

# Enhancing the Potential of E-savings to Boost Women's Economic Empowerment in Tanzania\*

Nathan Fiala<sup>†</sup>, Annekathrin Schoofs<sup>‡</sup>, Sulin Chowdhury<sup>§</sup> and Rachel  
Steinacher<sup>¶</sup>

October, 2022

tbc

## Keywords:

Development Economics

Labor Studies

Public Economics

Productivity, Innovation, and Entrepreneurship

Gender

Empowerment

Finance

## JEL Classification:

**J16** Economics of Gender; Non-labor Discrimination

**L26** Entrepreneurship

**O12** Microeconomic Analyses of Economic Development

**O16** Economic Development: Financial Markets

---

\*The authors gratefully acknowledge the team at IDRC who funded this research program. We thank Caroline Morrow, Jasmine Miller, Kyu Khin Gar, and Rachel Jones for excellent research assistance; the study participants for generously giving their time; as well as the field officers of Innovations for Poverty Action. Schoofs also gratefully acknowledges the financial support by the Transatlantic Program of the Federal Republic of Germany and the European Recovery Program of the Federal Ministry of Economics and Technology (BMW) as well as the RWI Transatlantic Research Exchange Program. All findings, interpretations, and conclusions in this paper are those of the authors and do not necessarily represent the views of IDRC.

<sup>†</sup>Nathan Fiala, University of Connecticut, USA, and RWI - Leibniz Institute for Economic Research, Germany, (e-mail: nathan.fiala@uconn.edu).

<sup>‡</sup>Annekathrin Schoofs, RWI, Germany, (e-mail: aschoofs@rwi-essen.de.)

<sup>§</sup>Sulin Chowdhury (Corresponding Author), University of Connecticut, (e-mail: sulin.chowdhury@uconn.edu)

<sup>¶</sup>Rachel Steinacher, Innovations for Poverty Action, East Africa, (e-mail: rsteinacher@poverty-action.org.)

# 1 Introduction

Globally, one in three women are not engaged with formal financial systems, with the lowest prevalence in developing countries (CGAP, 2017). Some financial service providers have responded by developing financial products and services specifically targeting women. However, broader social and political constraints that interact with and prevent women from fully utilizing these products and services are often not taken into account, resulting in low uptake or little to no effect on their economic empowerment and labour market decisions. Recent evidence suggests that one such constraint could be household dynamics (Fiala and He, 2017). Household decision making over resources is the result of a bargaining process between spouses. The decision of how to utilize household resources for productive investment is complex and, in some cases, can lead to sub-optimal investment decisions. How this bargaining process works, and what it means for household and individual savings and labour market decisions, is not well understood.

This paper explores the role of intra-household bargaining on the take-up, usage, and effects of e-savings accounts offered to female entrepreneurs in Tanzania. For a random set of households, both spouses are invited to a training program that aims to improve the quality of household decision making. We then directly test for the effect of attending this training program versus only providing the women of the households an e-savings account on women's control over how resources are invested and their labor market decisions. These two treatments are compared to the control and to each other to determine whether providing this decision-based training alongside a savings account or an e-bank savings accounts alone best increase women's income, savings and productivity.

The rest of this paper is as follows: Section X covers the background of this study and similar research to it; section X covers the Data Utilized for this study. Section X covers the methodology of this paper, while Section X covers an Analysis Section that briefly details the results from across the three survey phases, followed by the Conclusion of this study.

## 2 Background and Context

This project is related to a recent study by Bernhardt et al. (2019) who examine experiments conducted in India, Sri Lanka, and Ghana. They found that capital delivered to women often ends up in their husbands' enterprise, rather than their own. Women

who are the only enterprise owners in the household show positive impacts from capital shocks. In [Field et al. \(2021\)](#), the authors varied whether payments from a workfare program were deposited into a male owned household or female controlled account. They find that when women have more control over the funds, they are more likely to increase their work effort. The authors argue that this is consistent with gender norms limiting how much women engage in the labor market. Both papers suggest that the ability of women to control resources is hampered by household dynamics, and this can lead to sub-optimal outcomes for women and the broader household. We hypothesize that this can both explain why women do not use financial services as much as men do, as well as suggesting a value to e-bank and savings financial products and how this value may be enhanced by mitigating constraints placed on the women by their families.

This research proposal is also related to literature on alleviating capital constraints to female-owned microenterprises, a common programming approach by governments and international organizations. The stated goal of such programs is to increase income and employment. However, research has consistently found a lack of effect from capital programs on enterprise growth for existing female-run enterprises and mixed results for men. For instance, cash transfers have been shown to have a significant effect on business development for men that currently run a business ([de Mel et al. \(2008\)](#), and [Fafchamps et al. \(2011\)](#)), though recent experimental research has failed to find effects on business development from market delivered finance, or results from any kind of capital for women with existing businesses ([Banerjee et al. \(2015\)](#); [Augsburg et al. \(2019\)](#); and [Gine and Mansuri \(2011\)](#)).

It remains unclear why female-owned enterprises do not benefit from capital programs. One explanation is that women's objective functions are different than men's: rather than investing capital in their enterprises, women are more interested in spending cash on household needs, especially consumption and education. Even if this is not their personal objective, there is strong evidence that women face pressures from family to share income, whether they want to or not ([Townsend \(1994\)](#); [Kocherlakota \(1996\)](#); [Grimm et al. \(2013\)](#)). This is often cited as a reason why female-owned enterprises are generally much smaller than male-owned.

There is significant evidence that, for some women, sharing money with the household is not their preferred choice. This is especially common in countries where women have few rights to household resources ([Baland et al. \(2015\)](#); [Di Falco and Bulte \(2011\)](#); [Boltz and Chort \(2015\)](#); [Ashraf \(2009\)](#); [Castilla and Walker \(2012\)](#)). For instance, [Jakiela and Ozier \(2015\)](#) find women willing to forgo significant amounts of money to

obscure investment outcomes from family using an artefactual field experiment. Interestingly, they did not find men systematically hiding money. A recent study found that Offering private accounts sharply increased labor supply—raising work attendance and earnings, and that welfare benefits of informal redistribution can come at the cost of depressing labor supply and productivity (Carranza et al., 2022).

### 3 Data and Sampling

The data for this study was collected from a project, conducted by Innovations for Poverty Action (IPA) in Tanzania, that looked into The effect of e-banking, savings, and gender training on labor market outcomes and empowerment for women in Tanzania. Participants for the sample were identified through a brief (approximately five-minute) screening survey, which was conducted by the project’s enumerators. Enumerators visited markets and streets in relevant wards in Tanzania and conducted interviews with women, to determine their eligibility for the study. To be eligible for participation in the study, a woman must:

- Be married
- Own or work at a small / micro business
- Not currently have a bank account
- Express interest in obtaining a bank account
- Have a mobile phone
- Possess an identification card, required for opening a bank account

A baseline survey was conducted with eligible women who consented to participate and collected information on women’s current labor market participation, individual and household income, savings behaviors, empowerment, and household dynamics. Women in our sample are a representative selection of female entrepreneurs in these markets since more than 95 percent of women in our baseline sample owned the business they worked in.

For the first phase of the baseline survey, 971 women were randomly chosen to receive an e-bank and savings account and seed capital of approximately USD \$5. 303 of these women were given an account that only they know about. A further 317 received

the same savings product but with their husbands being informed about. The final 351 were given an account, their spouses were told about it, and both respondents and their husbands were invited to attend a training session on family dynamics and cooperation, which took place one to two weeks following the baseline survey. A sample of 294 women in treatment markets were randomly assigned to the control group without any program intervention and another 441 women were surveyed in pure control markets, following the same screening protocol as in treatment markets.

Baseline data collection launched in September 2019, with plans for 2.5 months of fieldwork, ending in November 2019, scheduled to avoid provision of capital grants that could be diverted from savings during the holiday season. By December, baseline surveys were conducted with 1,706 women.

In June 2020, we obtained IRB approval for phone-based midline data collection, which launched in September 2020. This survey was targeting follow-up with respondents enrolled in the study from September to November 2019. The midline survey covered the economic situation of the women in detail, particularly income, business performance and aspirations, savings, financial autonomy, and financial health. It also covered well-being outcomes including mental health, care responsibilities and domestic discord within the household. Analysis of the midline data collected suggested negative treatment effects on preregistered primary research outcomes.<sup>1</sup> Despite this being a phone survey, we were fairly confident of this result due to high tracking rates (over 83%). This was worrisome to the research team and in contradiction to our core hypothesis that providing a woman with a safe place to save will lead to positive effects on several outcomes including financial control, productive time-use, income, and savings. As a result, we dropped this treatment arm for our second phase of baseline and activities.

