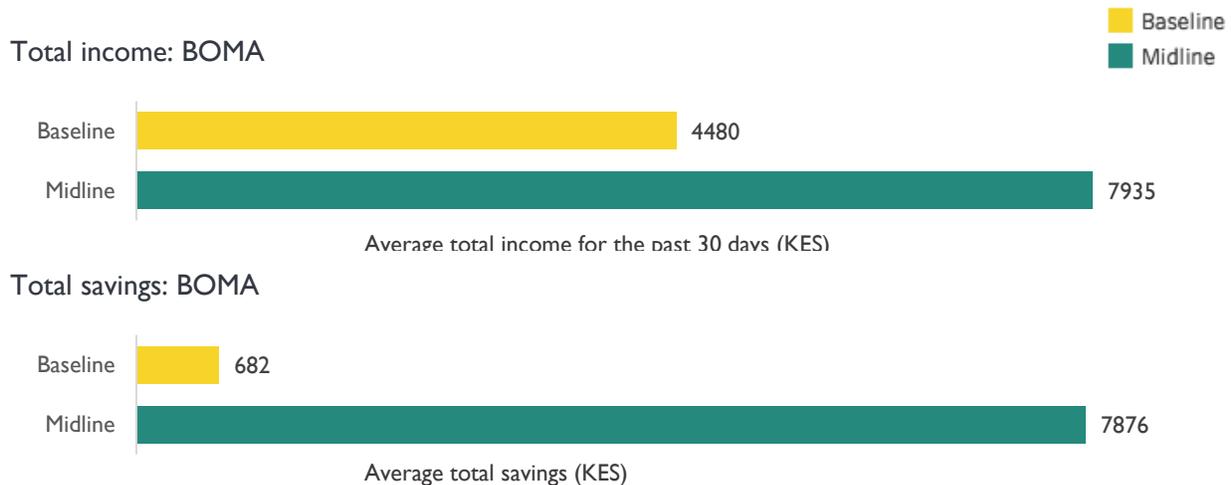
To address the evaluation questions, midline evaluation compared progress against the baseline (conducted in July 2017) of income, savings, empowerment, health treatment, and education. The midline evaluation explored the project's impacts through midline surveys/monitoring data, Focus Group Discussions (FGDs), and Key Informant Interviews (KIIs). Midline surveys and monitoring representatively sampled 59% of the baselined PROFIT participants in Samburu and 53% in Kitui. Comparison groups were included in the baseline and will be included in the endline, but were omitted for the purposes of the midline, which focused on formative findings. The midline survey compared a subsection of baseline questions designed to measure PROFIT Financial Graduation impact. We also conducted 14 Focus Group Discussions (FGDs) and nine Key Informant Interviews (KIIs) in Samburu District, and 21 Focus Group Discussions (FGDs) and 10 Key Informant Interviews (KIIs) in Kitui District. FGDs were conducted with PROFIT Graduation participants and focused on ascertaining the mechanisms for program impact among participants of PROFIT's Graduation Pilot. KIIs were conducted with governmental, non-governmental, and private business stakeholders and were designed to situate the Pilot's impact within the broader context of decision-making and economics in the region.

While the evaluation covers two locations – Samburu and Kitui Counties – it does not make a comparison between the two pilots as there are great differences in context, Graduation interventions, and evaluation instruments. The evaluation aims to show the impacts of the Graduation approach in different settings when adapted for the local context.

In this report, we summarize the results from midline data, FGDs, and KIIs. As presented below, PROFIT Financial Graduation has, in a short period, drastically improved the lives of women respondents in both pilots. Baseline levels of income, savings, and empowerment indicators like confidence and decision-making were among the lowest in Kenya, according to comparison with country and district-level data. Midline levels were improved in all three areas. The effects were felt mainly through the impact of sustained income and training on participants' confidence. In turn, the confidence led to more risk-taking in business, better relationships within and external to the family, and more social mobility among the community's most vulnerable individuals and households.

BOMA's PROFIT Financial Graduation:

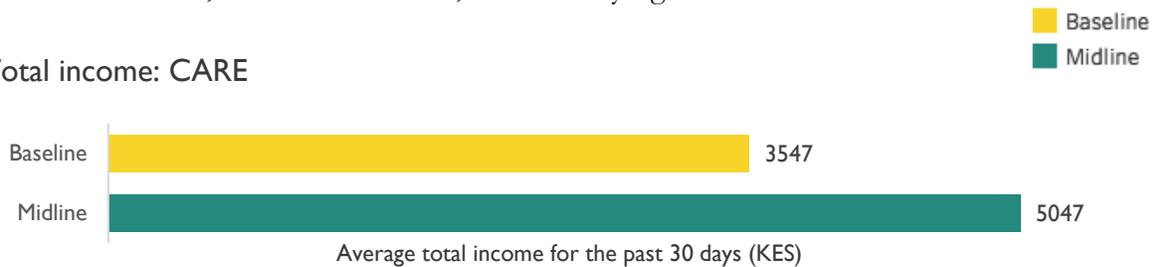
- The increase in household income between baseline and midline was 3,455 KES and the difference was statistically significant.
- By midline monitoring, BOMA business values averaged 51,604 KES, nearly 17,000 KES over their initial values. As one KII respondent stated, “On market day, you will see so many women doing business from grassroots, and they started with nothing.”
- Evidence from the quantitative analysis suggests that group businesses provided more income diversity by an average of one source per household, and thus resilience in the case of shocks to members, than individual businesses.
- Savings were also statistically significantly higher at midline compared to baseline, with households at midline saving an average of 7,194 KES more than at baseline.
- Women’s empowerment, measured by decision-making (increase of 7 percentage points), leadership (increase of 10 percentage points), and local committee membership (increase of 3 percentage points), grew significantly between baseline and midline in all indicators.
- 26% more households were treating water at midline compared to baseline, a statistically significant difference.
- Secondary-school age school enrollment increased significantly over baseline, from 76% enrolled to 88% enrolled.



CARE's PROFIT Financial Graduation:

- Incomes were 1,426 KES higher at midline compared to baseline, on average, a statistically significant difference.
- Savings were significantly higher at midline compared to baseline, with households at midline saving an average of 7,272 KES more than they could at baseline.
- Empowerment, measured by decision-making, leadership, and local committee membership, increased significantly between baseline and midline in all indicators, by an average of eight percentage points in each index.
- Household food security grew from 71% of households who were eating two meals per day at baseline, to 100% at midline, a statistically significant difference.

Total income: CARE



Group Savings: CARE



For both CARE and BOMA PROFIT Financial Graduation models, qualitative data helped to triangulate results and explored pathways of attribution to PROFIT Financial Graduation for the midline evaluation. Findings from FGDs and KIIs in both sites suggested that, just as in other Graduation programs, small-to-medium effect sizes in terms of income and savings were compounded in terms of confidence and empowerment¹. That is, small changes in income and savings appeared to lead to large gains in confidence, due to regular support from the Graduation program, the meaningfulness of income increase, and the ability of participants to take on new economic, political, and social roles in their surrounding communities. According to FGDs and findings from other Graduation programs, one of the greatest determinants of Graduation success is the level of vulnerability at the start of the program². These findings and those of other vulnerability reduction programs suggest that even among the ultra poor, variation persists, and the most vulnerable of the “ultra poor” may require more support than their co-participants.

For sustained success, according to analysis of FGD and KII responses, both organizations will need to plan carefully during the final months of the program so that:

- The most vulnerable participants have the support they need to reach Graduation benchmarks
- Expectations about what will happen once the program ends are communicated clearly and frequently
- Areas of training highlighted in this report and in monitoring data, such as group dynamics and investment/other financial skills, are targeted intensively
- Partnerships with other programs, such as the GoK’s NHIF and agriculture or business-based NGO programs are explored and deepened
- Participants continue to be connected with services in the region to help them, especially in terms of business decision-making

The endline will explore levels of attribution using baseline-to-endline change data from comparison groups, that is, people not exposed to PROFIT Financial Graduation.

¹ See: Halder, S. R., & Mosley, P. (2004). Working with the ultra-poor: learning from BRAC experiences. *Journal of International Development*, 16(3), 387-406.

² See: Matin, I., & Hulme, D. (2003). Programs for the Poorest: Learning from the IGVGD Program in Bangladesh. *World development*, 31(3), 647-665; Matin, I., Rabbani, M., & Sulaiman, M. (2008). Crafting a graduation pathway for the ultra poor: lessons and evidence from a BRAC programme.

Background on PROFIT Financial Graduation Interventions

Graduation activities and strategies aim to increase sustainable livelihoods among women and youth in high-poverty areas of the Arid and Semi-Arid Lands (ASAL) regions of Kitui and Samburu counties. The BOMA Project and CARE International are implementing partners, with BRAC USA providing technical assistance. The BOMA Project is implementing Graduation interventions targeting women in Samburu, while CARE International's Graduation interventions target women and youth in Kitui. Both programs are based on the BRAC-pioneered Graduation model, which has core components that include consumption support, savings support, asset transfer, skills training, coaching, and health support.

BOMA has been implementing a women-focused financial graduation program in Marsabit and Samburu counties for ten years. For this pilot, BOMA included a comparison of group and individual graduation approaches. PROFIT Financial Graduation was the first graduation implementation experience for CARE's programming. The focus of CARE's implementation was on enhancing and supporting informal vocational skills of ultra-poor youth and women and linking those skills to related livelihoods. The primary goal for both pilots is to enable households to build sustainable livelihoods and resilience.

Locally selected and village-based Mentors (BOMA) and Community-Based Trainers (CBTs-CARE) support intervention activities by providing technical and life skills training and intensive mentorship, so that targeted communities can increase overall wellbeing³. Asset/cash transfers, savings group formation, leadership committee formation, and enrollment in the national health insurance scheme are also essential elements of programming in both sites, and directly relate to the topics encompassed by the Graduation Criteria which defines successful impact of Graduation programming. BRAC USA has worked with both organisations to develop criteria pertinent to the interventions and regions of programming. Six evaluation criteria (discussed below), expanding on Graduation criteria guidelines, are used to guide the impact evaluation:

- Food security
- Livelihoods
- Resilience
- Agency and self-confidence
- Health
- Human capital

³ For the purposes of this report, we define "wellbeing" following the social science conception of wellness, which incorporates the social, economic, and infrastructural influences on and implications for individual and group health. See, for example, Nyman, C., & Nilsén, Å. (2016). Perspectives on health and well-being in social sciences. *International Journal of Qualitative Studies on Health and Well-being*, 11:1, DOI: 10.3402/qhw.v11.31468

BOMA geography, interventions, and criteria

Samburu ranks as one of the four poorest counties in Kenya with an overall poverty rate of 76% in 2015-16, up from 73% in 2005-2006⁴. Samburu is also one of the six counties with registered food poverty among more than half of the population (60.1%). People in Samburu County make their living primarily through managing livestock, in part due to the region's aridity and conditions unfavorable to agricultural livelihoods. Livestock management requires long hours and semi-nomadic movements across the landscape.

BOMA interventions targeted 1,600 female participants. 1,350 of these participants were enrolled using a group business type (a three-person business model pioneered by BOMA in Northern Kenya) and 250 participants using the individual business type (one-woman businesses). The interventions included a 350 USD cash transfer for livelihoods, a mobile phone with access to Mpesa, a consumption stipend of 15 USD per month for six months, bi-weekly financial skills and health and social messaging (malaria, WASH, nutrition, maternal and child health, HIV, alcohol and drug abuse, family planning, gender empowerment, drought management, child education, and child marriage), mentoring through local mentors, savings groups, national health insurance enrollment, and locational committee establishment to reaffirm and triangulate messaging.

BOMA tracks participant progress against the following Graduation criteria:

- Household members had two meals a day in the past week
- No child goes to bed without an evening meal in the past week
- Value of business is 25% higher than total conditional cash transfer
- Participant can access two sources of income
- Participant is a member of a savings group (with a formal constitution, credit, and loan protocols), has access to credit, and has a minimum of KES 800 in savings.
- Participant has greater awareness of family planning

In addition, BOMA tracks school attendance among primary school-eligible girls and, if possible, monitor health-seeking as potential arenas in which positive impacts as a result of the intervention are desired.

Expanding Opportunities, under the leadership of Dr. Sanders, collaborated with BOMA to select participants, design and refine the survey tool, and train and supervise data collectors in midline efforts.

⁴ Kenya National Bureau of Statistics. (2018). *Basic report on well-being in Kenya: based on Kenya integrated household budget survey, 2015/16*. Kenya National Bureau of Statistics.

CARE geography, interventions, and criteria

CARE interventions focus on Mwingi North in Kitui District, where the semi-arid climate means that most inhabitants practice mixed cultivation with some livestock management. Water lines are long there, but the region is known for the sweetness of their green grams, or mung beans. CARE's interventions include a 350 USD asset package (in-kind asset transfer), technical and financial skills training, mobile phone with access to Mpesa, 15 USD per month for six months consumption stipend, social and health messaging (same as BOMA), savings groups, enrollment in national health insurance, and establishment of a social integration committee to reinforce social and health messaging.

Similar to BOMA, CARE established the following Graduation criteria to track participant progress:

- Household had access to 2 meals a day the past week
- Participants have achieved at least a 25% growth of the asset received
- Participant has at least two sources of income (e.g., farming, business), one of which is from the asset received.
- Participant is a member of a Village Savings Group, saving regularly, and has accumulated savings of KES 8,000 within the Graduation cycle.
- Participant demonstrates greater awareness of hygiene practices.

Like BOMA, CARE intends to monitor school attendance and health-seeking for anticipated impacts, although they recognize that full-scale change may not be possible within the scope of the program.

Expanding Opportunities, under the leadership of Dr. Sanders, led enumerator training, selection, survey design, and baseline administration.

The PROFIT Graduation interventions are sequenced from March 2017 to March 2019 and are harmonized across pilot locations. They include targeting, asset transfer, technical training, consumption stipend, health support, savings support, mentoring and life skills training, and social integration, as summarized in the table below.

Intervention	BOMA	CARE
Targeting	Participatory rural appraisal (PRA) followed by verification survey	Participatory rural appraisal (PRA) followed by verification survey
Asset Transfer	35,000 Ksh (350 USD) in cash to group and individual businesses	35,000 Ksh (350 USD) in-kind transfer based on asset options finalized by rapid livelihood assessment
Technical Training	Business skills (pricing, recordkeeping, marketing), financial literacy, and asset management	Business skills (pricing, recordkeeping, marketing), financial literacy, and asset management
Consumption Stipend	1,500 Ksh (15 USD) per month for 6 months (transferred through M-pesa)	1,500 Ksh (15 USD) per month for 6 months (transferred through M-pesa)
Health Support	Free enrollment in National Hospital Insurance Fund for 18 months	Free enrollment in National Hospital Insurance Fund for 18 months
Savings Support	Savings groups (10-15 participants per group) that meet on a weekly basis	Savings groups (15-20 participants per group) that meet on a weekly/bi-weekly basis depending on the constitution of the group
Mentoring & Life Skills Training	Bi-weekly home visits by mentors who discuss social and health issues including maternal and child health, WASH, HIV/AIDS, alcohol and drug abuse, gender empowerment, etc.	Bi-weekly home visits by mentors who discuss social and health issues including maternal and child health, WASH, HIV/AIDS, alcohol and drug abuse, gender empowerment, etc.
Social Integration	Support from BOMA Locational Committee and linkages to market and the County Social Services office and other relevant government and non-governmental services and resources	Linkages to local government and non-government services

Methodology

PROFIT Financial Graduation targeted the ultra poor in Kenya's arid and semi-arid lands. Both programs used participatory rural appraisal to identify the most vulnerable households in Kitui and Samburu Districts. Household verification surveys then verified and further limited the program sample to the poorest and most vulnerable households and participants. PROFIT Financial Graduation was then implemented in both regions beginning in July of 2017, following an initial baseline survey.

As detailed above, PROFIT Financial Graduation took on different forms in Samburu and Kitui Districts due to the varying context and target population. The methodologies also differed as a result of intervention variation. Expanding Opportunities worked with BOMA and CARE separately to design two midline evaluations that would provide for each implementing partner's formative and summative needs. The following tools were used to assess progress toward Graduation as defined by PROFIT Financial Graduation targets in each area.

Midline survey and monitoring

In Samburu, the midline survey sampled 421 baselined participants, which were matched to baseline participants by unique identification numbers. 134 1-person (32%) and 287 3-person (68%) businesses were represented in the baselined-midline matched, treated sample. Certain metrics from midline monitoring were used for comparison, namely savings from BOMA savings groups and income from BOMA businesses. We also matched 111 WASH observations, all in individual businesses, to the baseline. For all other baseline-matched indicators, we relied on the midline tool (please see the Appendix for the midline tool and statistical details).

In Kitui, midline monitoring data collected in September, 2018 were used to compare baseline-to-midline measurements in the areas of income, income diversity, food security, savings, savings diversity, and decision-making. We matched responses for 316 participants at baseline and midline (53% of the baselined beneficiary sample).

For both groups, comparison of means were conducted among the paired sample using paired-sample t-tests. For comparisons of individual and group businesses in the BOMA data, we tested equality of means and used the appropriate independent samples T-tests according to the results.

Focus Group Discussions (FGDs)

Focus Group Discussion questions were designed to understand mechanisms of change and reflect areas of change not being captured by monitoring data, e.g. empowerment. In 14 Focus Group Discussions, the BOMA team consisted of one facilitator, one note-taker, and one translator (see Appendix for the FGD tool). We conducted two focus groups per day for seven days during the beginning of August, 2018 and spoke with roughly 105 female Graduation participants. The groups

were homogenous on the basis of business group type. Expanding Opportunities designed the questionnaire in concert with the BOMA evaluation team, and refined it during training with the data collectors, Treasury representatives, and BOMA staff. The FGDs resulted in 11 finished transcripts (three incomplete transcripts were dropped from analysis), representing seven 1-person and four 3-person business groups. The FGD results therefore underrepresent three-person businesses and should be interpreted with caution.

In 21 Focus Group Discussions, the CARE team consisted of one facilitator, one note-taker, and, where necessary for the supervisor, one translator. We conducted three focus groups per day for seven days during the last week of July, 2018. The groups were homogenous on the basis of age (above or below age 35) and gender. In total, we conducted 8 FGDs with 11-16 participants each with women 35 or under, 4 with men 35 or under, and 5 with women over 35 years of age, roughly approximating the beneficiary demographics. In sum, we spoke with 225 men and women with an average of 11 participants per focus group. Most FGDs were conducted in Kamba language. Expanding Opportunities designed the questionnaire in concert with the CARE leadership team, and refined it during training with the data collectors, Treasury representatives, and CARE staff (see Appendix). Because questions were open-ended, even small-n responses carry a lot of weight in the following sections.

Analysis was conducted by the lead researcher and a research assistant in Dedoose, qualitative analysis software available online. Question-level codes were preset, and the research team refined within-question coding using codes generated from the data. After the generated coding scheme was applied, we checked inter-rater reliability and recoded according to refinements suggested by the inter-rater process. After a final check, we developed definitions for the coding scheme and generated frequencies for responses coded at question level and for the “children” of those codes. We also explored and recorded representative quotes suggestive of the larger sample’s sentiments for certain codes.

Key Informant Interviews (KIIs)

Key Informant Interviews were designed to understand the broader contexts of impact for PROFIT Financial Graduation, such as sustaining links among organizations and built infrastructure in the project regions. In nine KIIs in Samburu, we spoke with a Member of County Assembly (MCA), an NGO collaborator, two Village Administrators, a religious leader, a village Chief, a Social Development Officer, an NHIF administrator, and a National Drought Management Authority member who had experience with the Pilot. In 10 KIIs in Kitui, we spoke with one CARE leader, two private distributors who supply goods to CARE participants for income-generating activities (including one beneficiary distributor), two clinical officers at a private hospital and one district-level NHIF representative, one member of the social development office, two county extension officers in cereals and livestock, and two administrators at village and district levels who had experience with the PROFIT Financial Graduation.

Introduction to findings

According to FGD and KII respondents in both locations, increased socioeconomic status is one of the greatest benefits of the Graduation program. That is, a little seems to have gone a long way in making low-income young men and women feel more secure and confident in their ability to perform social roles and make ends meet. In FGDs, benefits of the Graduation program were cited throughout the discussions, but the two questions generating the richest responses about overall impacts were, “How has PROFIT impacted your lives?”, and “What changes in your homes have been brought about by some aspect of PROFIT financial graduation?” FGD responses made it clear that financial benefits alone did not bring about the changes they were experiencing. The program also directly affected many other areas of participants’ lives, including their relationships with their spouses and other family members, their overall level of health, social roles, education and abilities, and even community politics.

According to FGD respondents, some of the topics associated with PROFIT Financial Graduation’s biggest impacts were in areas targeted by the project: income, savings, and assets; health; education; and female empowerment (“independence,” “skills,” “social activity,” “experience,” and “social role” changes were the most frequently mentioned in Focus Group Discussions). In KIIs, key informants also highlighted the role of income, savings, assets, skills, and knowledge provided by implementing partners in empowering women to greater independence and unity as their biggest impacts. Ongoing training and support from the Community Based Trainers (CBTs) was central to these impacts, according to FGD respondents in Kitui. In KIIs, CARE staff dedication to the people of Kitui was also frequently mentioned and thought to be the foundation of the program’s positive effects in Kitui.

In the following sections, we explore the impacts of the PROFIT program through CARE’s and BOMA’s implemented pilots. We analyzed quantitative data from midline surveys and monitoring data, and qualitative data from midline FGDs and KIIs to present findings. Wherever we mention significance throughout the report, we are referring to statistical significance.

BOMA – PROFIT Financial Graduation

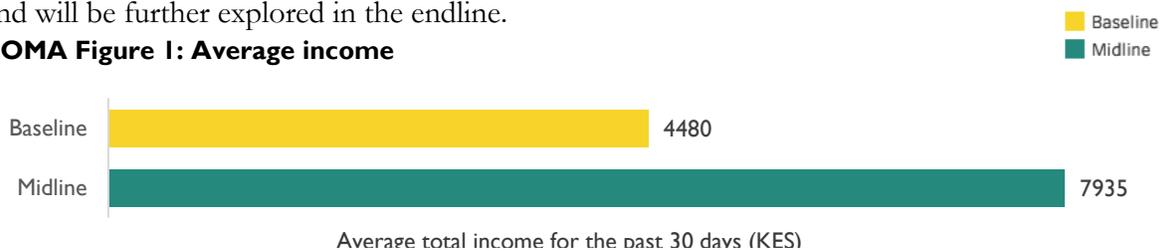
Income

Midline monitoring data provided descriptive information about BOMA business values and the amount of income and credit provided from BOMA businesses as of July, 2018, while baseline and midline surveys collected 30-day income recall data to show how income differed at the beginning and midline of the project.

Income over the past 30 days

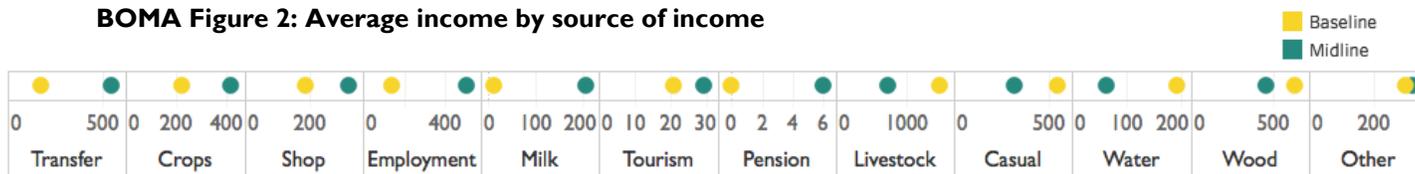
To compare with baseline income, we totaled the amount earned in the past 30 days (June-to-July, 2018) per household from an exhaustive list of income activities, including BOMA businesses (midline only) and non-BOMA income (see income by source below). Incomes were higher at midline ($p=.00$) by an average of 6,891 KES for individual businesses and 1,851 KES for group businesses because of profit-sharing among three-person businesses, and incomes remained significantly higher at midline. Differences between group and individual businesses are inconclusive and will be further explored in the endline.

BOMA Figure 1: Average income



Disaggregating by non-BOMA income sources, we find that incomes were higher in terms of employment income, tourism, cash transfers from non-BOMA governmental/non-governmental organisations, crop sales, and pension. Midline respondents in BOMA’s project accessed roughly two more income sources per household compared to baseline, a difference which was statistically significant. Three-person business people accessed, on average, one more income source per household than 1-person business people.

BOMA Figure 2: Average income by source of income



Over 95% of BOMA’s original participants still ran active businesses at the time of the midline, and FGD responses and quantitative results suggest that businesses contributed substantially to overall incomes. The biggest challenges respondents faced were associated with competing markets, particularly among individual business owners, and participants raising goats for sale and shop-owners, a problem the BOMA team was aware of and addressing with a market study and through mentorship.

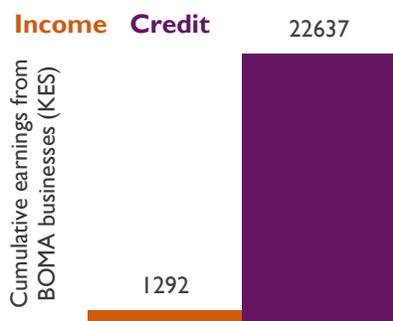
BOMA Livestock businesses accounted for 68% of primary businesses, with shops (“duka or kiosk”) comprising another 28%. Of the 220 respondents (62%) running secondary businesses, shop, livestock, and chicken businesses topped the list.

In FGD discussions about income, income generating activities (IGAs) took primacy as important Graduation benefits for respondents. Forty percent of responses suggested increasing socioeconomic status was the most important benefit of BOMA’s Graduation Pilot, and about half (46%) of those responses attributed gains to IGAs. The next-frequent socioeconomic status-related response also attributed benefits of Graduation to lifestyle elements such as schooling or acquisition of property (24% of responses), suggesting some income is being redirected to future planning in a way that is novel to most participants. Incomes had also grown to the extent that, in FGDs, 37 respondents suggested their businesses were meeting the gap left by the consumption stipend, while just 17 respondents had or thought they would dip into their profits substantially to cover consumption needs.

BOMA Business values

By midline monitoring in July, 2018, BOMA business values averaged 51,604 KES (an increase of 16,604 KES over the original asset transfer values of 35,000 KES, on average). Individual business values were higher than group business values by 4,091 KES, a difference that was statistically significant ($p=.01$). At midline (between June and July, 2018), BOMA businesses gained an average of 1,890 KES in value, with individual businesses growing more than group businesses ($p=.00$).