In August 2021, we launched our second phase of baseline data collection activities, which was completed end of September 2021. During our second baseline phase, we enrolled 1,601 women of which 368 were randomly assigned to the control group, 347 were randomly chosen to receive an e-bank and savings account and seed capital of approximately USD \$5, and 886 were given an account and both respondents and their husbands were invited to attend a training session on family dynamics and cooperation, which took place one to two weeks following the baseline survey.

Along with the two phases of baseline data collection, collection of data at the endline was also performed in two phases. Across both endline phases, 2,543 women were

---

<sup>1</sup>This study is registered in the AEA RCT Registry and the unique identifying number is: 'AEARCTR-0006260'.

accounted for of which 561 were from the control group, 250 received private accounts, 591 had accounts that their husbands knew of, and 1141 had announced accounts with training.

## 4 Methodology

### Hypotheses

For both the midline phase and endline phase of estimation, the hypotheses we have estimated are the following:

- $H_0/H_a$ : No impact (positive impact) of receiving a private account on women's<sup>2</sup>
  - Income,
  - Productive time use,
  - Savings.
- $H_0/H_a$ : No impact (positive impact) of receiving an account on women's
  - Income,
  - Productive time use,
  - Savings.
- $H_0/H_a$ : No impact (positive impact) of receiving an account and household training on women's
  - Income,
  - Productive time use,
  - Savings.
- Heterogeneity analysis according to regional dimensions.

Along with these, we will also test the impact of the three treatment on individual subjective resilience and food security at the midline phase, as well as heterogeneity across training attendance.

---

<sup>2</sup>For this particular hypothesis, estimations were only performed for the first phase of midline and endline data, as this treatment arm was dropped during the second phase

## 4.1 Estimation methodology

To test the hypotheses outlined above, we estimate the following simple model using Ordinary Least Squares:

$$Y_{iPost} = \alpha + \beta T_i + \delta X_{iPre} + \epsilon_{iPost} \quad (1)$$

where  $Y_{iPost}$  represents the outcome for individual  $i$ , measured after the intervention.  $T_i$  a dummy variable equal to one if the individual was part of the treatment group and zero if not.  $X_{iPre}$  represents control variables unbalanced at baseline (such as nearest market indicators).  $\beta$  will provide the intent-to-treat effect, which is the effect of being in the treatment group on the outcome variable. The estimation includes market fixed effects since the randomization was implemented within market strata. Finally,  $\epsilon_{iPost}$  represents the unobserved individual-specific residual.

To test hypotheses outlined in Section 3, we next conduct a heterogeneity analysis that allows estimation of the impact according to region. Heterogeneous treatment effects will be obtained by estimating (1) with an additional interaction effect that interacts treatment status with the variable of interest, as illustrated in (2):

$$Y_{iPost} = \alpha + \beta_\tau \tau_i + \beta_{1,\tau}(T_i \cdot \tau_i) + \beta_1 T_i + \eta Y_{iPre} + \delta X_{iPre} + \epsilon_{iPost} \quad (2)$$

where the variable  $\tau_i$  indicates the region.

## 4.2 Multiple outcomes and multiple hypothesis testing

We have a relatively rich set of outcome measures to explore treatment effects along various interesting dimensions. To deal with multiple hypothesis testing, we will employ two different approaches.

First, we will group our outcome measures into additive standardized indices where items within an index are measuring an underlying common factor.

Second, within each domain and across domain indices, we will also calculate the Family-Wise Error Rate (FWER) adjusted p-values using the Westfall and Young step-down resampling method. The FWER represents the probability that at least one hypothesis out of a family of hypotheses is falsely rejected (type-1 error). Hence, the FWER results will be used to account for the multiple inference problem which increases the likelihood that some of the outcomes are statistically significant by chance even if there is no treatment effect.

## 5 Analysis Section

### Baseline Phase

From the Baseline portion of the survey, key information regarding the characteristics of the households were collected. This includes socio-demographic characteristics; some household behavior questions (i.e. views on whether women should work etc.), as well as key details on the amount of savings and income generated in the month before the survey. From this data, we can generate an image of the general environment that these women come from. The women who were surveyed are from the rural parts of Tanzania, and overwhelmingly categorize themselves as entrepreneurs. The average woman in the sample is a little over 36 years old. She has been married for 13 years, comes from a house of 5 persons, and has 2 children. based on her PPI score, there is about a 56% likelihood that she is in poverty. Across the sample, nearly 90% of the women are entrepreneurs, while 16% of the women do some sort of farming. In fact, most of the women who do farming work also state that they are entrepreneurs/business owners. The primary sort of business these women operate are selling vegetables, staple crops and fruit, followed by selling other groceries (soft drinks, snack, etc.), followed by food vending. across the sample, most women(67%) believe it should be up to the women to decide whether or not she'd want to work, but a smaller portion of the women (38%) believe a women should decide what to do with the income she generates. The women are generally satisfied with their husband, ranking their satisfaction at 7.5/10, and find that their husbands are generally supportive of their wife's goals and savings decision, with a cooperative behavior index of 3.25 out of 4. the women rank their level of empowerment ( based on whether they know how to invest in their business, how to set prices for their business, and whether they can close the business) a little over 3 out of 4. over 30% of the women are hiding money from their husbands, and almost half the women surveyed believe that their husband are hiding money from them.

Along with giving us some insight into personal and financial composition of rural Tanzanian households, the data also allows us to test for balance between the different treatment groups against the control group and each-other. As we can see in Tables 1 and 2, the different partitions of the survey participants are, across most characteristics, well balanced against each-other. Based on the Combined dataset (with both phases of the baseline survey) the factor that is not balanced between the treatment and control is whether woman should decide what to do with her own money. As this



is not a part of our primary estimates, and we feel this single decision would not bias our overall estimations, we do not control for this discrepancy in our regressions.

When we partition tables 1 and 2 by their respective phase of data collection (tables 10-13), we see that most of the results are consistent to the unpartitioned statistics. When looking at the partitioned data, we see that not as many characteristics are as balanced as in the merged version. For example, the difference between daily productivity and profits between the treatment and control group are statistically significant in phase 2, and there is a significant difference in level of secondary education among the respondents in phase 1. This should not pose an issue in our estimations, as most of the variables with significant differences are dependant variables in our estimation (like profit and productivity).

Table 1: Baseline Descriptives and tests of balance

	Obs	Sample mean	Treatment mean (all accounts)	Control mean	Regression difference	p-Value
<b>Covariate in 2019 (pre-intervention)</b>						
<i>Socio-demographics</i>						
Age	2,865	36.73	36.86	36.27	0.436	0.290
Respondent: Secondary school or more	2865	0.29	0.29	0.28	0.022	0.296
Husband: Secondary school or more	2851	0.40	0.40	0.40	−0.000	0.983
Years married	2862	13.48	13.53	13.33	0.038	0.932
Main income earner	2865	0.12	0.12	0.12	−0.005	0.754
Houshold head	2865	0.09	0.09	0.11	−0.026	0.074
Household size (cap)	2865	4.96	4.97	4.91	0.070	0.415
No. children	2865	2.33	2.34	2.30	0.048	0.481
No. pupils	2616	1.79	1.79	1.79	0.015	0.809
Christian	2495	0.73	0.73	0.74	−0.018	0.370
<i>Assets and PPI</i>						
Owens a TV	2865	0.67	0.66	0.68	−0.019	0.388
Owens laterns	2865	0.14	0.14	0.12	0.023	0.142
Owens a table	2865	0.93	0.93	0.93	−0.000	0.985
Cultivates crops	2865	0.33	0.33	0.31	0.055	0.009
PPI score	2865	56.21	56.19	56.29	−0.227	0.721
PPI income	2865	2153.42	2158.36	2137.00	23.613	0.324
<i>Personal finances</i>						
Total savings	2787	327676.19	333426.18	308542.30	45853.898	0.241
Total savings (wins)	2787	292764.10	296823.29	279256.59	29492.433	0.208
Total savings (std)	2787	0.00	0.01	−0.02	0.054	0.241
Total savings (wins std)	2787	0.00	0.01	−0.03	0.061	0.208
Total income	2854	363798.69	358124.12	382774.38	−26590.554	0.536
Total income (wins)	2854	346717.75	346008.05	349090.97	−1364.873	0.955
Total income (std)	2854	0.00	−0.01	0.03	−0.040	0.536
Total income (wins std)	2854	0.00	−0.00	0.01	−0.003	0.955
Profits	2,805	154611.83	157241.11	145771.21	12684.972	0.159
Profits (wins)	2805	148607.91	150591.25	141939.17	10100.123	0.167
Profits (std)	2805	0.00	0.01	−0.04	0.062	0.159
Profits (wins std)	2805	0.00	0.01	−0.04	0.065	0.167
Subjective resilience	2,691	2.02	2.03	1.98	0.034	0.482
Financial education	2,865	0.62	0.62	0.62	0.002	0.828
Financial autonomy	2,861	4.06	3.98	4.31	−0.264	0.145
<i>Productive time use</i>						
Productive time use	2865	13.58	13.64	13.40	0.217	0.052
Productive time use (wins)	2865	13.58	13.63	13.39	0.217	0.051
Productive time use (std)	2865	−0.00	0.02	−0.07	0.088	0.052
Productive time use (wins std)	2865	−0.00	0.02	−0.08	0.090	0.051
<i>Household behaviour</i>						
Woman should decide work	2,865	0.67	0.67	0.68	−0.012	0.573
Woman should decide her own money	2,865	0.38	0.39	0.34	0.062	0.007
Partner satisfaction	2,322	7.48	7.52	7.35	0.162	0.237
Cooperative behaviour	2,865	3.25	3.26	3.23	0.026	0.525
Women empowerment	2,864	3.08	3.08	3.09	−0.024	0.460
Respondent: Income hiding	2,862	0.31	0.31	0.31	−0.017	0.437
Husband: Income hiding	2,743	0.45	0.44	0.46	−0.041	0.089