BOMA Figure 3: Business earnings



Cumulative income from BOMA businesses

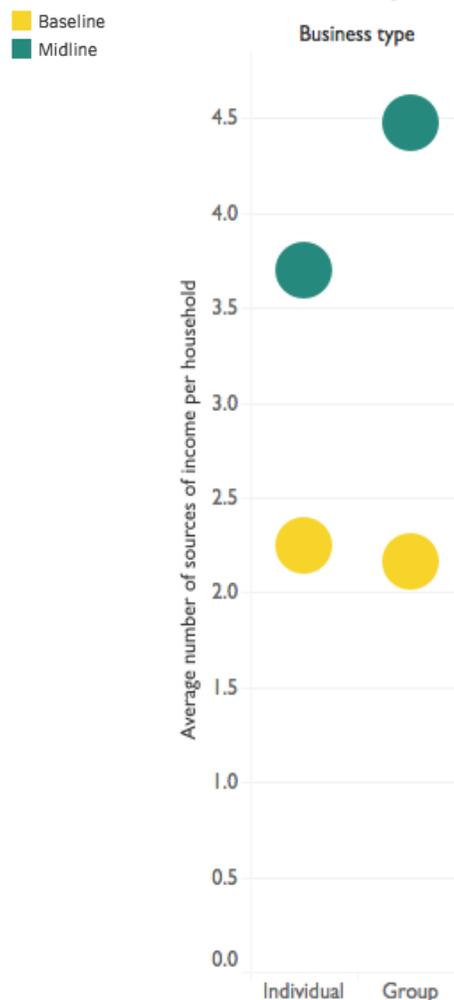
On average, at midline of PROFIT Financial Graduation, participants had taken out 1292 KES in income and 22,637 KES in credit, with individual business participants taking more in both categories⁵. BOMA staff are exploring the preference for credit, which likely has to do with the direct household benefits of most BOMA business products, e.g. foodstuffs and household items. The chart (left) shows BOMA business income and credit taken as of July, 2018.

⁵ Individual business participants took 34,530 KES in credit and 2,647 KES in income, while group business participants took 17,084 in credit and 660 KES in income, on average. However, comparisons between individual and group businesses should be made cautiously because of differences in asset transfer and geography associated with group and individual businesses. The endline will explore differences more definitively.

Income resiliency

An important implication for sustained income in rural areas, income diversity protects people from shocks in one market sector versus another⁶. Three-person businesses had an advantage over individual businesses in terms of income diversity, most likely because co-managing the businesses provided group members the opportunity to diversify. All BOMA participants were accessing statistically significantly more income sources at midline compared to baseline ($p=.00$; see number of income sources per business type in the chart, right), particularly in terms of income from shops, crop production, milk production, employment, and non-BOMA cash transfers (97% of the latter were GoK social protections).

BOMA Figure 4: Income sources by business group type



⁶ See: Ersado, L. (2006). *Income diversification in Zimbabwe: Welfare implications from urban and rural areas*. The World Bank.

Savings

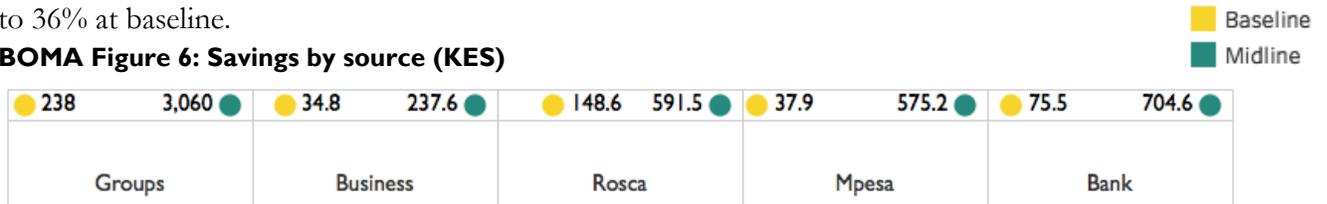
Totalling household savings from available sources, including BOMA savings groups, other savings groups, ROSCA, Mpesa, banks, microloan institutions, and other forms of savings, we compared savings in total between baseline and midline. Savings were drastically higher in the midline in every category ($p=.00$), with few differences between individual and group businesses.

BOMA Figure 5: Average total savings per household



Unsurprisingly, the highest increases in savings were through savings groups. However, even excluding BOMA savings groups, midline participants saved more than at baseline in every category. One hundred percent of respondents had some amount in formal savings in the midline, compared to 36% at baseline.

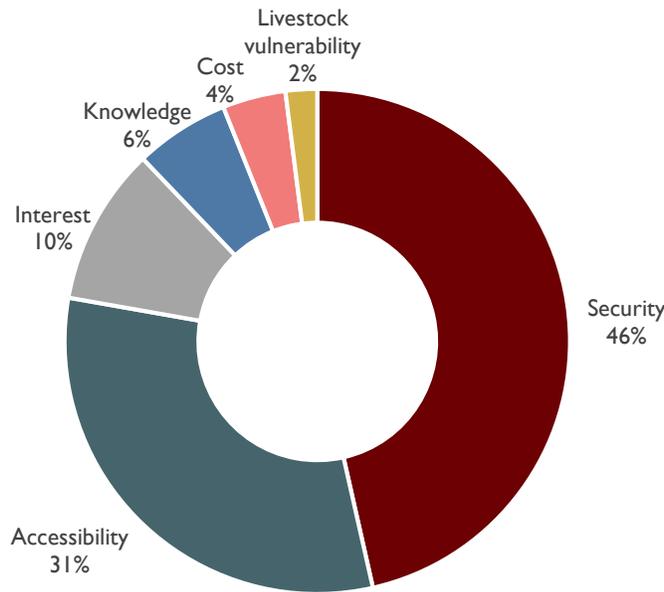
BOMA Figure 6: Savings by source (KES)



Since being provided phones via the PROFIT Pilot, attitudes and preferences about where to keep cash had also experienced shifts, according to FGD results in which “Mpesa” was the most frequently cited category of savings. However, “home” and “in livestock” were still popular categories of saving.

The top reason Mpesa was gaining popularity – security – was repeated frequently in FGDs, often accompanied by, “safe... even from my husband!” Women expressed delight at this independence and autonomy, although the second most popular reason for saving in a certain way was “accessibility”, which sometimes had to be balanced with security due to the lack of nearby Mpesa tellers. In the chart below, FGD responses were coded under the listed topics and the percentage of total responses to this question in each category is given.

BOMA Figure 7: Reasons to keep savings in Mpesa

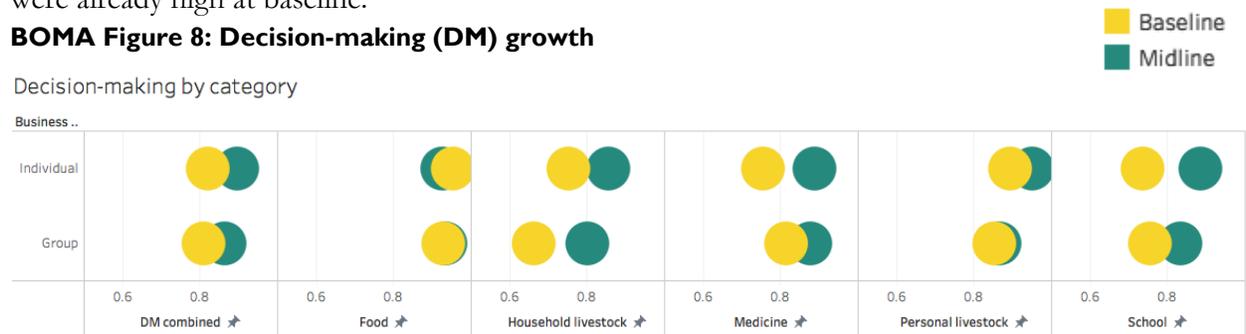


“security” was most often associated with Mpesa and group businesses, “accessibility” with saving in the home and individual businesses, “interest” with saving in banks, “knowledge” with both Mpesa and banks, “inexpensive” with multiple kinds of saving, and “livestock vulnerability” with non-livestock forms of saving.

Empowerment

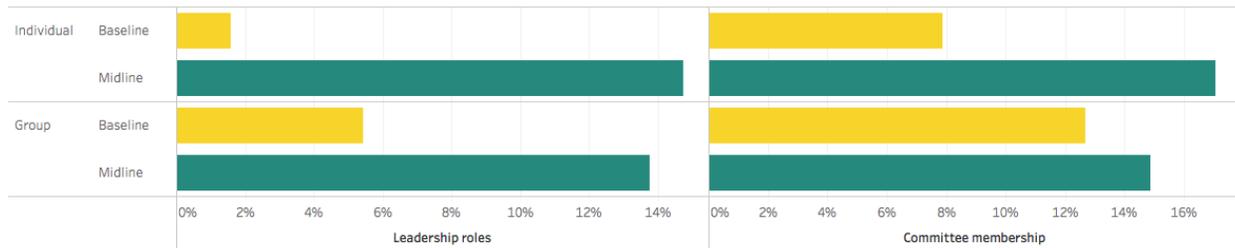
In baseline and midline surveys in Samburu, we measured decision-making on a Likert scale with 1 = “no decision-making power” and 5 = “complete decision-making power” with regard to several topic areas. In the charts below, “joint decision-making” “most decision-making” and “complete decision-making” were recoded as “1” while “partial decision-making” and “no decision-making” were recoded as “0”. In baseline-midline comparisons, all differences in decision-making indicators were significant in the expected direction ($p=.00$), i.e. respondents had more decision-making power at midline compared to baseline, with the exception of food and personal livestock buying which were already high at baseline.

BOMA Figure 8: Decision-making (DM) growth



Similarly, committee membership and occupation of leadership roles were statistically significantly higher among the midline respondents than at baseline, especially in terms of leadership ($p=.00$). Of committee members, 55% of participants were on church or women’s committees at midline, 28% were on school committees, and less than 10% were on environmental, relief, health, or other committees, respectively.

BOMA Figure 9: Leadership and committee role assumption



FGDs and KIIs further detailed the empowerment brought to women via BOMA’s Graduation efforts. One KII respondent, a senior official at the district level, said, jokingly, “we fear they [women] will take our [parliament] seats!” Other local leaders said, “now we call them [for meetings] and they are open-minded about it” and the program “has removed all shyness” among participants. Local development committees and leadership topped that list of female membership, but female FGD respondents also referred to subtler forms of empowerment, such as people listening to them when they speak, in general (“voice”), gender equality in the home and in public, the newfound ability/permission to conduct business, heightened status as a result of having money, expanded social roles to spheres outside the home, and belief shifts concerning the right to own property as ways in which Graduation had changed their lives.

Health

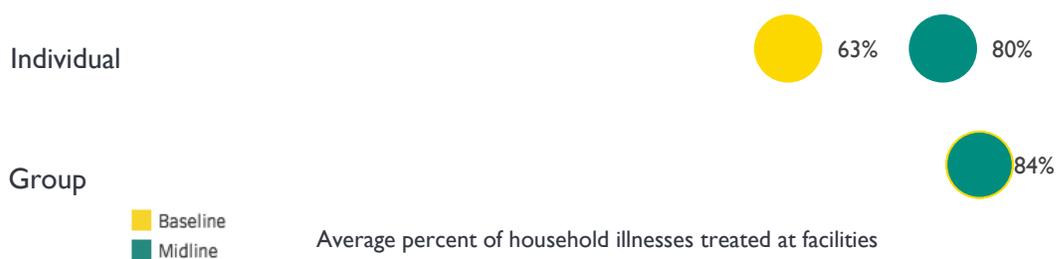
Details about health were captured in the baseline-midline surveys and monitoring data in terms of water treatment, treatment-seeking, illness prevalence, and NHIF use, while FGDs explored, in particular, opinions and challenges associated with use of WASH technologies and family planning, and experiences with the healthcare system.

According to analysis of 111 baseline-to-midline-monitoring matched respondents, **water treatment** has significantly increased since baseline. At baseline, only 51% of the sub-sample were treating water using filtration, boiling, or Waterguard, while 77% were treating drinking water in these ways at midline (probability of accepting null hypothesis = .00).

FGD respondents were knowledgeable about and interested in water treatment but competing priorities and the inaccessibility of treatments kept them from implementing treatments measures 100% of the time. Among the two treatment methods available, Waterguard (chlorine) and boiling, boiling was more popular due to the costliness and difficulty in accessing Waterguard.

Illness levels were significantly higher at midline, but the increases were likely due to seasonal effects, since the midline occurred during the cold/wet season. For each individual of the household who was ill in the past year, midline respondents recalled where the individual was treated. At the aggregate level there were no significant differences in **treatment-seeking** between baseline and midline. Group business respondents had high treatment-seeking at both baseline and midline, so there was little room for growth. However, there is some evidence that respondents from 1-person groups ($p=.05$), especially in Lodokejek, and both business groups in Wamba were seeking treatment at government and private facilities in greater numbers compared to baseline.

BOMA Figure 10: Treatment at health facilities



NHIF enrollment increased from under 2% at baseline to 97% at midline due to NHIF's role as a PROFIT component. In addition, 99 of 297 respondents (33%) had used NHIF while seeking treatment. Differences were statistically significant despite few hospitals accrediting NHIF cards in the region.

In FGDs, those who had used NHIF were pleased that they did not have to pay, suggesting the insurance provided them some peace of mind they did not previously have.