*Notes:* Values are calculated using baseline survey data from the second phase of data collection. The last column reports the p-value of the OLS regression of the listed baseline characteristics on the indicator for random account provision plus market fixed effects. Pure control group respondents are excluded from this analysis.

Table 2: Baseline Mean comparison of different treatment arms

	Pure control group mean	Control group mean	Treatment arm 1 mean	Treatment arm 2 mean	Treatment arm 3 mean
<b>Covariate in 2019 (pre-intervention)</b>					
<i>Socio-demographics</i>					
Age		36.27	36.32	37.12	36.86
Respondent: Secondary school or more		0.28	0.30	0.25	0.31
Husband: Secondary school or more		0.40	0.41	0.39	0.40
Years married		13.33	13.34	13.86	13.40
Main income earner		0.12	0.14	0.11	0.11
Houshold head		0.11	0.12	0.09	0.08
Household size (cap)		4.91	5.18	5.02	4.90
No. children		2.30	2.45	2.34	2.32
No. pupils		1.79	1.91	1.84	1.73
Christian		0.74	0.72	0.71	0.74
<i>Assets and PPI</i>					
Owens a TV		0.68	0.66	0.66	0.66
Owens laterns		0.12	0.15	0.15	0.14
Owens a table		0.93	0.94	0.92	0.93
Cultivates crops		0.31	0.25	0.28	0.38
PPI score		56.29	58.94	56.07	55.59
PPI income		2137.00	2253.01	2150.70	2139.36
<i>Personal finances</i>					
Total savings		308542.30	429012.12	304238.25	325843.40
Total savings (wins)		279256.59	325469.45	294346.44	291178.39
Total savings (std)		-0.02	0.12	-0.03	0.00
Total savings (wins std)		-0.03	0.07	0.00	0.00
Total income		382774.38	342423.84	404985.40	336809.69
Total income (wins)		349090.97	341761.59	369020.15	334692.90
Total income (std)		0.03	-0.03	0.06	-0.04
Total income (wins std)		0.01	-0.01	0.05	-0.02
Profits		145771.21	163347.97	165832.39	151150.12
Profits (wins)		141939.17	162152.02	155648.06	145065.35
Profits (std)		-0.04	0.04	0.06	-0.02
Profits (wins std)		-0.04	0.09	0.05	-0.02
Subjective resilience		1.98	2.07	2.00	2.03
Financial education		0.62	0.65	0.61	0.62
Financial autonomy		4.31	3.84	4.11	3.95
<i>Productive time use</i>					
Productive time use		13.40	13.44	13.79	13.61
Productive time use (wins)		13.39	13.43	13.77	13.61
Productive time use (std)		-0.07	-0.06	0.08	0.01
Productive time use (wins std)		-0.08	-0.06	0.08	0.01
<i>Household behaviour</i>					
Woman should decide work		0.68	0.61	0.66	0.70
Woman should decide her own money		0.34	0.42	0.38	0.39
Partner satisfaction		7.35	7.15	7.43	7.62
Cooperative behaviour		3.23	3.24	3.24	3.27
Women empowerment		3.09	3.15	3.02	3.09
Respondent: Income hiding		0.31	0.29	0.30	0.31
Husband: Income hiding		0.46	0.43	0.43	0.45

Notes: Values are calculated using baseline survey data for respondents who were selected in the second phase of data collection. Pure control group respondents are excluded from this analysis.

Table 3: Training sample: Attended together vs alone

	Obs	Training sample mean	Attended together mean	Attended alone mean	Regression difference	p-Value
<b>Covariate in 2019 (pre-intervention)</b>						
<i>Socio-demographics</i>						
Age	946	37.14	37.67	36.64	1.361	0.040
Respondent: Secondary school or more	946	0.32	0.29	0.34	-0.062	0.075
Husband: Secondary school or more	941	0.41	0.42	0.39	0.053	0.149
Years married	946	13.84	14.78	12.97	1.736	0.015
Main income earner	946	0.11	0.11	0.12	-0.009	0.679
Houshold head	946	0.08	0.06	0.09	-0.022	0.239
Household size (cap)	946	4.95	5.13	4.78	0.388	0.005
PPI score	946	55.23	54.26	56.12	-1.225	0.195
<i>Personal finances</i>						
Total savings (wins)	922	285641.00	270056.00	299991.00	20785.00	0.552
Profits (wins)	928	140803.00	135138.00	145977.00	-8899.00	0.417
Productive time use (wins)	946	13.56	13.53	13.59	0.032	0.852
Financial education	946	0.62	0.62	0.61	0.017	0.223
Financial autonomy	946	4.01	4.00	4.03	0.040	0.884
<i>Household cooperation</i>						
Partner satisfaction	836	7.64	7.83	7.44	0.375	0.051
Cooperative behaviour	946	3.27	3.33	3.23	0.110	0.079
Women empowerment	946	3.09	3.10	3.07	0.097	0.045
Respondent: Income hiding	946	0.31	0.27	0.35	-0.108	0.002
Husband: Income hiding	914	0.45	0.41	0.49	-0.080	0.033

Another significant comparison to observe are differences in characteristics between the woman who attended the household decision training alone or with their husband. In table 3, we see that there are some statistically significant differences between the women who chose to participate in the training alone or with their spouse. The Women who attended alone are slightly younger, slightly more educated, and have been married for a less amount of time. they also have less people at home, and are far more likely to hide income from their spouse. It is possible that all these factors are interlinked i.e. a woman who is younger would have been married for less, and thus may still feel the need to hide income from her husband, while also have a smaller household due to having less children due to being married for a shorter amount of time.

## Midline Phase

Tables 4 and 5 provide us with descriptive statistics for the respondents from the first phase of the baseline survey who responded to a request for a phone-based follow-up study (the midline phase). We see that these descriptives are very similar to the results of the first phase baseline estimation that these statistics are derived from.

Table 4: Midline Descriptives and tests of balance

	Obs	Sample mean	Treatment mean (all accounts)	Control mean	Regression difference	p-Value
<b>Covariate in 2019 (pre-intervention)</b>						
<i>Socio-demographics</i>						
Age	1265	36.91	36.78	37.37	-0.472	0.419
Respondent: Secondary school or more	1265	0.26	0.28	0.19	0.093	0.001
Husband: Secondary school or more	1258	0.41	0.42	0.36	0.060	0.069
Years married	1262	13.60	13.41	14.24	-0.701	0.283
Main income earner	1265	0.15	0.15	0.16	-0.014	0.577
Houshold head	1265	0.12	0.11	0.15	-0.045	0.050
Household size (cap)	1265	5.13	5.14	5.10	0.088	0.491
No. children	1265	2.37	2.39	2.30	0.105	0.295
No. pupils	1134	1.91	1.92	1.89	0.063	0.496
Christian	895	0.70	0.70	0.72	-0.048	0.149
<i>Assets and PPI</i>						
Owns a TV	1265	0.70	0.70	0.71	-0.019	0.526
Owns laterns	1265	0.14	0.14	0.15	-0.000	0.997
Owns a table	1265	0.94	0.94	0.94	-0.006	0.707
Cultivates crops	1265	0.23	0.23	0.21	0.019	0.484
PPI score	1265	59.32	59.23	59.64	-0.692	0.413
PPI income	1265	2242.35	2242.82	2240.81	-10.732	0.725
<i>Personal finances</i>						
Total savings	1209	368743.47	390950.38	294720.43	131977.741	0.051
Total savings (wins)	1209	311358.85	326242.85	261745.52	77105.830	0.030
Total savings (std)	1209	0.05	0.07	-0.04	0.143	0.051
Total savings (wins std)	1209	0.05	0.07	-0.05	0.152	0.030
Total income	1259	408415.49	399389.81	438439.08	-40336.651	0.598
Total income (wins)	1259	374301.91	374008.61	375277.57	3401.884	0.920
Total income (std)	1259	0.07	0.05	0.11	-0.053	0.598
Total income (wins std)	1259	0.10	0.10	0.10	0.007	0.920
Profits	1235	181642.82	180963.23	183928.93	-3924.615	0.796
Profits (wins)	1235	173216.10	172199.58	176635.65	-3854.452	0.757
Profits (std)	1235	0.09	0.09	0.10	-0.017	0.796
Profits (wins std)	1235	0.11	0.11	0.13	-0.023	0.757
Subjective resilience	1092	2.05	2.08	1.95	0.114	0.114
Financial education	1265	0.64	0.64	0.64	0.002	0.859
Financial autonomy	1263	4.10	4.06	4.23	-0.063	0.804
<i>Productive time use</i>						
Productive time use	1265	13.38	13.41	13.30	0.011	0.942
Productive time use (wins)	1265	13.37	13.39	13.29	0.005	0.976
Productive time use (std)	1265	0.04	0.05	0.00	0.004	0.942
Productive time use (wins std)	1265	0.04	0.05	0.01	0.002	0.976
<i>Household behaviour</i>						
Woman should decide work	1265	0.64	0.64	0.64	0.006	0.861
Woman should decide her own money	1265	0.40	0.40	0.37	0.036	0.283
Partner satisfaction	725	7.31	7.34	7.23	0.109	0.652
Cooperative behaviour	1265	3.22	3.23	3.19	0.015	0.809
Women empowerment	1264	3.13	3.13	3.14	-0.022	0.637
Respondent: Income hiding	1262	0.30	0.29	0.32	-0.019	0.538
Husband: Income hiding	1218	0.46	0.45	0.48	-0.034	0.311

*Notes:* Values are calculated using baseline survey data for respondents who were selected for midline data collection. The last column reports the p-value of the OLS regression of the listed baseline characteristics on the indicator for random account provision plus market fixed effects. Pure control group respondents are excluded from this analysis.

Table 5: Midline Mean comparison of different treatment arms

	Pure control group mean	Control group mean	Treatment arm 1 mean	Treatment arm 2 mean	Treatment arm 3 mean
<b>Covariate in 2019 (pre-intervention)</b>					
<i>Socio-demographics</i>					
Age	36.76	37.37	36.32	37.35	36.66
Respondent: Secondary school or more	0.22	0.19	0.30	0.23	0.30
Husband: Secondary school or more	0.36	0.36	0.41	0.42	0.43
Years married	13.67	14.24	13.34	14.27	12.70
Main income earner	0.09	0.16	0.14	0.13	0.17
Houshold head	0.07	0.15	0.12	0.10	0.10
Household size (cap)	5.06	5.10	5.17	5.15	5.11
No. children	2.41	2.30	2.45	2.32	2.39
No. pupils	1.96	1.89	1.91	1.94	1.90
Christian	0.73	0.72	0.72	0.71	0.66
<i>Assets and PPI</i>					
Owens a TV	0.65	0.71	0.66	0.69	0.73
Owens laterns	0.15	0.15	0.15	0.16	0.12
Owens a table	0.92	0.94	0.94	0.94	0.93
Cultivates crops	0.23	0.21	0.25	0.20	0.24
PPI score	59.10	59.64	58.97	58.64	59.98
PPI income	2218.49	2240.81	2254.00	2217.85	2255.71
<i>Personal finances</i>					
Total savings	283413.07	294720.43	427722.96	355460.93	390670.96
Total savings (wins)	283413.07	261745.52	330314.80	337911.26	312108.08
Total savings (std)	-0.05	-0.04	0.11	0.03	0.07
Total savings (wins std)	-0.01	-0.05	0.08	0.10	0.05
Total income	309168.95	438439.08	341425.74	480858.84	375646.78
Total income (wins)	280726.03	375277.57	339445.54	406981.87	374066.32
Total income (std)	-0.07	0.11	-0.02	0.16	0.02
Total income (wins std)	-0.11	0.10	0.02	0.17	0.10
Profits	140203.75	183928.93	162932.66	201096.15	178262.39
Profits (wins)	140110.07	176635.65	162124.58	183115.38	170994.17
Profits (std)	-0.09	0.10	0.01	0.17	0.07
Profits (wins std)	-0.08	0.13	0.05	0.17	0.10
Subjective resilience	1.90	1.95	2.07	2.02	2.15
Financial education		0.64	0.65	0.63	0.63
Financial autonomy	4.17	4.23	3.82	4.35	3.99
<i>Productive time use</i>					
Productive time use	13.20	13.30	13.45	13.60	13.20
Productive time use (wins)	13.20	13.29	13.44	13.56	13.20
Productive time use (std)	-0.03	0.00	0.07	0.13	-0.03
Productive time use (wins std)	-0.03	0.01	0.07	0.12	-0.03
<i>Household behaviour</i>					
Woman should decide work		0.64	0.61	0.64	0.66
Woman should decide her own money		0.37	0.42	0.38	0.42
Partner satisfaction		7.23	7.16	7.32	7.52
Cooperative behaviour	3.18	3.19	3.24	3.23	3.21
Women empowerment	3.09	3.14	3.15	3.08	3.16
Respondent: Income hiding	0.34	0.32	0.29	0.27	0.31
Husband: Income hiding	0.44	0.48	0.43	0.45	0.46

Notes: Values are calculated using baseline survey data for respondents who were selected for midline data collection.

From tables 18-21, we see the results of applying our methodology to the midline phase of data. In Table 19, we can see from the non-standardized results that having a private account has a significant negative effect on total income. According to the estimates, providing a woman with a private account that she can not tell her husband about leads to a decrease in total income equal to about 33000 Tanzanian shillings (about 14 USD). Providing a private account also decreases profits generated in the last month by over 36000 shillings (over 15 USD). These estimates are over 15% of what the average woman in our survey brings in as monthly income. Providing a private account also leads to a statistically significant decrease in the amount of time spent productively, with a decrease in number of hours spent on household chores. While the results imply that there is an increase in the total amount of average savings, this result is not statistically significant. When looking particularly at the Dar es Salaam region, we see statistically significant positive effects of having any sort of bank account on household food security. Regardless of statistical significance, the negative effects were strongest for women in our “private account” treatment arm. When looking at the results when Dar es Salaam is not included (table 21), we confirm the statistically significant negative effects of the private account provision on total income and productive time use, and also find a statistically significant decrease in overall subjective resilience (how well the household would be able to recover from an unexpected expense or emergency). These results were surprising and in contradiction to our core hypothesis that providing a woman with a safe place to save will lead to positive effects on our primary outcomes of interest, such as income or savings.

To better understand the mechanism(s) behind these effects, we conducted a round of 61 qualitative interviews with women in each of the three treatment arms (funded by the WEE-DiFine initiative at the BRAC Institute of Governance and Development). These interviews revealed several important findings. First, the women were very happy to receive the accounts. A common statement about the account was “I was happy because it was good opportunity for me to save my income that may help in the growth of my business and the saving that could help in emergencies for example sickness.”

Second, while women were excited about the account, the result reveals that 38% of surveyed women were not actually using the bank account. Among the women who reported using the bank account, 37% report using it for saving and 13% using it for personal reasons. 49% report using the bank account for their business. The reason why many of interviewed women are not using the bank account is largely due to low incomes of women as 18% of surveyed women reported that they have less income and

working time. One woman reported to us that “I have a small income. We fail to save money because of small capital which does not enable us to make more profits.” Even with an account, without income it is difficult to save.

We also found that almost all women in the “private account” group had informed their husbands about the account, rendering it is no longer private. Most women indicated they would have been stressed if their husbands did not know about the bank account. Clearly, a private account made these women very nervous. In addition, women in “private account” group aim to use the bank account more likely to save money compare to increasing the capital for business development or personal uses. The results suggest that women who received the bank account with their husband’s consent expect to use the account for their business development (5 times more) compared to their counterpart in “private account” group.