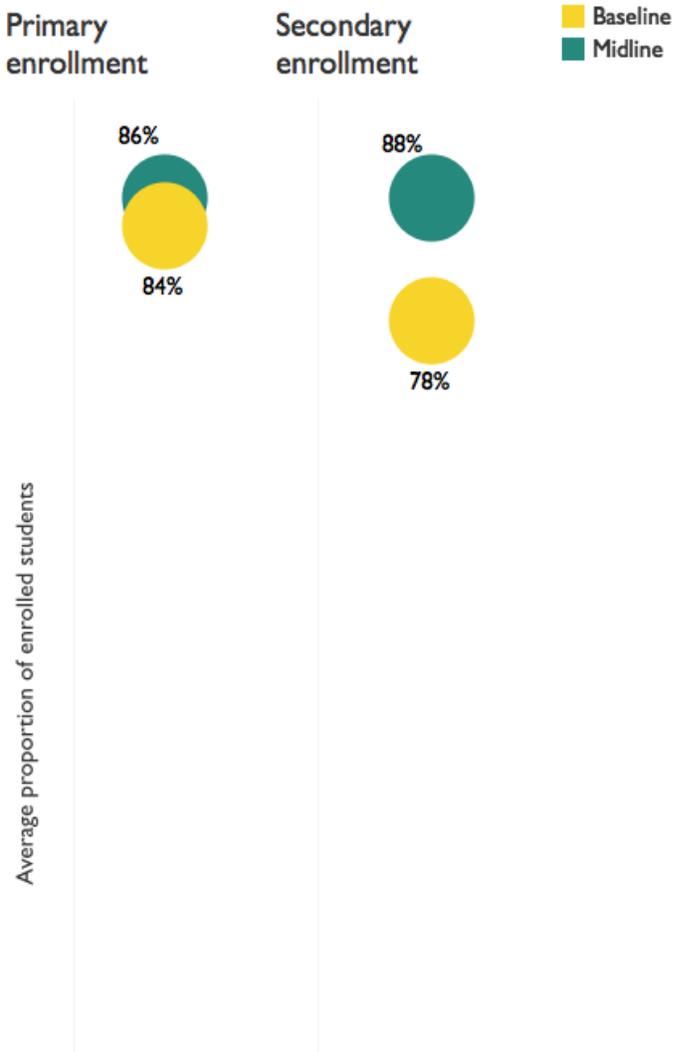
Differences in **latrine construction/use** between baseline and midline monitoring were not statistically significant. Among FGD respondents who did not have latrines, participants explained, the main challenges were skills and labour for building a high quality latrine, and the materials with which to build them. Also, some respondents are nomadic, so latrines are incompatible with their lifestyle. Attitude and knowledge barriers also accounted for a small but substantial proportion of responses.

Family planning proved difficult to converse about in a group setting, especially since there were a number of male FGD facilitators. Conversations revolved around barriers to family planning use, the types of family planning used, and reasons why people use them. Rumours about family planning side effects, like the risk of weakness to the woman or disability and death for future births, deterred a number of women from using family planning, as did male and female beliefs about the morality or benefits of family planning (or lack thereof). Injections were the most common type used, presumably because they tend to be more available in the region, and they are relatively discreet forms of family planning. The women who used family planning used it for limiting, delaying, and spacing births.

Education

In midline surveys, BOMA data collectors collected information about each primary-aged school child in the household. Differences between baseline and midline were in the expected direction and significant. In particular, more secondary-aged children were enrolled in school at midline than at baseline ($p = .01$). Similarly, more primary-aged children were enrolled in school at midline than baseline ($p = .06$).

BOMA Figure 11: Proportion of children enrolled in school



Lessons learned – BOMA

Income and savings

BOMA's PROFIT Financial Graduation participants gained significant income and savings through the program. Many FGD respondents proclaimed, "we started with nothing, and now we are businesswomen!" For all businesses, according to FGDs and KIIs, training in business skills was integral to the program's success, especially given extremely low literacy levels and baseline knowledge of business management among participants.

BOMA businesses

BOMA is currently addressing the issue of competition between similar businesses, e.g. small shops, in areas with low population density. They are integrating a market assessment into the project design to inform diversification opportunities, market linkages, and seasonality factors for participants. These interventions aim to tailor mentorship to business needs and to ensure that businesses begin from a strong market position. They also support BOMA's efforts to help business women diversify beyond livestock markets.

Longitudinal analysis should assess the long-term trade-offs between individual and group businesses in light of social capital effects, quantified differences, and community perceptions of the two models over time. Evidence from the quantitative analysis suggests that group businesses provided more income diversity and thus resilience in the case of shocks to members than individual businesses, but individual businesses grew faster prior to midline measurement than group businesses. Group business members also had more cash on hand from their secondary businesses than individual business members (4027 KES as opposed to 1312 KES, on average; $p=.00$). FGD responses to questions about challenges suggested that group businesses may face management challenges, but individual businesses were more difficult to get started and keep afloat. BOMA continues to address conflict resolution and capacity building for business group management in its mentorship training. A future evaluation could examine effectiveness of this training focus on the group model.

Health: Although health emerged as a major area of impact in FGDs, quantitative data are not yet reflecting full health benefits as a result of the programming. This could be for a variety of reasons, including the seasonal differences in data collection times, the diffuse areas of focus for health in this project (food security, family planning, WASH, NHIF, and treatment-seeking), the remote nature of most homes in Samburu such that the health infrastructure has not yet caught up to the needs of the population, and/or the short time period in which measurements were taken, such that more time is needed before all the benefits accrue. In the FGD questions concerning health as a major BOMA impact (see "Introduction" above), diet was mentioned by six individuals, four of whom said they were able to buy more and higher quality food now because they had money, not primarily due to health training. Otherwise, only a few people mentioned the following health components of the project: nutrition information, water treatment knowledge, disease prevention

knowledge, cleanliness knowledge, family planning information, and NHIF cards. Responses suggest the need to further follow up the training curriculum to ensure better apprehension of the concepts.

For family planning in an area where wealth may be counted in children as well as livestock, BOMA leadership recognizes that it is essential for interventions to target men as well as women. They have identified additional interventions targeting men to be part of an overall, gender-focused approach. Already this is occurring through BOMA's mediation on certain conflicts and through spousal education.

Empowerment

FGDs and KIIs unanimously credited PROFIT Financial Graduation with social changes resulting from participants' sense of empowerment, and participants' quantitative data showed significant improvement in women's decision-making power over the course of the program. One KII respondent suggested some men may feel they can relinquish family responsibilities when their wives start earning money, a sentiment that is being targeted at the community as well as individual level. BOMA's responsiveness to gender dynamics was essential to its success, as in BOMA's response to gendered politics resulting from female ownership and control of assets. Continuing to involve men, local community members, and leaders in this process emerged as a key to sustained social change in KIIs and FGDs. BOMA will continue to look at integrating gender mainstreaming across its interventions, including approaches to increase the effectiveness of health messaging as a key to overall empowerment.

KIIs also revealed that local leadership should be chosen carefully, since some leaders have different ideas about who should be targeted for certain interventions. Political agendas, as BOMA discovered and addressed, need to be evaluated and accounted for before taking local leaders on board. Finally, integrating local, women leaders (who tend to invest heavily in the program as mentors), according to KII respondents, ensures higher degrees of success in mediating persistent attitudes about women's involvement in business ventures.

Evaluation

For the results in which large differences were identified by ward, it will be important to discuss among the team and find ways to determine whether location type, business type, or some other factor is influencing the variation, and what strategies are available to address areas of lesser impact.

Sustainability

In other Graduation programs⁷, an important aspect of sustained Graduation gains has involved appropriate mechanisms for managing expectations around Graduation itself. The most positive

⁷ See: Asrat, L. & Bigirimana, A. (2018) "Uncovering Conditions for Sustained Outcomes: Findings from USAID/Uganda SCORE Project Ex-Post Evaluation". A presentation at the American Evaluation Association annual meeting in Cleveland, OH, Thursday, November 1, 2018.

impacts have been sustained among participants whose understanding of Graduation was most complete. That is, successful participants had more knowledge about what would happen once they “graduated” and had a plan for how they could sustain business and quality of life gains after they were no longer receiving the program’s support.

BOMA is already addressing the sustainability question in a number of ways. First, BOMA is facilitating linkages that are critical to supporting program sustainability. BOMA has helped savings groups register with the Ministry of Social Services that enabled participants to open bank accounts and expand access to finance, including GOK funds (i.e. the Women’s Enterprise Fund, AFC). Second, BOMA is continuing to support business differentiation and address competition issues. BOMA has been helping program participants engaged in livestock trade to aggregate their businesses. This helps them bypass intermediaries and sell directly in terminal markets for higher prices.

Facilitation of key market linkages and building women’s capacity to pursue new market opportunities will lay a solid foundation for sustainability of program impact. To support this effort, BOMA is preparing to undertake a market assessment in the first quarter of 2019 to identify additional high potential business opportunities, new linkages with suppliers and buyers, better understand seasonality issues, etc. These recommendations will feed into mentorship to participants and inform future project design. In addition, BOMA has also begun training mentors on how to communicate openly and honestly with participants regarding what will happen after March 2019 when the Graduation program comes to an end.

CARE – PROFIT Financial Graduation

Income

According to results from the September midline monitoring data, beneficiary households' incomes were statistically significantly higher at midline compared to baseline. Households had on average 1,426 KES more at midline than at baseline, approximately the amount of their consumption stipend (which had already been discontinued for several months at the time of measurement). In short, their business ventures were compensating for their consumption needs. CARE business values at midline averaged 30,006 KES. However, 89 participants showed business net worth levels below what they started with, suggesting some “income” is coming out of businesses and threatening business statuses. Ongoing mentorship will need to address this, targeted area of financial decision-making.

CARE Figure 1: Household income over the past 30 days



FGD respondents in Kitui who mentioned socioeconomic status increases as a primary benefit of the Graduation program referred primarily to the assets they had obtained, especially goats (n=8 respondents) and other animals (n=3 respondents). Livestock preference persisted despite monitoring data showing that higher incomes were achieved through non-livestock businesses like shops and hotels. The gap can be explained by the costs of investment and risks that may accompany non-livestock livelihoods⁸.

Eleven respondents also mentioned socioeconomic benefits as savings brought by Graduation training about how to plan for the future. Mentions of “other” contributors to socioeconomic benefits in the chart below included reference to the program’s stipend, decrease in debt, better housing and food security, and obtaining employment. Respondents mentioned budgeting on its own and in reference to savings or income obtained from businesses as contributors to socioeconomic wellbeing. Knowing how to use and obtain loans was also an important benefit for two respondents.

⁸ Sumberg, J., Gilbert, E., & Blackie, M. (2004). Income Diversity, Technology Choice and Agricultural Research Policy in Sub-Saharan Africa. *Development Policy Review*, 22(2), 131-146.

CARE Figure 2: Types of socioeconomic benefits according to FGD responses (frequencies)



FGD responses to the question about change in the home further explained that women now own property which has raised their position in the home (n=1), or that their earning has resulted in cost-sharing within the household, thus putting women on even ground with their husbands and with more bargaining power than they previously had, especially when their income benefits the family (n=5). Diversity of income sources will be explored quantitatively in the endline.

Savings

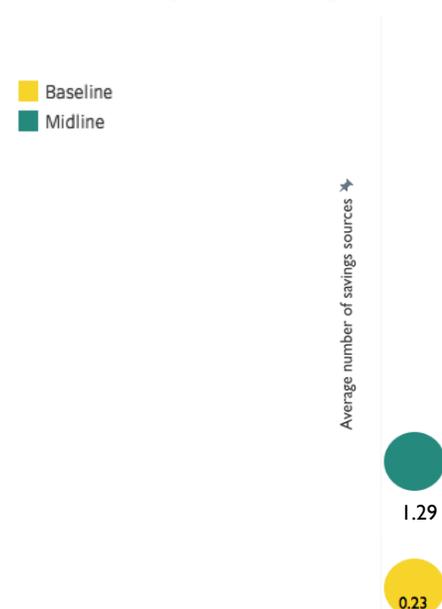
At midline measurement in September, participants had on average 7,341 KES more in group savings than at baseline. According to FGDs, their main motivations to save were school fees and planning for the future.

CARE Figure 3: Group savings



CARE’s PROFIT Graduation participants were also keeping their savings in more places, on average, including Mpesa, savings groups, banks, and at home for accessible use (see chart, right). Kitui FGD respondents cited their ability to access many things they never had before as a result of PROFIT Financial Graduation, including communications because of CARE phones (n=3), loans through their savings groups (n=2), healthcare through NHIF (n=1), and even treatment for livestock diseases through CARE-facilitated links to the veterinary extension office (n=1), all of which contributed to their increasing sense of resilience in the face of shocks.

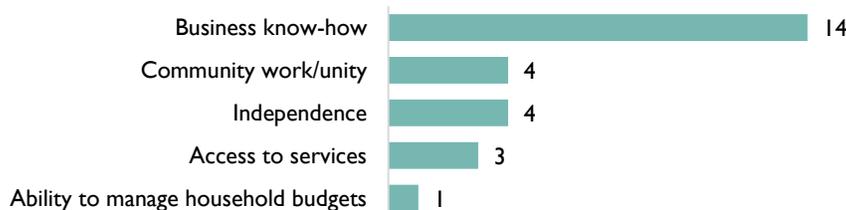
CARE Figure 4: Savings sources



Empowerment

One hundred percent of CARE participants had access to joint or total decision-making power at midline, compared to 92% at baseline, a difference that was statistically significant. Indeed, in every Focus Group in Kitui, changing social roles were cited as an important impact of the program, which was unavailable prior to PROFIT Financial Graduation. With money and training, FGD respondents said, women were able to enter spheres to which they had no prior access, including “how to work and get money”, hiring labourers, “plan[ning] for activities”, “business management”, livestock handling, “how to get involved in savings groups” and generally “not just stay[ing] at home” (see chart below for categories of social role change referenced by respondents in FGDs).