## Spillover analysis

Table 6: Primary outcomes - control vs pure control group

	Total income (wins std) $\beta$ / SE	Productive time use (wins) $\beta$ / SE	Total savings (wins std) $\beta$ / SE	Food security $\beta$ / SE	Subjective resilience $\beta$ / SE
Control group: clustered se (all regions)	-0.030 (0.100)	-0.012 (0.258)	-0.029 (0.069)	-0.114* (0.068)	0.068 (0.078)
Observations	603	614	605	614	614
Pure control Mean	0.09	13.47	0.02	1.51	2.17
Pure control SD	1.04	2.55	0.92	0.72	0.97
Control Mean	0.06	13.46	-0.01	1.40	2.24
Control SD	1.08	2.85	0.83	0.81	0.99
R-squared	0.000	0.000	0.000	0.005	0.001
Control group: clustered se (drop Shinyanga)	0.006 (0.113)	0.011 (0.285)	0.016 (0.075)	-0.154** (0.074)	0.097 (0.079)
Observations	561	569	563	569	569
R-squared	0.000	0.000	0.000	0.009	0.002
Control group: market fe	1.392 (.)	-5.000*** (0.855)	-0.181 (0.114)	-0.000 (0.494)	-0.667* (0.377)
Observations	561	569	563	569	569
R-squared	0.108	0.129	0.081	0.108	0.071
Control group	0.006 (0.097)	0.011 (0.247)	0.016 (0.076)	-0.154** (0.069)	0.097 (0.085)
Observations	561	569	563	569	569
R-squared	0.000	0.000	0.000	0.009	0.002

*Notes:* The table reports coefficients of multivariate regressions. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  denote statistical significance.



Table 6 tells us of the differences between those respondents who were in the control group (those women who were in treatment markets and were not assigned any intervention) relative to women who were in *pure* control groups (women were surveyed in pure control markets, following the same screening protocol as women in the treatment markets). We find that, compared to women in the pure control market, women who were selected from the treatment market control group had significantly less food security. when looking across all regions, food security was .114 less in the control group relative to the pure control group (with the index being out of a possible 2). When we dropping Shinyanga from the possible set of regions, food security further dips by .154. When we factor in market fixed effects to our estimates, we see that our impact on food security is moot, but we now see statistically significant negative effects of participating in the study on on productive time use and household subjective resilience.

## Endline Phase

Tables 7-8 and tables 14-17 provide us with some descriptive statistics from the endline phase of the survey. Similar to the baseline portion of the survey, key information regarding the socio-demographic characteristics, household behavior, and financial information were collected. Generally, we can see that, on average, there is a greater amount of total savings, profits, and income among those women who joined treatment 1 (private account) during the month before survey collection. across the sample, half the women(53%) visit the ATM to deposit and collect money on their own, but a larger portion of the women (88%) feel comfortable visiting the ATM alone, and 92% of the women are permitted to go to the ATM on their own. The women are generally less satisfied with their husband at endline, ranking their satisfaction at 1.4 points less than at baseline, and also find that their husbands are generally less supportive of their wife's based on the lower cooperative behavior index. the women rank their level of empowerment similar to how they do at baseline. the proportion of women that are hiding money from their husbands and believe that their husband are hiding money from them at endline are similar to the baseline.

Similar to what is provided at baseline, the data also allows us to compare the balance between the different treatment groups and the control. Tables 7 and 8 show us that the different partitions of the survey participants are similarly well-balanced. When we partition the results by their respective phase of data collection (tables 14-17), we see that most of the results are consistent to the merged results.

From tables 22-25, we see the results of applying our methodology to the endline phase of data. here, we find statistically significant results only when looking at the effect of providing an announced account on standardized savings, with a decrease in savings from having an account that was announced. Aside from this result, we find negative effects of having any sort of account on income, savings and productivity, but these effects are not significant.

The lack of statistically significant results can, on it's own, be received as a result that is significant in it's own right. This may be telling us that the mere action of providing the means of access to capital and a place to store savings is not enough to improve the financial condition of those who previously didn't have access. This study is aware of previous research which has shown that there is a lack of effect from capital programs on enterprise growth for existing female-run enterprises. In future research, it would be optimal to consider that there may be other cultural dimensions at play here. For now, the results of this study are consistent with the findings of the study's that preceded it in lineage. We will continue to explore possible interactions between the provision of financial tools and household outcomes in this study, with a particular focus on how the treatment effect interacts with secondary characteristics of the households.

Table 8: Endline Mean comparison of different treatment arms

	Control group mean	Treatment arm 1 mean	Treatment arm 2 mean	Treatment arm 3 mean
<b>Covariate post-intervention</b>				
<i>Personal finances</i>				
Total savings	377128.21	455463.45	306381.19	377482.22
Total savings (wins)	345633.57	369357.83	296296.44	353791.16
Total savings (std)	0.01	0.10	-0.07	0.01
Total savings (wins std)	0.01	0.06	-0.09	0.03
Total income	248566.52	267100.51	235816.79	264018.78
Total income (wins)	239587.91	258500.51	228371.78	251748.84
Total income (std)	-0.01	0.03	-0.05	0.02
Total income (wins std)	-0.01	0.05	-0.05	0.02
Profits	150104.54	180572.05	149580.59	146616.62
Profits (wins)	146361.63	179043.67	147817.19	143784.71
Profits (std)	-0.01	0.16	-0.01	-0.03
Profits (wins std)	-0.02	0.19	-0.01	-0.03
Subjective resilience	2.32	2.29	2.22	2.40
Financial education	0.62	0.64	0.60	0.63
Financial autonomy	4.36	4.74	4.78	4.39
<i>Productive time use</i>				
Productive time use	13.36	13.00	13.24	13.38
Productive time use (wins)	13.34	13.00	13.23	13.37
Productive time use (std)	0.02	-0.11	-0.02	0.03
Productive time use (wins std)	0.02	-0.10	-0.02	0.03
<i>Household behaviour</i>				
Visit ATMs alone	0.52	0.47	0.46	0.58
Feels comfortable visiting ATM alone	0.87	0.87	0.86	0.89
Allowed to go to ATM alone	0.87	0.89	0.92	0.94
Wife earns as much/more than husband	0.33	0.37	0.31	0.29
Partner satisfaction	6.6	6.2	6.4	6.8
Cooperative behaviour	3.06	3.01	2.9	3.08
Women empowerment	3.08	3.22	3.13	3.01
Wife: income hiding	0.34	0.35	0.33	0.31
Husband: income hiding	0.48	0.45	0.48	0.44
Decision making involvement	1.9	1.8	1.5	1.8

Notes: Values are calculated using endline survey data.

Table 7: Endline Descriptive Statistics

	Obs	Sample mean	Treatment mean (all accounts)	Control mean
<b>Covariate post-intervention</b>				
<i>Personal finances</i>				
Total savings	2,540	368533.19	366102.28	377128.21
Total savings (wins)	2,540	340163.59	338616.52	345633.57
Total savings (std)	2,540	0.00	0.00	0.01
Total savings (wins std)	2,540	0.00	0.00	0.01
Total income	2,543	254384.11	256023.21	248593.23
Total income (wins)	2,543	244322.38	245654.89	239614.62
Total income (std)	2,543	0.00	0.00	-0.01
Total income (wins std)	2,543	0.00	0.00	-0.01
Profits	2,352	151388.90	151761.60	150104.54
Profits (wins)	2,352	148724.79	149410.53	146361.63
Profits (std)	2,352	0.00	0.00	-0.01
Profits (wins std)	2,352	0.00	0.00	-0.02
Subjective resilience	2,543	2.33	2.33	2.32
Financial education	2,543	0.62	0.62	0.62
Financial autonomy	2,492	4.51	4.55	4.36
<i>Productive time use</i>				
Productive time use	2,369	13.31	13.29	13.36
Productive time use (wins)	2,369	13.29	13.28	13.34
Productive time use (std)	2,369	0.00	-0.01	0.02
Productive time use (wins std)	2,369	-0.00	-0.00	0.02
<i>Household behaviour</i>				
visit ATMs alone	2,005	0.53	0.53	0.52
Feels comfortable visiting ATM alone	2,005	0.88	0.88	0.87
Allowed to go to ATM alone	2,005	0.92	0.92	0.87
wife earns as much/ more than husband	981	0.31	0.31	0.33
partner satisfaction	2,498	6.61	6.60	6.64
Cooperative behaviour	2,490	3.04	3.04	3.06
Women empowerment	2,537	3.08	3.07	3.08
Wife: income hiding	2,487	0.33	0.32	0.34
Husband: income hiding	2,401	0.46	0.45	0.48
Decision making involvement	2,543	1.99	2.00	1.97

Notes: Values are calculated using endline survey data.

## Admin data

Alongside the survey of household characteristics and decisions, the project team also worked alongside the partnering bank that provided e-savings accounts to the respondents in monitoring how much money was kept in these accounts during the duration of the study. Data has been collected and is presented up to April 2022. In figure 1, we see that respondents that had received training alongside their account had the highest balance (on average) in their e-savings account through most of the duration of the study. From figures 2 and 3, we can see that those who received training also had the highest average amount of lowest balance and maximum balance (meaning, on average the lowest/highest amount of money they kept in their account were still higher than what those from the other treatment arms kept). respondents with private accounts generally had lowest amount of money in their accounts across the three estimates, while those who received announced accounts had the second highest amounts of money saved on average. table 9, and 26-27 provide us with more details regarding this admin data during the first year of collection. A key finding from these tables is the difference between private account holders, those with announced accounts, and those who had training. We see that, although the three account types had similar balance in the initial month, the amount of money kept significantly differs after the first month, with the three account types following the trends seen in aforementioned figures (being that the respondents that received training saved the most money, followed by those with announced accounts and those with private accounts.