CARE Figure 5: Benefits in the form of changing gender norms⁹ in FGD responses (frequencies)



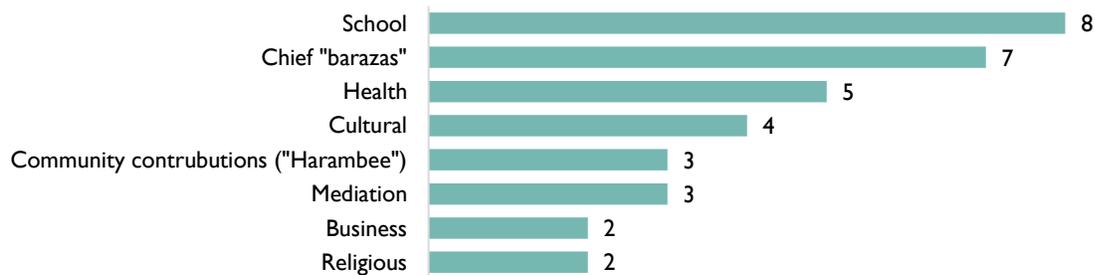
In terms of changes within the home, respondents mentioned, first and foremost, that they now have respect from their husbands (n=9) and a say in **decision-making within the home** since they are contributing to the family income (n=9). In their own words, “Women are now called ‘inyaa ngeria’ [mother of somebody] when before they were called by their names at home because before they brought nothing at home.” Additionally, six respondents mentioned that there is more *mutual* respect between men and women, and two mentioned that there is more accord due to the gracious way with which women are handling their elevated income and status.

Respondents mentioned **CARE business training** explicitly as the mechanism by which the social changes they mentioned were brought about (n=13), including “...how to uplift one another in the groups”. That the program had brought different women together was another, very impactful component of the program, whereby economic efforts also “brought women together in the community,” adding to their public visibility, independence, and political clout.

⁹ Typically in this area, women are not expected to own property or manage household assets or businesses, according to KII and FGD respondents.

In an FGD question designed to understand impacts on women’s **decision-making** explicitly, we asked about changes in community participation resulting from Graduation activity and received very positive responses involving female CARE beneficiary roles in meetings, giving advice, public speaking, and assuming chairperson roles in local committees. The chart below provides the frequency with each type of meeting was cited as an example of novel female participation.

CARE Figure 6: Types of meetings attended by females (frequencies)



Respondents who explained their responses about women in decision-making suggested that having education, being an active member of the community, having money to contribute to community projects, and skills to teach others were the primary mechanisms by which they could assume leadership roles. Interestingly, the older women and male FGDs also emphasized morality, using words like “well-disciplined”, “trustworthy”, “respected”, and “church-going” to describe women who should assume leadership roles.

Beyond decision making, we sought to understand social role benefits in terms of **property ownership** with the question, “Can women own property?” This led to wonderful discussions in the FGDs. Positive responses occurred three times as frequently as negative responses, but there were conditions. Some respondents agreed that women who are responsible for property are considered owners, even if they do not own the property. Others suggested only certain types of women can own property, i.e. women whose husbands are not performing their social roles adequately or who have acquiesced to their ownership of property, if the woman herself paid for the property, if she is a good manager of property, or if she is educated.

Both men and women in the FGDs also placed conditions on the types of property women can/should own, though not all of them. In short, small animals and land were largely thought to be the purview of women, while large livestock and other assets traditionally deemed men’s property were less popular responses.

However, many forms of typically male property were named by respondents as being women's property. Although ownership of people, like "husbands" and "children" were only mentioned in jest, the themes like these, brought out by the FGDs, suggest that some women may be experiencing a dramatic shift in their roles in the home and in public spheres as a result of the Graduation program.

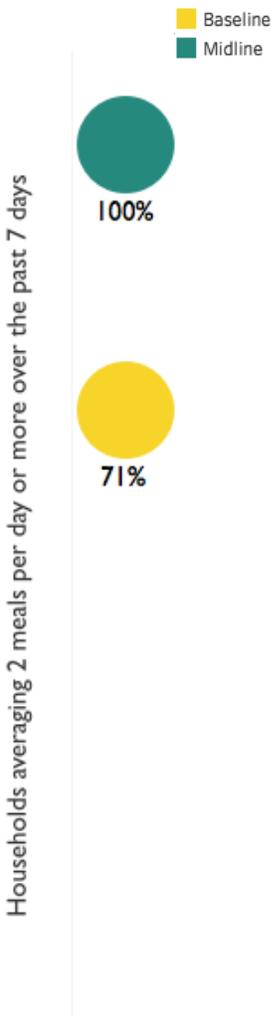
Exploring reference to "**community work/unity**" as a benefit of Graduation, FGD responses made it clear that newfound friendships, social mobility, and community progress went hand-in-hand with Graduation. Respondents mentioned girl-child advocacy in early marriage and education (n=4), women's ability to voice opinions (n=3), community unity and participation (n=3), and social role modelling (n=2) as benefits they had experienced. Also, in response to the question about changes within the home, women cited their ability to mingle with other people/women outside the home, when they had previously felt confined to the home (n=6).

Food security and health

Food security

Between baseline and midline, household food security increased from 71% who were able to meet the target of two meals per day, to 100%, a difference that was statistically significant (see chart below).

CARE Figure 7:
Household food security



According to responses about healthy and unhealthy foods, FGD respondents prioritized nutrients, energy, and preparation techniques in that order when choosing healthy foods. The “Types of food” they listed highlighted local crops like green grams and beans (n=11), local grains (sorghum, millet, maize; n=12), proteins (meat, milk, and eggs; n=4), and fruits and vegetables (n=2). They also discussed the importance of having diversity in their meals, despite the fact that there is little diversity in the examples they provided except in the categories of beans and grains.

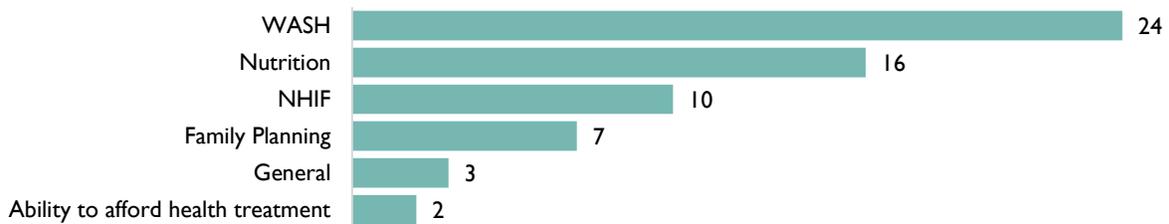
In KIIs, regional decision-makers expressed the opinion that food security had improved for participants, based on their interactions with them over local supply chain transactions. Especially, they said, having the consumption stipend filled the gap for some participants as they got their businesses up and running.

About 70% of the FGD respondents who provided information about their **use of the consumption stipend** were able to invest part of it for future use or lifestyle improvement, according to the lessons they had learned in CARE training. Most of these respondents bought chickens who then multiplied, and/or paid school fees for children. However, 30% relied on the stipend to meet basic household consumption needs. Among women aged 35 or above, this percentage was higher, at 40%.

General health

Health benefits were primary among the Graduation benefits FGD respondents listed. These benefits accrued primarily due to training by the CBTs, although two respondents had martialled assets or financial benefits from the businesses towards household health (see chart below for types of health benefits). Among 24 respondents who mentioned improvements as a result of Graduation WASH messaging as a benefit, increased compound cleanliness and the prevalence of latrines were most frequently mentioned, followed by water treatment and disease prevention practices. The 16 responses pertaining to “nutrition” in the chart below referred to knowledge and resources for balanced and diverse diets enabled by participation in Graduation.

CARE Figure 8: Types of health benefits (frequencies)



Education

When respondents mentioned education in reference to Graduation impacts, they referred to both the ability to educate their children (n=6) and their own increased knowledge of business (n=5). Even though primary and secondary education is heavily subsidized in Kenya, quality education and education for all is clearly still new to members of Kitui county. The newfound ability to obtain quality education or education for more family members was brought up in three focus group discussions in response to the question about Graduation’s primary impacts.

Lessons learned – CARE

Training: According to KIIs, FGDs, and monitoring data, participants have benefited greatly from CARE’s business skills training. Although learning is ongoing, baseline knowledge was so low that the need for additional support persists. For instance, if participants are taking too much money out of their businesses, they may need to be made aware more clearly of the potential consequences of such actions in terms of their business sustainability. CARE is working on reinforcing business skills to participants during their group and individual meetings.

CBT Support: CBTs played an instrumental role in managing conflict at home and in the community brought by women earners in a patriarchal context. CARE’s resolution management was an important aspect of social change, according to FGDs. CARE’s assessment of the need for intervention based on beneficiary feedback was crucial to success, as was their inclusion of local leaders in mediation.

Monitoring: Success and failure definitions related to businesses will be important to solidify. Midline evaluation revealed that the definition of a “failed” business was somewhat complex, so attempts should be made to define the nuances of business failure and develop strategies for how CARE will support failing and flagging businesses.

Evaluation: A better understanding of the population will come through higher-quality data collection. In terms of data collection, precision and consistency are key. CARE has recently hired an M&E consultant, which will provide much-needed support to the one-person M&E team operating in Kitui at baseline and midline.

We recommend expanding the evaluation department and making sure at least one person has substantial M&E training prior to beginning the endline, and experience with some quantitative data analysis software like SPSS or Stata. Further, we recommend the implementation of tablet-based data collection for the endline, since this will help control data errors. CARE is currently using KOBO but has experienced system errors. To be ready for endline, CARE should make a final decision about which program they wish to run and practice endline implementation using monitoring data collection opportunities to address issues. This will require watchful and consistent data quality monitoring.

Sustainability: In other Graduation programs¹⁰, an important aspect of sustained Graduation gains has involved appropriate mechanisms for managing expectations around what it means to “Graduate”. The most positive impacts have been sustained among participants whose

¹⁰ See: Asrat, L. & Bigirimana, A. (2018) “Uncovering Conditions for Sustained Outcomes: Findings from USAID/Uganda SCORE Project Ex-Post Evaluation”. A presentation at the American Evaluation Association annual meeting in Cleveland, OH, Thursday, November 1, 2018.

understanding of Graduation was most complete. That is, successful participants had more knowledge about what would happen once they “graduated” and had a plan for how they could sustain business and quality of life gains after they were no longer receiving the program’s support.

CARE’s facilitation of business registration with the Social Development Office in Mwingi and liaisons with NHIF and other supply chain offices at the district level have provided some of the linkages with government organisations that will sustain the program’s impact beyond the life of the program. CARE is also establishing eight Poverty Reduction Committees to support participants’ access to government services at the national and county levels. In addition, CARE has forged technical service partnerships with CARITAS Kitui (livestock) and KCEP KRAL (cereals) so that participants will continue receiving support for their businesses through extension services after PROFIT Financial Graduation closes. Financial partnerships with banks active in Kitui (KCB, Equity, and Cooperative), and commercial partnerships that facilitate participant links with local livestock markets, will also continue to support participants.

CARE is currently training CBTs on how to communicate openly and honestly with participants regarding what will happen after March 2019 when the Graduation program comes to an end.

Conclusions

In assessing the two pilot projects for PROFIT Financial Graduation, what stands out is the empowerment piece. The asset transfer and technical training were particularly revolutionary for PROFIT Financial Graduation participants, where women's roles previously dictated strict confinement to home spheres of influence in most of the project area. The various forms of training accompanying the asset transfer provided women the necessary confidence to affect change. In addition, through constant follow-up and monitoring, implementing partners were able to address the unintended consequences of programming on gender dynamics, like when husbands tried to usurp assets or phones, and these issues were addressed in real time and with the involvement of communities and community leaders. Thus, the follow-up and mentorship aspects of the program were critical in tracking participant progress and ensuring positive outcomes related to financial and social gains.

Also discussed above, health programming as part of PROFIT Financial Graduation may have outpaced the local health infrastructure. In future programming, infrastructural upgrades may need to accompany health messaging and NHIF adoption. This will require **strategic partnership across governmental and non-governmental sectors**.

Savings was the area of largest quantified impact, according to midline data. In FGDs, respondents attributed this to increased access to phones (and M-pesa) and the financial literacy training they received at the onset of the program. Through this training, respondents learned how to set some money aside to plan for the future. This demonstrates the effectiveness of integrating financial literacy training early on in the program.

In terms of sustainability, PROFIT may consider developing **sustainability criteria to accompany the sector criteria** already developed for this program. What does sustained Graduation look like six months or a year after Graduation? How can cross-sectional measurements better reflect long-term vulnerability, i.e. what are the conditions for decreasing vulnerability over time? This will require that the **learning from PROFIT Financial Graduation is shared with all stakeholders**, especially at the community level. Finally, the more **Graduation can be integrated with other organisations doing social mobilisation, financial interventions, health, and livelihood programming**, the more successful it will be, and it will avoid duplication of efforts.

Appendix

BOMA Midline Survey

Q1 Boma No.

Q2 Participant Name

Q3 Location

Q4 Survey Type

Q5 Date of Interview:

Q6 Name of Enumerator

Q7 About the SOLI Survey

The purpose of this survey is to understand your life right now, one year after joining BOMA. As part of this survey I will be asking you many questions about your household. I want to remind you that your answers will not affect any future benefits you receive from BOMA or any other organization. It is critical for you to be honest so that we can see how you are faring and how the programme can be improved. All of the answer you give are confidential and will not be shared with anyone. Do you agree to participate in this survey?

Q8 Has consent been given?

Q9 About the SOLI Survey

First, I will be asking you some general questions about yourself and your household so we can understand your current situation. Please tell me the truth and not the answers you think I want to hear. This is important so we can understand the current situation in your household incase you do not understand a question please let me know and I can repeat it in another way that is easier to understand.

Q11 Date of Birth

Q12 Languages Spoken

S3 Section A Other language

Q13 Describe other Language you can speak.

Q14 Marital status

Q15 Does the participant have a health insurance card? (NHIF card)

Q16 Does the participant have a mobile phone?

Q17 Does the participant have MPESA or other mobile money service like Airtel Money?

Q18 (If Yes) How often do you use mpesa or another mobile money service?

Q19 What do you use mpesa or another mobile money service for? Options

Q20 Are you a member of any committees?

Q21 If other, list other committee(s)

Q22 Do you hold any other leadership positions?

Q23 If yes, please describe

Q24 Comments about Basic Information

- Q25 How many female adults (married and/or over 18 years) are in the household?
Include all female Household members who live in the participant's household and share the same budget. Include household members currently in Boarding Schools but exclude older children who are married and have their own household and budget
- Q26 How many male adults (Including Married and Unmarried morans) are in your household?
Include all male Household members who live in the participant's household and share the same budget. Include household members currently in Boarding Schools but exclude older children who are married and have their own household and budget
- Q27 How many members of your household got ill in the past year?
- Q28 How many members of your household were treated at the Dispensary/Health Center/Hospital in the past year?
- Q29 How many of the treatments were paid for by NHIF cards?
- Q30 Are there any children that are currently part of your household?
- Q31 If yes, how many children in the household: Enter number of children in text box below.
- Q32 First Name
- Q33 Gender
- Q34 Age in YEARS
- Q35 Is the participant the biological mother of this child?
- Q36 Is this child enrolled in school?
- Q37 If in school, what class is s/he in?
- Q38 If not in school, what is the reason?
- Q39 Enter other reason child is not in school
- Q41 What was the illness that the child had? Options
- Q40. Did this child have any illness in th...
- Q42 Describe the other illness
- Q43 Was the child treated for this illness? (including by an herbalist or traditional healer)
- Q44 Where was the child treated?
- Q46 Comments about Section B Household Composition
- Q47 In this section I will be asking you about if your household earns money from different sources and how much your household earned from each source in the past month. The reason I am asking these questions is to understand how your income changes as a result of being in BOMA. As I mentioned earlier, the answers that you give will not be shared with anyone and will not affect your participation in BOMA. We understand that many participants will have income from multiple sources, so if your household earns money from any source, please do be honest and say “Yes” when I ask if your household earns income from that source. This information is confidential and will not be shared with anyone. You have already been accepted into BOMA so the responses you give will not affect any benefits you receive in anyway.
- Q48 In the past year, has your household regularly received income from Non-Boma Duka, kiosk or canteen
- Q49 How much did your household receive from a duka, kiosk or canteen in the last 30 days?

Q50 In the past year, has your household regularly received income from Non-Boma business selling livestock

Q51 How much did your household earn from selling livestock in the last 30 days?

Q52 In the past year, has your household regularly received income from Selling milk?

Q53 How much did your household earn from selling milk in the last 30 days?

Show this when any of the following conditions are satisfied Q52. In the past year, has your household... Is Yes

Required

Q54 In the past year, has your household regularly received income from Burning charcoal/Collecting charwood ?

Q55 How much did your household earn from selling charcoal / firewood in the last 30 days?

Q56 In the past year, has your household regularly received income from Fetching water?

Q57 How much did your household earn from fetching water in the last 30 days?

Q58 In the past year, has your household regularly received income from Tourism?

Q59 How much did your household earn from tourism in the last 30 days?

Q61 How much did your household earn from pension in the last 30 days?

Q62 In the past year, has your household regularly received income from Selling crops? Includes

Q64 In the past year, has your household regularly received income from Casual labor (e.g. fetching stones, washing clothes, fencing, cleaning, planting, child care, construction)

Q65 How much did your household earn from casual labor in the last 30 days?

Q66 In the past year, has your household regularly received income from Formal employment & salaried labor (e.g. askari)

Q67 Describe formal employment & salaried labor work:

Q68 How much did your household earn from employment/salaried labor in the last 30 days?

Q69 In the past year, has your household regularly received income from Cash Transfer (gov't & other NGO's – NOT LIVESTOCK TRANSFER

Q70 List the organization that gave you a cash transfer:

Q71 How much did your household earn from cash transfer in the last 30 days?

Q73 In the last 30 days, how much money did this household receive from persons not currently living in your household (KSH)

Q72 Are there any adults who do not live in the household but who contribute to the household either by sending goods (box) or money?

Q74 Does your household earn income from any other sources?

Q75 List all other sources from which your household earns income:

Q76 How much did your household earn from other sources of income in the last 30 days?

Q77 Comments about Section C Household Income

Q78 In this section I will be asking you about how much savings you have in different locations.

The reason we are asking these questions is to see how your savings change as a result of participating in BOMA. This information will be kept private and will not be shared with anyone.

Every amount of savings is important, even if it is 100 Ksh. Don't think you need to have a large amount of money for it to be considered savings.

Q79 Do you have cash savings (money set aside for food emergencies, medical emergencies, school fees or future purchases)?

Q80 Amount of cash savings:

Q81 Do you have savings with a Non BOMA savings group

Q82 Amount of savings with a Non BOMA savings group

Q83 Do you have savings with a ROSCA/Merrygoround?

Q84 Amount of savings with ROSCA/Merrygoround:

Q85 Do you have savings with MPESA (or similar)? Ensure that money on mpesa is savings and not for current use

Q86 Amount of savings with MPESA (or similar):

Q87 Do you have savings with a bank?

Q88 Amount of savings with a bank:

Q89 Do you have savings with your own (non BOMA) business?

Q90 Amount of savings with your own business:

Q91. Do you have any savings that have been given as loans to other people and has not yet been repaid

Q92 Amount of savings that have been given as loans to other people and has not yet been repaid

Q93 Do you have any other savings?

Q94 Amount of other savings:

Q95 In the past one year have you used your savings to purchase anything?

Q96 What did you purchase with your savings?

Q97 Comments about Section E -Savings

Q98 Instructions:

The purpose of this section is to understand who makes different decisions in your household and see if there are changes in who makes the decisions as a result of being in BOMA and having your own business. For each question, please tell me if the decision is made by yourself, your husband or if it is made together by both yourself and your husband. Please be honest so we can understand how decisions are made in your household.

Q99 To what extent are you involved in household decisions regarding buying food for the household?

Q100 To what extent are you involved in household decisions regarding paying for children's medical expenses?

Q101 To what extent are you involved in household decisions regarding paying for children's school fees?

Q102 To what extent are you involved in household decisions regarding purchasing livestock for yourself?

Q103 To what extent are you involved in household decisions regarding purchasing livestock for the whole family or household?

- Q104 Comments about Section F Household Decision Making
- Q105 What methods have you heard of to delay/avoid pregnancy?
- Q106 What are the other ways that the participant has heard of to delay/avoid early pregnancy?
- Q107 Where can someone get information on the methods to delay or avoid pregnancy?
- Q108 Describe other source of information on methods to delay or avoid pregnancy
- Q109 Have you ever used any method to delay/avoid pregnancy?
- Q110 What methods have you used to delay/avoid pregnancy?
- Q111 Describe other method you are using to avoid pregnancy
- Q112 What is your husband's/ partner's opinion on the use of the method?
- Q113 What are the reasons for disapproval
- Q114 Comments about Section I Family Planning

BOMA FGD tool

Number of participants:

Date: _____

Ward/Location/Village: _____

Circle one: 1-person; 3-person

CONSENT

Resilience/Savings

1. What are the best ways to keep savings?
 - a. Why?

2. Are you keeping savings? Why (or why not)? [Probe: For example, do women or men save more? Why? How are savings shared within the household? Under what conditions are savings shared or not?]
 - a. How have abilities to save changed since BOMA began?

3. If BOMA teaches more about savings, credit, or loans topics in the future, are there any topics you want to know more about? (Which topics do you wish you had more information about?)

Consumption Stipend/Asset growth/livelihood:

Intro: you got money for business and for consumption...

4. How did you use the 1500 KES you received from BOMA for 6 months? Please explain the result of each use – how helpful was it?

5. Now that you are not receiving the consumption stipend, how has that affected you?

6. What's the best way of receiving money in this area? Why?

7. How is it working with Mpesa?

8. In what ways has the use of mobile phones affected your business?

9. In what ways has growing your business been difficult?

10. What are some of the challenges you face working in a one-person/three-person business group? How do you try to overcome them?
 - a. What is your opinion of the other model compared to yours?

Agency/confidence/GBV

11. Has women's role in village meetings changed in the past year?

Health

12. What do people say about the messages shared by the mentors about WASH and latrines? What about latrines?

13. Raise hands - How many have latrines? How did that happen? How many are using them? Please explain.

a. What are some of the challenges to constructing/using a latrine? Who cleans it?

14. What are some of the challenges to treating drinking water?

15. How many use Family Planning? What kinds? Why?

a. Are there any challenges?

16. Do the local hospital facilities and services meet your healthcare needs? Why or why not?

17. How many have used the NHIF card when you or someone in your household was sick? What was your opinion of it, or Why not? (Probe for changes in: treatment locations, types of treatment, types of medications, etc.)

General

18. What have been the biggest benefits of the BOMA project in this area? Why?

a. If BOMA were to expand this program, how should they improve it?

19. Since the onset of the Graduation program, have there been any changes in how men and women relate to one another inside the home? How so? Probe for end results of each response.

20. Do you have any questions for us about this midline evaluation?

CARE FGD Tool

Date:

Facilitator:

Note-taker:

Number of participants: _____

Zone/Location/Village: _____

Circle one: young women, old women, young men

Consent:

CARE is conducting Focus Groups to understand how the Graduation program is progressing at midline. Today's focus group will take up to 2 hours. We will take notes and record the interview with your permission, but we will do everything we can to protect your privacy. Your participation is completely voluntary.

Do you consent to the Focus Group and note-taking?

All participants: Yes No

Do you consent to be audio-recorded?

All participants: Yes No

FGDs

Food security/livelihoods, assets

1. a. What is the definition of a "meal" in your community?

b. What makes a healthy meal versus an unhealthy meal? *What quality? What quantity?*
2. a. What is different about poor households, compared to wealthy households in this area?

What do wealthy households have a lot of that poor households do not? Are poor households larger/smaller than others? Do they contain older/younger people? Single moms? Are they from certain tribes? Do they have a different history?

b. What kinds of other factors affect poverty? *Probe for: seasons, weather, household characteristics, community economy:*

3. How do people in this community cope with poverty?

What do people do to address food insecurity, low income, inability to save, etc? (How) do people help them?

Resilience

4. In what situations are savings in banks and savings groups most beneficial?

Why? In what situations is saving for healthcare most beneficial?

5. What helps people in this community to be able to save?

Probe for seasonal conditions, economic trends, income earning strategies, etc.

6. Who should take a loan in this community?

Why?

7. If someone doesn't repay a loan, why don't they?

Probe for ability, attitude, etc.

Agency/confidence

8. Should women have control of their own property?

- a. Why?

9. In your community, what kinds of women own property nowadays? *Probe for young/ old; single/ married/ widowed; educated/ non-educated, etc. Share examples of the property they own for each group.*

10. Are women in this community currently involved with decision-making about community affairs?

Which women are likely to be involved in school, local government (e.g. chief, MCA), land, roads, water rights decision-making?

11. Since the onset of the Graduation program, have there been any differences in how women participate in community development?

Explain how with help of examples, e.g. life skills learning, etc.

Health

12. What are some of the challenges to constructing a latrine? What are some of the challenges of using a latrine? What are the challenges of maintaining a latrine?
13. What are some of the challenges of treating drinking water?
14. What are some of the challenges to constructing stations and using/maintaining hand washing routines?
15. Do people in this community have confidence in local health facilities to care for their needs? Explain for either Yes/No answer.
16. What are some of the challenges associated with accessing appropriate medical care in this community?
 - a. What can community members do to make sure everyone has healthcare in the region?

General

17. Are some households experiencing the Graduation program differently than others? Please explain. *Probe for differences between successful CARE participants and unsuccessful CARE participants.*
18. How did you use the 1500 KES you received for 6 months? Why?
19. What changes have been brought about as a result of PROFIT programming? *For every response given, please probe for the source of that change, e.g. stipend, assets, health messaging, life skills, CBT visits, etc.*
If CARE were to implement this program elsewhere, how should they improve it?
20. What is the talk about CARE in this community?
21. Since the onset of the Graduation program, have there been any changes in how men and women relate to one another inside the home?
For example, is there more/less conflict? Do women experience more/less equality? Explain how with help of examples.
22. Do you have any questions about the midline evaluation for us?

KII Tool

Name and title of interviewee: _____

Ward/Location/Village: _____

KII Questions

Intro

1. Please describe the nature of your interactions with the PROFIT pilot?
2. With which types of people involved with PROFIT do you have the most frequent interactions?

Name and Title/Role in PROFIT: _____

3. Please rank the above (to the RIGHT of the name) in terms of FREQUENCY of interaction (1 = Most frequent). Please rank the above (to the LEFT of the name) in terms of IMPORTANCE of interaction (1 = Most important)

Resilience/Savings

4. What are your observations about people's attitudes towards savings in this community?
5. How have people's abilities to save changed since the start of the graduation program?

Food security

6. Has the number or frequency of hungry times in this community changed since the beginning of the project? How so?
7. Has hunger in this community been affected by the stipend, either during the stipend period or after it ended in April? In what ways?

Agency/confidence/GBV

8. Since the onset of the Graduation program, have there been any differences in how women participate in local decision-making? How so?

9. Have you been aware of any conflict between men and women since the beginning of the project?

Health

10. Is the local health system able to care for community members' needs? How so/not?

11. How has NHIF impacted the region?

12. What are some of the challenges associated with NHIF use in this community?

Asset growth/livelihood

13. Have the businesses affected family activities, income, or wellbeing in this community? In what ways?

14. What are the main challenges/barriers to someone growing their business in this community?

General

15. What are the biggest impacts of BOMA in this area?

16. What do people say about BOMA in your sector?

17. If BOMA implements in another area, what should they do differently?

BOMA tests and statistics

In the following, a “1” on the end of a variable name denotes baseline measurement, where a “2” denotes midline measurement.