Figure 1: Average monthly balance

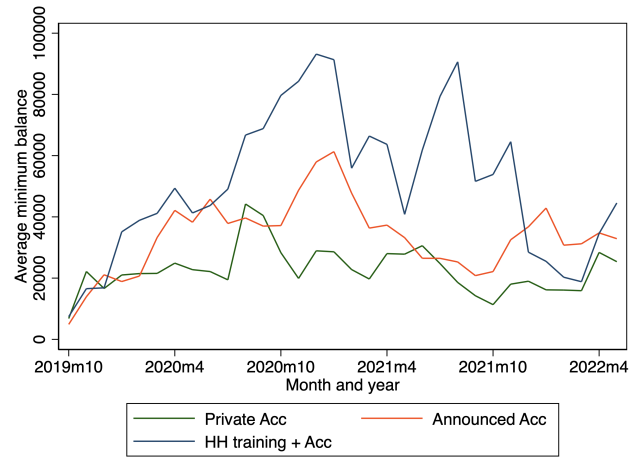


Figure 2: Minimum monthly balance

Figure 3: Maximum monthly balance

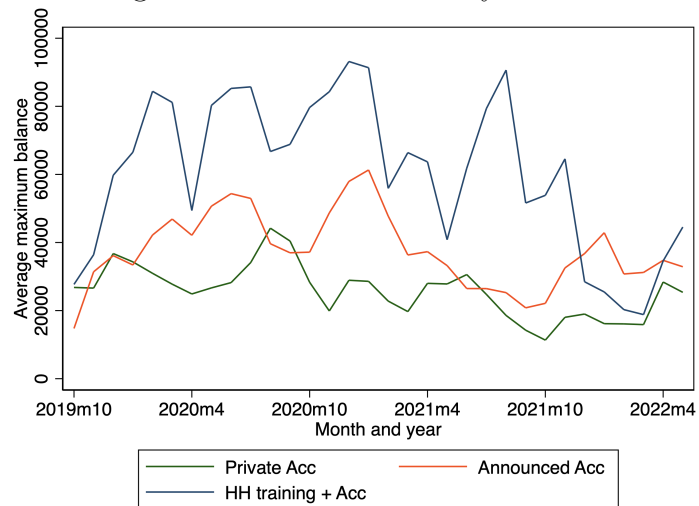


Table 9: Admin data: Average monthly balance

	Obs	Sample Mean	Private Obs	Private Mean	Private SD	Ann Obs	Ann Mean	Ann SD	Training Obs	Training Mean	Training SD	Diff: Priv-Ann	p-Value	Diff: Joint-Tr	p-Value
Oct 19	313	13,465.23	98	15,002.87	48,692.52	89	8,572.94	10,670.33	126	15,724.95	40,980.13	-6,860.518	0.222	7,833.394	0.059
Nov 19	690	20,311.63	220	18,203.27	71,627.21	212	19,480.45	64,705.41	258	22,792.43	68,304.12	825.829	0.900	2,594.291	0.737
Dec 19	793	28,544.95	255	22,286.47	87,244.25	245	27,792.83	96,025.17	293	34,620.66	90,632.47	2,930.572	0.725	7,750.308	0.426
Jan 20	840	32,913.53	265	26,926.96	133,797.90	267	22,571.83	69,474.74	308	47,029.36	152,079.26	-6,453.013	0.493	27,142.647	0.019
Feb 20	840	39,888.05	265	25,370.78	134,391.00	267	33,618.74	165,771.55	308	57,813.32	193,851.98	8,338.452	0.570	23,652.531	0.166
Mar 20	840	40,552.96	265	24,916.13	112,438.27	267	37,731.11	179,055.05	308	56,452.93	202,269.48	13,690.216	0.357	15,454.444	0.385
Apr 20	908	37,035.63	283	23,479.22	107,902.05	280	40,240.88	195,253.45	345	45,554.44	148,855.97	16,957.622	0.272	3,875.487	0.819
May 20	908	40,558.57	283	23,298.42	106,773.49	280	40,934.74	227,327.48	345	54,411.61	159,332.93	20,550.314	0.267	7,990.370	0.685
Jun 20	908	43,739.31	283	23,582.46	109,990.79	280	49,988.19	252,778.13	345	55,202.21	196,875.30	31,346.335	0.118	799.137	0.972
Jul 20	908	44,942.76	283	24,995.87	102,499.38	280	43,289.57	238,477.84	345	62,646.71	235,454.10	22,771.002	0.229	18,618.306	0.428
Aug 20	908	50,210.10	283	41,894.88	254,133.20	280	38,003.23	227,673.94	345	66,938.01	281,173.01	-7,910.227	0.769	19,979.093	0.395
Sep 20	908	47,718.26	283	38,536.90	250,450.19	280	35,450.51	226,601.65	345	65,206.07	310,982.00	-7,479.015	0.782	34,165.181	0.264
Oct 20	908	47,682.50	283	27,553.04	149,415.25	280	35,619.01	225,905.02	345	73,985.14	439,824.30	7,647.405	0.714	51,542.861	0.214
Nov 20	908	49,308.55	283	18,976.88	70,102.47	280	46,627.22	258,589.64	345	76,365.45	530,385.83	31,737.387	0.095	44,836.738	0.365
Total	908	39,039.49	283	24,755.05	96,407.81	280	34,412.52	156,534.93	345	54,512.10	179,276.52	10,042.625	0.454	21,445.676	0.240

Notes: Formal savings values are calculated using admin data provided by NMB. Respondents from the control group are excluded from this analysis.

## 6 Conclusion

This project was intended to enhance our knowledge of whether offering women more control over their household finances and spending decisions will increase their usage of financial products (a savings account) or lead to changes in labour market participation, in anticipation that the money made from this participation will be spent in a way they desire. We expected that this would be accomplished through women being able to keep their income and savings private from family and/or through the introduction of greater acknowledgement from the family that the woman's desires on spending are taken into full consideration. We sought to determine which, if either of these, had the greatest impact on the take-up, usage, and impacts of e-banking and savings accounts for women.

To make this determination, our team collected data through a series of three collection phases. This allowed us to gain greater insight on the financial dynamics of households with female entrepreneurs in rural Tanzania, specifically in regards to a household labor and income participation; savings behavior;, and gender-inclusive decision making dynamics. With the former two portions of data, we came to find that providing e-savings accounts to women, whether the accounts be private, announced, or bundled with training, has either a negative effect on the months income, savings, or productivity of the participating woman or no effect at all. This results is evident in both the data derived from the midline phase and endline phase of the study, and is consistent with previous research findings regarding provision of capital access to female micro-enterprise owners. We have reason to believe that there is an underlying cultural dynamic at play here that may yet to be accounted for in this line of research. For this reason, future research in regards to this study will apply the gender-inclusive decision making dynamics information to determine if certain household decisions or perceptions are behind why women are not further benefiting from greater control over finances.

## References

- Ashraf, N. (2009). Spousal control and intra-household decision making: An experimental study in the philippines, *American Economic Review* **99**(4): 1245–77.  
**URL:** <https://www.aeaweb.org/articles?id=10.1257/aer.99.4.1245>
- Augsburg, B., Caeyers, B., Giunti, S., Malde, B. K. and Smets, S. (2019). Labelled



- Loans, Credit Constraints and Sanitation Investments. The World Bank Policy Research Working Paper No. 8845.
- Baland, J.-M., Bonjean, I., Guirkinger, C. and Ziparo, R. (2015). The economic consequences of mutual help in extended families, *CEPR Discussion Papers 10945*, C.E.P.R. Discussion Papers.  
**URL:** <https://ideas.repec.org/p/cpr/ceprdp/10945.html>
- Banerjee, A., Duflo, E., Glennerster, R. and Kinnan, C. (2015). The miracle of microfinance? evidence from a randomized evaluation, *American Economic Journal: Applied Economics* **7**(1): 22–53.  
**URL:** <http://www.jstor.org/stable/43189512>
- Bernhardt, A., Field, E., Pande, R. and Rigol, N. (2019). Household matters: Revisiting the returns to capital among female microentrepreneurs, *American Economic Review: Insights* **1**(2): 141–60.  
**URL:** <https://www.aeaweb.org/articles?id=10.1257/aeri.20180444>
- Boltz, M. and Chort, I. (2015). The Risk of Polygamy and Wives’ Saving Behavior, *Working Papers DT/2015/12*, DIAL (Développement, Institutions et Mondialisation).  
**URL:** <https://ideas.repec.org/p/dia/wpaper/dt201512.html>
- Carranza, E., Donald, A., Grosset, F. and Kaur, S. (2022). The social tax: Redistributive pressure and labor supply, *Working Paper 30438*, National Bureau of Economic Research.  
**URL:** <http://www.nber.org/papers/w30438>
- Castilla, C. and Walker, T. F. (2012). Gender roles and intra-household allocation: Identifying differences in the incentives to hide money across spouses in Ghana, *2012 Annual Meeting, August 12-14, 2012, Seattle, Washington 124923*, Agricultural and Applied Economics Association.  
**URL:** <https://EconPapers.repec.org/RePEc:ags:aaea12:124923>
- CGAP (2017). Digital Credit in Tanzania: Customer experiences and emerging risks. Available at: <https://www.cgap.org/research/reading-deck/digital-credit-tanzania-customer-experiences-and-emerging-risks> [Accessed: January 1, 2020].
- de Mel, S., McKenzie, D. and Woodruff, C. (2008). Returns to capital in microenterprises: Evidence from a field experiment, *The Quarterly Journal of Economics*

**123**(4): 1329–1372.

**URL:** <http://www.jstor.org/stable/40506211>

Di Falco, S. and Bulte, E. (2011). A dark side of social capital? kinship, consumption, and savings, *Journal of Development Studies* **47**(8): 1128–1151.

**URL:** <https://EconPapers.repec.org/RePEc:taf:jdevst:v:47:y:2011:i:8:p:1128-1151>

Fafchamps, M., McKenzie, D., Quinn, S. R. and Woodruff, C. (2011). When is capital enough to get female microenterprises growing? Evidence from a randomized experiment in Ghana, *Technical report*, National Bureau of Economic Research.

Fiala, N. and He, X. (2017). Unitary or Noncooperative Intrahousehold Model? Evidence from Couples in Uganda, *The World Bank Economic Review* **30**: S77–S85.

Field, E., Pande, R., Rigol, N., Schaner, S. and Troyer Moore, C. (2021). On her own account: How strengthening women’s financial control impacts labor supply and gender norms, *American Economic Review* **111**(7): 2342–75.

**URL:** <https://www.aeaweb.org/articles?id=10.1257/aer.20200705>

Gine, X. and Mansuri, G. (2011). Together we will : experimental evidence on female voting behavior in Pakistan, *Policy Research Working Paper Series 5692*, The World Bank.

**URL:** <https://ideas.repec.org/p/wbk/wbrwps/5692.html>

Grimm, R., Fox, C., Baines, S. and Albertson, K. (2013). Social innovation, an answer to contemporary societal challenges? locating the concept in theory and practice, *Innovation: The European Journal of Social Science Research* **26**(4): 436–455.

**URL:** <https://doi.org/10.1080/13511610.2013.848163>

Jakiela, P. and Ozier, O. (2015). Does Africa Need a Rotten Kin Theorem? Experimental Evidence from Village Economies, *The Review of Economic Studies* **83**(1): 231–268.

**URL:** <https://doi.org/10.1093/restud/rdv033>

Kling, J. R., Liebman, J. B. and Katz, L. F. (2007). Experimental analysis of neighborhood effects, *Econometrica* **75**(1): 83–119.

Kocherlakota, N. (1996). Implications of efficient risk sharing without commitment, *Review of Economic Studies* **63**(4): 595–609.

**URL:** <https://EconPapers.repec.org/RePEc:oup:restud:v:63:y:1996:i:4:p:595-609>.

Lin, W. and Green, D. P. (2016). Standard operating procedures: A safety net for

pre-analysis plans, *PS: Political Science & Politics* **49**(3): 495–500.

Townsend, R. M. (1994). Risk and insurance in village india, *Econometrica* **62**(3): 539–591.

**URL:** <http://www.jstor.org/stable/2951659>

## 7 Tables

For our regression estimations, we’ve followed [Lin and Green \(2016\)](#) in treating missing covariates. If no more than ten percent of the covariate’s values are missing; we recode the missing values to the overall mean (testing sensitivity of estimates to these approaches by comparing results with those obtained from the sample with non-missing covariates).

To deal with missing values on our outcome measures, we will adopt the approach described in [Kling et al. \(2007\)](#) and impute missing values by setting them equal to the mean of the respective outcome variable for the relevant treatment group, and testing sensitivity of main coefficient estimates to this approach by comparing results with those obtained from the sample with non-missing outcome variables.

Questions for which 95 percent of observations have the same value within the treatment group will be omitted from the analysis and will not be included in any indicators or hypothesis tests. If omission decisions result in the exclusion of all constituent variables for an indicator, the indicator will be not be calculated.

Table 10: Baseline 1 Descriptives and tests of balance

	Obs	Sample mean	Treatment mean (all accounts)	Control mean	Regression difference	p-Value
<b>Covariate in 2019 (pre-intervention)</b>						
<i>Socio-demographics</i>						
Age	1264.00	36.92	36.78	37.37	-0.49	0.40
Respondent: Secondary school or more	1264.00	0.26	0.28	0.19	0.09	0.00
Husband: Secondary school or more	1257.00	0.41	0.42	0.36	0.06	0.06
Years married	1261.00	13.60	13.41	14.24	-0.74	0.26
Main income earner	1264.00	0.15	0.15	0.16	-0.02	0.52
Household head	1264.00	0.12	0.11	0.15	-0.05	0.03
Household size (cap)	1264.00	5.13	5.14	5.10	0.09	0.48
No. children	1264.00	2.37	2.39	2.30	0.11	0.26
No. pupils	1133.00	1.91	1.92	1.89	0.07	0.47
Christian	894.00	0.70	0.70	0.72	-0.04	0.23
<i>Assets and PPI</i>						
Owens a TV	1264.00	0.70	0.70	0.71	-0.02	0.55
Owens laterns	1264.00	0.14	0.14	0.15	0.00	0.86
Owens a table	1264.00	0.94	0.94	0.94	0.00	0.91
Cultivates crops	1264.00	0.23	0.23	0.21	0.02	0.56
PPI score	1264.00	59.31	59.22	59.64	-0.74	0.39
PPI income	1264.00	2242.11	2242.50	2240.81	-7.95	0.80
<i>Personal finances</i>						
Total savings	1208.00	369007.33	391317.38	294720.43	121223.75	0.07
Total savings (wins)	1208.00	306980.84	322073.04	256727.60	74679.53	0.03
Total savings (std)	1208.00	0.05	0.07	-0.04	0.14	0.07
Total savings (wins std)	1208.00	0.03	0.06	-0.07	0.16	0.03
Total income	1258.00	408708.35	399761.46	438439.08	-43087.76	0.57
Total income (wins)	1258.00	379655.09	379731.47	379401.28	315.47	0.99
Total income (std)	1258.00	0.07	0.05	0.11	-0.07	0.57
Total income (wins std)	1258.00	0.07	0.07	0.07	0.00	0.99
Profits	1234.00	181757.61	181111.46	183928.93	-3514.28	0.82
Profits (wins)	1234.00	172453.72	171524.71	175575.58	-3495.29	0.77
Profits (std)	1234.00	0.13	0.13	0.14	-0.02	0.82
Profits (wins std)	1234.00	0.15	0.15	0.17	-0.02	0.77
Subjective resilience	1091.00	2.05	2.08	1.95	0.12	0.11
Financial education	1264.00	0.64	0.64	0.64	0.00	0.88
Financial autonomy	1262.00	4.10	4.06	4.23	-0.15	0.57
<i>Productive time use</i>						
Productive time use	1264.00	13.38	13.40	13.30	0.07	0.67
Productive time use (wins)	1264.00	13.37	13.39	13.29	0.06	0.70
Productive time use (std)	1264.00	-0.08	-0.07	-0.12	0.03	0.67
Productive time use (wins std)	1264.00	-0.09	-0.08	-0.12	0.02	0.70
<i>Household behaviour</i>						
Woman should decide work her own money	1264.00	0.64	0.64	0.64	0.00	0.97
Woman should decide her own money	1264.00	0.40	0.41	0.37	0.04	0.28
Partner satisfaction	724.00	7.31	7.33	7.23	0.13	0.58
Cooperative behaviour	1264.00	3.22	3.23	3.19	0.02	0.79
Women empowerment	1263.00	3.13	3.13	3.14	-0.03	0.58
Respondent: Income hiding	1261.00	0.30	0.29	0.32	-0.02	0.44
Husband: Income hiding	1217.00	0.46	0.45	0.48	-0.04	0.30

*Notes:* Values are calculated using baseline survey data from the first phase of data collection. The last column reports the p-value of the OLS regression of the listed baseline characteristics on the indicator for random account provision plus market fixed effects. Pure control group respondents are excluded from this analysis.