Business value: total and 30-day change

```
. sum July_2018
```

Variable	Obs	Mean	Std. Dev.	Min	Max
July_2018	422	51604.62	14706.73	13150	151089

```
. bys group_type: sum July_2018
```

```
-----  
-> group_type = 1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
July_2018	135	54386.74	15481.3	20250	118000

```
-----  
-> group_type = 3
```

Variable	Obs	Mean	Std. Dev.	Min	Max
July_2018	287	50295.95	14167.43	13150	151089

30-day change:

Variable	Obs	Mean	Std. Dev.	Min	Max
bv30diff2	421	1889.767	7818.394	-34260	52200

Two-sample t test with unequal variances

```
-----  
Group | Obs Mean Std. Err. Std. Dev. [95% Conf. Interval]  
-----+-----  
1 | 135 5400.407 1095.571 12729.39 3233.558 7567.257
```

```

    3 |   287    251  136.9251  2319.659 -18.50878  520.5088
-----+-----
combined |   422  1898.322  380.2374  7811.08  1150.922  2645.723
-----+-----
diff |           5149.407  1104.095           2966.305  7332.509
-----+-----
diff = mean(1) - mean(3)                t = 4.6639
Ho: diff = 0                Satterthwaite's degrees of freedom = 138.203

Ha: diff < 0                Ha: diff != 0                Ha: diff > 0
Pr(T < t) = 1.0000        Pr(|T| > |t|) = 0.0000        Pr(T > t) = 0.0000

```

sdtest July_2018, by(group_type)

Variance ratio test

```

-----+-----
Group |  Obs   Mean  Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
    1 |   135  54386.74  1332.419   15481.3   51751.45  57022.03
    3 |   287  50295.95  836.2771   14167.43  48649.92  51941.99
-----+-----
combined |   422  51604.62  715.9122   14706.73  50197.41  53011.83
-----+-----
ratio = sd(1) / sd(3)                f = 1.1941
Ho: ratio = 1                degrees of freedom = 134, 286

Ha: ratio < 1                Ha: ratio != 1                Ha: ratio > 1
Pr(F < f) = 0.8900        2*Pr(F > f) = 0.2199        Pr(F > f) = 0.1100

```

. ttest July_2018, by(group_type)

Two-sample t test with equal variances

```

-----+-----
Group |  Obs   Mean  Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
    1 |   135  54386.74  1332.419   15481.3   51751.45  57022.03
    3 |   287  50295.95  836.2771   14167.43  48649.92  51941.99
-----+-----
combined |   422  51604.62  715.9122   14706.73  50197.41  53011.83

```

```

-----+-----
diff |      4090.786  1523.651      1095.855  7085.717
-----+-----
diff = mean(1) - mean(3)          t = 2.6849
Ho: diff = 0                      degrees of freedom = 420

Ha: diff < 0          Ha: diff != 0          Ha: diff > 0
Pr(T < t) = 0.9962    Pr(|T| > |t|) = 0.0075    Pr(T > t) = 0.0038

```

Total income and by business group income

ttest Tinc1==Tinc2

Paired t test

```

-----+-----
Variable |   Obs   Mean  Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
Tinc1 |   421  4480.109  218.4219  4481.642  4050.773  4909.445
Tinc2 |   421  7934.981  482.5603  9901.31  6986.447  8883.515
-----+-----
diff |   421 -3454.872  523.2533  10736.26 -4483.393 -2426.35
-----+-----
mean(diff) = mean(Tinc1 - Tinc2)          t = -6.6027
Ho: mean(diff) = 0                      degrees of freedom = 420

Ha: mean(diff) < 0          Ha: mean(diff) != 0          Ha: mean(diff) > 0
Pr(T < t) = 0.0000        Pr(|T| > |t|) = 0.0000        Pr(T > t) = 1.0000

```

bys group_type: ttest Tinc1==Tinc2

```

-----+-----
-> group_type = 1

```

Paired t test

```

-----+-----
Variable |   Obs   Mean  Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
Tinc1 |   134  4511.866  334.0052  3866.389  3851.216  5172.515
Tinc2 |   134  11403.1  1266.944  14665.94  8897.131  13909.06
-----+-----

```

diff | 134 -6891.231 1316.937 15244.64 -9496.081 -4286.382

mean(diff) = mean(Tinc1 - Tinc2) t = -5.2328
Ho: mean(diff) = 0 degrees of freedom = 133

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

-> group_type = 3

Paired t test

Variable | Obs Mean Std. Err. Std. Dev. [95% Conf. Interval]
-----+-----
Tinc1 | 287 4465.282 280.2633 4747.962 3913.642 5016.923
Tinc2 | 287 6315.721 352.5813 5973.107 5621.738 7009.705
-----+-----
diff | 287 -1850.439 430.0716 7285.875 -2696.946 -1003.932

mean(diff) = mean(Tinc1 - Tinc2) t = -4.3026
Ho: mean(diff) = 0 degrees of freedom = 286

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

... controlling for household size*:

. ttest incprop1==incprop2

Paired t test

Variable | Obs Mean Std. Err. Std. Dev. [95% Conf. Interval]
-----+-----
incprop1 | 421 768.0368 39.66212 813.7987 690.0758 845.9978
incprop2 | 421 1279.174 95.20103 1953.362 1092.044 1466.304
-----+-----
diff | 421 -511.1373 100.3453 2058.914 -708.3789 -313.8957

mean(diff) = mean(incprop1 - incprop2) t = -5.0938
 Ho: mean(diff) = 0 degrees of freedom = 420

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

Income diversity

tttest incdiv1==incdiv2

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
incdiv1	421	2.251781	.0692239	1.420355	2.115713	2.38785
incdiv2	421	4.2019	.0868532	1.782079	4.031179	4.372621
diff	421	-1.950119	.1073572	2.202786	-2.161143	-1.739094

mean(diff) = mean(incdiv1 - incdiv2) t = -18.1648
 Ho: mean(diff) = 0 degrees of freedom = 420

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

bys group_type: tttest incdiv1==incdiv2

-> group_type = 1

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
incdiv1	134	2.41791	.1506722	1.744157	2.119887	2.715934
incdiv2	134	3.492537	.1485902	1.720055	3.198632	3.786443
diff	134	-1.074627	.208835	2.417439	-1.487694	-.6615594

mean(diff) = mean(incdiv1 - incdiv2) t = -5.1458
 Ho: mean(diff) = 0 degrees of freedom = 133

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

-> group_type = 3

Paired t test

Variable | Obs Mean Std. Err. Std. Dev. [95% Conf. Interval]
-----+-----
includ1 | 287 2.174216 .0729895 1.236521 2.030551 2.317881
includ2 | 287 4.533101 .101248 1.71525 4.333815 4.732387
-----+-----
diff | 287 -2.358885 .1162905 1.970086 -2.587779 -2.129991

mean(diff) = mean(includ1 - includ2) t = -20.2844
Ho: mean(diff) = 0 degrees of freedom = 286

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

Total savings: absolute, per person in the household, and by group

ttest Tsav1==Tsav2

Paired t test

Variable | Obs Mean Std. Err. Std. Dev. [95% Conf. Interval]
-----+-----
Tsav1 | 421 681.734 99.32363 2037.95 486.5006 876.9673
Tsav2 | 421 7876.349 332.779 6828.053 7222.229 8530.469
-----+-----
diff | 421 -7194.615 320.0208 6566.279 -7823.657 -6565.573

mean(diff) = mean(Tsav1 - Tsav2) t = -22.4817
Ho: mean(diff) = 0 degrees of freedom = 420

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

```
. ttest savprop1== savprop2
```

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
savprop1	421	123.1088	20.90508	428.9364	82.01719	164.2004
savprop2	421	1350.992	67.04376	1375.623	1219.209	1482.775
diff	421	-1227.883	63.3052	1298.914	-1352.317	-1103.448

mean(diff) = mean(savprop1 - savprop2) t = -19.3962
Ho: mean(diff) = 0 degrees of freedom = 420

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

```
. bys group_type: ttest Tsav1== Tsav2
```

```
-> group_type = 1
```

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Tsav1	134	758.209	236.3014	2735.386	290.814	1225.604
Tsav2	134	8188.179	621.9608	7199.717	6957.965	9418.393
diff	134	-7429.97	588.4295	6811.564	-8593.861	-6266.079

mean(diff) = mean(Tsav1 - Tsav2) t = -12.6268
Ho: mean(diff) = 0 degrees of freedom = 133

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

```
-> group_type = 3
```

Paired t test

```
-----  
Variable |   Obs    Mean   Std. Err.  Std. Dev.  [95% Conf. Interval]  
-----+-----  
Tsav1 |   287  646.0279  95.46508  1617.281  458.1246  833.9312  
Tsav2 |   287  7730.756  392.8542  6655.373  6957.504  8504.008  
-----+-----  
diff |   287 -7084.728  381.1899  6457.766 -7835.022 -6334.435  
-----  
mean(diff) = mean(Tsav1 - Tsav2)          t = -18.5858  
Ho: mean(diff) = 0          degrees of freedom = 286  
  
Ha: mean(diff) < 0          Ha: mean(diff) != 0          Ha: mean(diff) > 0  
Pr(T < t) = 0.0000          Pr(|T| > |t|) = 0.0000          Pr(T > t) = 1.0000
```

. bys group_type: ttest savprop1== savprop2

```
-----  
-> group_type = 1
```

Paired t test

```
-----  
Variable |   Obs    Mean   Std. Err.  Std. Dev.  [95% Conf. Interval]  
-----+-----  
savprop1 |   134  139.3395  51.34597  594.3726  37.77911  240.8998  
savprop2 |   134  1481.533  127.9811  1481.488  1228.391  1734.674  
-----+-----  
diff |   134 -1342.193  111.8848  1295.16 -1563.497 -1120.889  
-----  
mean(diff) = mean(savprop1 - savprop2)          t = -11.9962  
Ho: mean(diff) = 0          degrees of freedom = 133  
  
Ha: mean(diff) < 0          Ha: mean(diff) != 0          Ha: mean(diff) > 0  
Pr(T < t) = 0.0000          Pr(|T| > |t|) = 0.0000          Pr(T > t) = 1.0000
```

```
-----  
-> group_type = 3
```

Paired t test

```
-----+-----
Variable |  Obs   Mean   Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
savprop1 |  287  115.5307  19.19294   325.149    77.75341   153.3081
savprop2 |  287  1290.042  78.01065   1321.584   1136.494   1443.59
-----+-----
diff |  287 -1174.512  76.70536   1299.471   -1325.49   -1023.533
-----+-----
```

```
mean(diff) = mean(savprop1 - savprop2)          t = -15.3120
Ho: mean(diff) = 0                               degrees of freedom = 286
```

```
Ha: mean(diff) < 0      Ha: mean(diff) != 0      Ha: mean(diff) > 0
Pr(T < t) = 0.0000      Pr(|T| > |t|) = 0.0000      Pr(T > t) = 1.0000
```

Savings by source

```
tttest cashsavamt1== perssavamt2
```

Paired t test

```
-----+-----
Variable |  Obs   Mean   Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
cashsa~1 |  421  135.0594  23.97369   491.899    87.93602   182.1827
perssa~2 |  421  1256.283  141.2285   2897.766   978.68    1533.885
-----+-----
diff |  421 -1121.223  142.7573   2929.135  -1401.831  -840.6155
-----+-----
```

```
mean(diff) = mean(cashsavamt1 - perssavamt2)      t = -7.8541
Ho: mean(diff) = 0                               degrees of freedom = 420
```

```
Ha: mean(diff) < 0      Ha: mean(diff) != 0      Ha: mean(diff) > 0
Pr(T < t) = 0.0000      Pr(|T| > |t|) = 0.0000      Pr(T > t) = 1.0000
```

```
. tttest sgsavamt1== sgsavamt2
```

Paired t test

```
-----+-----
Variable |  Obs   Mean   Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
sgsava~1 |  421  237.6485  58.04865   1191.059   123.5464   351.7505
sgsava~2 |  421  3060.095  25.3947    521.0557   3010.178   3110.012
-----+-----
```

diff | 421 -2822.447 63.63536 1305.688 -2947.53 -2697.363

mean(diff) = mean(sgsavamt1 - sgsavamt2) t = -44.3534
Ho: mean(diff) = 0 degrees of freedom = 420

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

. ttest roscasavamt1== roscasavamt2

Paired t test

Variable | Obs Mean Std. Err. Std. Dev. [95% Conf. Interval]
-----+-----
roscas~1 | 421 148.5748 25.49079 523.0272 98.46941 198.6802
roscas~2 | 421 591.4727 85.25196 1749.224 423.899 759.0463
-----+-----
diff | 421 -442.8979 82.58755 1694.555 -605.2343 -280.5614

mean(diff) = mean(roscasavamt1 - roscasavamt2) t = -5.3628
Ho: mean(diff) = 0 degrees of freedom = 420

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

. ttest mpesasavamt1== mpesasavamt2

Paired t test

Variable | Obs Mean Std. Err. Std. Dev. [95% Conf. Interval]
-----+-----
mpesas~1 | 421 37.88599 11.89732 244.1127 14.50027 61.2717
mpesas~2 | 421 575.1781 84.48474 1733.482 409.1125 741.2437
-----+-----
diff | 421 -537.2922 83.15815 1706.263 -700.7502 -373.8341

mean(diff) = mean(mpesasavamt1 - mpesasavamt2) t = -6.4611
Ho: mean(diff) = 0 degrees of freedom = 420

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0

$\Pr(T < t) = 0.0000$ $\Pr(|T| > |t|) = 0.0000$ $\Pr(T > t) = 1.0000$

. ttest banksavamt1 == banksavamt2

Paired t test

```
-----+-----  
Variable |  Obs   Mean   Std. Err.  Std. Dev.  [95% Conf. Interval]  
-----+-----  
banksav~1 |  421  75.53444  53.01337  1087.743  -28.67014   179.739  
banksav~2 |  421  704.6318  178.5095  3662.709  353.7485  1055.515  
-----+-----  
diff |  421  -629.0974  169.0515  3468.647  -961.3899  -296.8049  
-----+-----
```

mean(diff) = mean(banksavamt1 - banksavamt2) t = -3.7213
Ho: mean(diff) = 0 degrees of freedom = 420

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
 $\Pr(T < t) = 0.0001$ $\Pr(|T| > |t|) = 0.0002$ $\Pr(T > t) = 0.9999$

. ttest bizsavamt1 == bizsavamt2

Paired t test

```
-----+-----  
Variable |  Obs   Mean   Std. Err.  Std. Dev.  [95% Conf. Interval]  
-----+-----  
bizsav~1 |  421  34.7981  10.75367  220.6468  13.66039  55.93581  
bizsav~2 |  421  237.6485  56.73584  1164.122  126.1269  349.17  
-----+-----  
diff |  421  -202.8504  57.9807  1189.664  -316.8189  -88.88186  
-----+-----
```

mean(diff) = mean(bizsavamt1 - bizsavamt2) t = -3.4986
Ho: mean(diff) = 0 degrees of freedom = 420

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
 $\Pr(T < t) = 0.0003$ $\Pr(|T| > |t|) = 0.0005$ $\Pr(T > t) = 0.9997$

. ttest othersavamt1 == othersavamt2

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
others~1	421	12.23278	11.8786	243.7285	-11.11613	35.58169
others~2	421	415.7957	90.7592	1862.223	237.3969	594.1946
diff	421	-403.5629	91.66545	1880.818	-583.7431	-223.3827

mean(diff) = mean(otherssavamt1 - otherssavamt2) t = -4.4026
Ho: mean(diff) = 0 degrees of freedom = 420

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

Decision-making

tttest DM1==DM2

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
DM1	275	.8093333	.0139188	.2308166	.781932	.8367347
DM2	275	.8788485	.0129607	.2149287	.8533333	.9043637
diff	275	-.0695151	.0182634	.3028637	-.1054695	-.0335608

mean(diff) = mean(DM1 - DM2) t = -3.8063
Ho: mean(diff) = 0 degrees of freedom = 274

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0001 Pr(|T| > |t|) = 0.0002 Pr(T > t) = 0.9999

. bys group_type: tttest DM1==DM2

-> group_type = 1

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
----------	-----	------	-----------	-----------	----------------------	--

DM1		87	.8151341	.0221334	.206447	.7711343	.8591339
DM2		87	.8936782	.0231189	.2156392	.8477192	.9396371
-----+							
diff		87	-.0785441	.0312594	.2915687	-.1406858	-.0164023

mean(diff) = mean(DM1 - DM2)			t = -2.5127				
Ho: mean(diff) = 0			degrees of freedom = 86				
Ha: mean(diff) < 0		Ha: mean(diff) != 0		Ha: mean(diff) > 0			
Pr(T < t) = 0.0069		Pr(T > t) = 0.0138		Pr(T > t) = 0.9931			

-> group_type = 3

Paired t test

Variable		Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
-----+							
DM1		188	.8066489	.0176308	.2417414	.7718681	.8414298
DM2		188	.8719858	.0156679	.2148278	.8410772	.9028944
-----+							
diff		188	-.0653369	.0225088	.3086248	-.1097406	-.0209331

mean(diff) = mean(DM1 - DM2)			t = -2.9027				
Ho: mean(diff) = 0			degrees of freedom = 187				
Ha: mean(diff) < 0		Ha: mean(diff) != 0		Ha: mean(diff) > 0			
Pr(T < t) = 0.0021		Pr(T > t) = 0.0041		Pr(T > t) = 0.9979			

. signrank DMfood1=DMfood2

Wilcoxon signed-rank test

sign		obs	sum ranks	expected
-----+				
positive		14	3654	3262.5
negative		11	2871	3262.5
zero		248	30876	30876
-----+				
all		273	37401	37401

unadjusted variance 1704862.25
 adjustment for ties -325.00
 adjustment for zeros -1.28e+06

 adjusted variance 425756.25

Ho: DMfood1 = DMfood2

z = 0.600

Prob > |z| = 0.5485

. signrank DMmeds1=DMmeds2

Wilcoxon signed-rank test

sign	obs	sum ranks	expected
positive	18	3618	5728.5
negative	39	7839	5728.5
zero	172	14878	14878
all	229	26335	26335

unadjusted variance 1007313.75
 adjustment for ties -3857.00
 adjustment for zeros -427742.50

 adjusted variance 575714.25

Ho: DMmeds1 = DMmeds2

z = -2.782

Prob > |z| = 0.0054

. signrank DMSchool1=DMSchool2

Wilcoxon signed-rank test

sign	obs	sum ranks	expected
positive	22	4169	5874.5

negative	40	7580	5874.5
zero	158	12561	12561
-----+-----			
all	220	24310	24310

unadjusted variance 893392.50
 adjustment for ties -4963.88
 adjustment for zeros -331819.75

 adjusted variance 556608.88

Ho: DMschool1 = DMschool2
 z = -2.286
 Prob > |z| = 0.0223

. signrank DMpersls1=DMpersls2

Wilcoxon signed-rank test

sign	obs	sum ranks	expected
-----+-----			
positive	25	5850	7605
negative	40	9360	7605
zero	201	20301	20301
-----+-----			
all	266	35511	35511

unadjusted variance 1577280.25
 adjustment for ties -5720.00
 adjustment for zeros -681775.25

 adjusted variance 889785.00

Ho: DMpersls1 = DMpersls2
 z = -1.861
 Prob > |z| = 0.0628

. signrank DMhhls1=DMhhls2

Wilcoxon signed-rank test

sign	obs	sum ranks	expected
-----+-----			
positive	28	6090	10657.5
negative	70	15225	10657.5
zero	168	14196	14196
-----+-----			
all	266	35511	35511

unadjusted variance 1577280.25
 adjustment for ties -19606.12
 adjustment for zeros -398671.00

 adjusted variance 1159003.12

Ho: DMhhs1 = DMhhs2

z = -4.243

Prob > |z| = 0.0000

Leadership positions

signrank leader1=leader2

Wilcoxon signed-rank test

sign	obs	sum ranks	expected
-----+-----			
positive	10	3900	11505
negative	49	19110	11505
zero	360	64980	64980
-----+-----			
all	419	87990	87990

unadjusted variance 6151967.50
 adjustment for ties -4277.50
 adjustment for zeros -3.90e+06

 adjusted variance 2243475.00

Ho: leader1 = leader2

z = -5.077

Prob > |z| = 0.0000

Committee membership

signrank committee1=committee2

Wilcoxon signed-rank test

sign	obs	sum ranks	expected
-----+-----			
positive	26	10023	13107
negative	42	16191	13107
zero	351	61776	61776
-----+-----			
all	419	87990	87990

unadjusted variance 6151967.50

adjustment for ties -6549.25

adjustment for zeros -3.62e+06

adjusted variance 2526374.25

Ho: committee1 = committee2

z = -1.940

Prob > |z| = 0.0523

Water treatment

ttest treatwater1==treatwater2

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
-----+-----						
treatw~1	111	.5135135	.0476557	.5020841	.4190711	.607956
treatw~2	111	.7657658	.040381	.42544	.6857401	.8457914
-----+-----						
diff	111	-.2522523	.0682872	.7194501	-.3875814	-.1169231

mean(diff) = mean(treatwater1 - treatwater2) t = -3.6940

Ho: mean(diff) = 0 degrees of freedom = 110

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
 Pr(T < t) = 0.0002 Pr(|T| > |t|) = 0.0003 Pr(T > t) = 0.9998

Illness prevalence

. ttest ILLprop1==ILLprop2

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
ILLprop1	421	.1054982	.0068908	.1413883	.0919533	.119043
ILLprop2	421	.2629258	.0117757	.2416177	.2397791	.2860725
diff	421	-.1574276	.0130182	.2671103	-.1830164	-.1318387

mean(diff) = mean(ILLprop1 - ILLprop2) t = -12.0929
 Ho: mean(diff) = 0 degrees of freedom = 420

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

Proportion of ill seeking treatment at government or private facilities

. ttest modprop1 ==modprop2

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
modprop1	109	.7629969	.0388788	.4059065	.6859324	.8400614
modprop2	109	.8249235	.0308171	.3217399	.7638387	.8860084
diff	109	-.0619266	.0459476	.479707	-.1530027	.0291495

mean(diff) = mean(modprop1 - modprop2) t = -1.3478
 Ho: mean(diff) = 0 degrees of freedom = 108

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
 Pr(T < t) = 0.0903 Pr(|T| > |t|) = 0.1806 Pr(T > t) = 0.9097

bys group_type: ttest modprop1 ==modprop2

-> group_type = 1

Paired t test

Variable | Obs Mean Std. Err. Std. Dev. [95% Conf. Interval]
-----+-----
modprop1 | 40 .625 .0735133 .4649388 .4763054 .7736946
modprop2 | 40 .8020833 .0578342 .3657757 .6851026 .9190641
-----+-----
diff | 40 -.1770833 .0861794 .5450462 -.3513976 -.0027691

mean(diff) = mean(modprop1 - modprop2) t = -2.0548
Ho: mean(diff) = 0 degrees of freedom = 39

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0233 Pr(|T| > |t|) = 0.0466 Pr(T > t) = 0.9767

-> group_type = 3

Paired t test

Variable | Obs Mean Std. Err. Std. Dev. [95% Conf. Interval]
-----+-----
modprop1 | 69 .8429952 .0417035 .3464149 .7597772 .9262131
modprop2 | 69 .8381643 .0355476 .2952802 .7672302 .9090983
-----+-----
diff | 69 .0048309 .0514681 .4275261 -.0978721 .1075339

mean(diff) = mean(modprop1 - modprop2) t = 0.0939
Ho: mean(diff) = 0 degrees of freedom = 68

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.5373 Pr(|T| > |t|) = 0.9255 Pr(T > t) = 0.4627

NHIF use

. ttest nhif1==nhif2

Paired t test

```
-----+-----
Variable |   Obs   Mean   Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
nhif1 |   421   .0166271   .0062394   .1280217   .0043627   .0288914
nhif2 |   421   .9691211   .008441   .1731953   .9525292   .9857131
-----+-----
diff |   421  -.9524941   .0103796   .2129715  -.9728965  -.9320916
-----+-----
```

```

mean(diff) = mean(nhif1 - nhif2)          t = -91.7660
Ho: mean(diff) = 0                        degrees of freedom = 420

Ha: mean(diff) < 0      Ha: mean(diff) != 0      Ha: mean(diff) > 0
Pr(T < t) = 0.0000     Pr(|T| > |t|) = 0.0000     Pr(T > t) = 1.0000

```

Primary education enrollment

. ttest Tpropprimed1==Tpropprimed2

Paired t test

```
-----+-----
Variable |   Obs   Mean   Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
Tpropp~1 |   312   .8339591   .0164054   .2897766   .8016795   .8662387
Tpropp~2 |   312   .8597222   .0144101   .2545334   .8313686   .8880759
-----+-----
diff |   312  -.0257631   .0137223   .2423841  -.0527634   .0012372
-----+-----
```

```

mean(diff) = mean(Tpropprimed1 - Tpropprimed2)          t = -1.8775
Ho: mean(diff) = 0                        degrees of freedom = 311

Ha: mean(diff) < 0      Ha: mean(diff) != 0      Ha: mean(diff) > 0
Pr(T < t) = 0.0307     Pr(|T| > |t|) = 0.0614     Pr(T > t) = 0.9693

```

Secondary education enrollment:

ttest Tpropseced1==Tpropseced2

Paired t test

```
-----+-----
Variable |   Obs   Mean   Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
```

Tprops~1	131	.7684478	.0313655	.3589946	.7063949	.8305007
Tprops~2	131	.8842239	.0247578	.2833659	.8352436	.9332042

-----+-----
diff | 131 -1.157761 .0339295 .3883414 -1.829016 -.0486505

mean(diff) = mean(Tpropseced1 - Tpropseced2) t = -3.4122
Ho: mean(diff) = 0 degrees of freedom = 130

Ha: mean(diff) < 0	Ha: mean(diff) != 0	Ha: mean(diff) > 0
Pr(T < t) = 0.0004	Pr(T > t) = 0.0009	Pr(T > t) = 0.9996

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

Savings sources

. ttest savdiv1==savdiv2

Paired t test

```
-----+-----
Variable |   Obs   Mean  Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
savdiv1 |   218  .2247706  .0311785  .4603457  .1633191  .2862222
savdiv2 |   218  1.293578  .0359713  .5311105  1.22268  1.364476
-----+-----
diff |   218 -1.068807  .0450407  .6650175 -1.157581  -.9800341
```

mean(diff) = mean(savdiv1 - savdiv2) t = -23.7298
 Ho: mean(diff) = 0 degrees of freedom = 217

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

Food security: Percent of households having 2 or more meals per day

ttest hhfs_c1==hhfs_c2

Paired t test

```
-----+-----
Variable |   Obs   Mean  Std. Err.  Std. Dev.  [95% Conf. Interval]
-----+-----
hhfs_c1 |   316  .7056962  .0256774  .456452  .6551753  .7562171
hhfs_c2 |   316    1    0    0    1    1
-----+-----
diff |   316 -.2943038  .0256774  .456452  -.3448247  -.2437829
```

mean(diff) = mean(hhfs_c1 - hhfs_c2) t = -11.4616
 Ho: mean(diff) = 0 degrees of freedom = 315

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000