Table 11: Baseline 2 Descriptives and tests of balance

	Obs	Sample mean	Treatment mean (all accounts)	Control mean	Regression difference	p-Value
<b>Covariate in 2019 (pre-intervention)</b>						
<i>Socio-demographics</i>						
Age	1601	36.58	36.93	35.39	1.390	0.016
Respondent: Secondary school or more	1601	0.32	0.30	0.35	-0.053	0.101
Husband: Secondary school or more	1594	0.40	0.39	0.44	-0.063	0.059
Years married	1601	13.39	13.62	12.61	0.786	0.202
Main income earner	1601	0.09	0.09	0.09	0.007	0.713
Houshold head	1601	0.08	0.07	0.08	-0.004	0.827
Household size (cap)	1601	4.82	4.84	4.76	0.066	0.558
No. children	1601	2.30	2.30	2.30	-0.020	0.829
No. pupils	1483	1.70	1.69	1.71	-0.023	0.793
Christian	1601	0.75	0.75	0.76	-0.015	0.542
<i>Assets and PPI</i>						
Owens a TV	1601	0.64	0.64	0.65	-0.017	0.594
Owens laterns	1601	0.13	0.14	0.10	0.050	0.016
Owens a table	1601	0.92	0.92	0.92	-0.000	1.000
Cultivates crops	1601	0.41	0.42	0.38	0.085	0.008
PPI score	1601	53.77	53.81	53.62	0.602	0.514
PPI income	1601	2083.41	2092.16	2054.07	62.627	0.084
<i>Personal finances</i>						
Total savings	1579	296056.17	289125.58	319107.52	-18143.175	0.685
Total savings (wins)	1579	281887.71	277501.20	296477.38	-10682.513	0.742
Total savings (std)	1579	-0.04	-0.05	-0.01	-0.021	0.685
Total savings (wins std)	1579	-0.02	-0.03	0.01	-0.022	0.742
Total income	1596	328399.97	325389.72	338516.37	-8417.671	0.841
Total income (wins)	1596	320755.86	319495.41	324991.78	-1483.097	0.965
Total income (std)	1596	-0.05	-0.06	-0.04	-0.013	0.841
Total income (wins std)	1596	-0.05	-0.06	-0.04	-0.003	0.965
Profits	1571	133289.17	138495.70	115775.00	30741.573	0.001
Profits (wins)	1571	129877.33	134152.18	115497.22	25453.322	0.002
Profits (std)	1571	-0.10	-0.08	-0.19	0.151	0.001
Profits (wins std)	1571	-0.12	-0.09	-0.21	0.164	0.002
Subjective resilience	1600	1.99	1.99	2.00	-0.039	0.543
Financial education	1601	0.61	0.61	0.61	0.007	0.562
Financial autonomy	1599	4.02	3.92	4.37	-0.374	0.146
<i>Productive time use</i>						
Productive time use	1601	13.75	13.82	13.49	0.352	0.027
Productive time use (wins)	1601	13.74	13.82	13.47	0.359	0.023
Productive time use (std)	1601	0.07	0.10	-0.04	0.144	0.027
Productive time use (wins std)	1601	0.07	0.10	-0.05	0.148	0.023
<i>Household behaviour</i>						
Woman should decide work	1601	0.70	0.70	0.71	-0.029	0.343
Woman should decide her own money	1601	0.37	0.38	0.32	0.087	0.007
Partner satisfaction	1598	7.56	7.60	7.40	0.167	0.310
Cooperative behaviour	1601	3.28	3.28	3.26	0.029	0.584
Women empowerment	1601	3.04	3.03	3.04	-0.025	0.561
Respondent: Income hiding	1601	0.31	0.32	0.30	-0.014	0.669
Husband: Income hiding	1526	0.44	0.44	0.45	-0.047	0.183

*Notes:* Values are calculated using baseline survey data from the second phase of data collection. The last column reports the p-value of the OLS regression of the listed baseline characteristics on the indicator for random account provision plus market fixed effects. Pure control group respondents are excluded from this analysis.

Table 12: Baseline 1 Mean comparison of different treatment arms

	Pure control group mean	Control group mean	Treatment arm 1 mean	Treatment arm 2 mean	Treatment arm 3 mean
<b>Covariate in 2019 (pre-intervention)</b>					
<i>Socio-demographics</i>					
Age		37.37	36.32	37.35	36.66
Respondent: Secondary school or more		0.19	0.30	0.23	0.30
Husband: Secondary school or more		0.36	0.41	0.42	0.43
Years married		14.24	13.34	14.27	12.70
Main income earner		0.16	0.14	0.13	0.17
Household head		0.15	0.12	0.10	0.10
Household size (cap)		5.10	5.18	5.15	5.11
No. children		2.30	2.45	2.32	2.39
No. pupils		1.89	1.91	1.94	1.90
Christian		0.72	0.72	0.71	0.66
<i>Assets and PPI</i>					
Owens a TV		0.71	0.66	0.69	0.73
Owens laterns		0.15	0.15	0.16	0.12
Owens a table		0.94	0.94	0.94	0.93
Cultivates crops		0.21	0.25	0.20	0.24
PPI score		59.64	58.94	58.64	59.98
PPI income		2240.81	2253.01	2217.85	2255.71
<i>Personal finances</i>					
Total savings		294720.43	429012.12	355460.93	390670.96
Total savings (wins)		256727.60	325469.45	334434.44	307916.47
Total savings (std)		-0.04	0.12	0.03	0.07
Total savings (wins std)		-0.07	0.07	0.09	0.03
Total income		438439.08	342423.84	480858.84	375646.78
Total income (wins)		379401.28	341761.59	420862.00	375215.75
Total income (std)		0.11	-0.03	0.18	0.02
Total income (wins std)		0.07	-0.01	0.15	0.06
Profits		183928.93	163347.97	201096.15	178262.39
Profits (wins)		175575.58	162152.02	181769.23	170294.46
Profits (std)		0.14	0.04	0.23	0.12
Profits (wins std)		0.17	0.09	0.21	0.14
Subjective resilience		1.95	2.07	2.02	2.15
Financial education		0.64	0.65	0.63	0.63
Financial autonomy		4.23	3.84	4.35	3.99
<i>Productive time use</i>					
Productive time use		13.30	13.44	13.60	13.20
Productive time use (wins)		13.29	13.43	13.56	13.20
Productive time use (std)		-0.12	-0.06	0.00	-0.16
Productive time use (wins std)		-0.12	-0.06	-0.01	-0.16
<i>Household behaviour</i>					
Woman should decide work		0.64	0.61	0.64	0.66
Woman should decide her own money		0.37	0.42	0.38	0.42
Partner satisfaction		7.23	7.15	7.32	7.52
Cooperative behaviour		3.19	3.24	3.23	3.21
Women empowerment		3.14	3.15	3.08	3.16
Respondent: Income hiding		0.32	0.29	0.27	0.31
Husband: Income hiding		0.48	0.43	0.45	0.46

*Notes:* Values are calculated using baseline survey data for respondents who were selected in the first phase of data collection. Pure control group respondents are excluded from this analysis.

Table 13: Baseline 2 Mean comparison of different treatment arms

	Pure control group mean	Control group mean	Treatment arm 1 mean	Treatment arm 2 mean	Treatment arm 3 mean
<b>Covariate in 2019 (pre-intervention)</b>					
<i>Socio-demographics</i>					
Age		35.39	0	36.90	36.94
Respondent: Secondary school or more		0.35	0	0.28	0.31
Husband: Secondary school or more		0.44	0	0.37	0.39
Years married		12.61	0	13.49	13.67
Main income earner		0.09	0	0.10	0.09
Household head		0.08	0	0.08	0.07
Household size (cap)		4.76	0	4.89	4.82
No. children		2.30	0	2.35	2.29
No. pupils		1.71	0	1.76	1.67
Christian		0.76	0	0.71	0.76
<i>Assets and PPI</i>					
Owens a TV		0.65	0	0.64	0.64
Owens laterns		0.10	0	0.14	0.14
Owens a table		0.92	0	0.91	0.93
Cultivates crops		0.38	0	0.36	0.44
PPI score		53.62	0	53.71	53.85
PPI income		2054.07	0	2089.35	2093.26
<i>Personal finances</i>					
Total savings		319107.52	0	259399.85	300926.94
Total savings (wins)		296477.38	0	259254.92	284745.12
Total savings (std)		-0.01	0	-0.08	-0.03
Total savings (wins std)		0.01	0	-0.07	-0.02
Total income		338516.37	0	335269.81	321538.16
Total income (wins)		324991.78	0	321385.75	318758.50
Total income (std)		-0.04	0	-0.04	-0.06
Total income (wins std)		-0.04	0	-0.05	-0.06
Profits		115775.00	0	133377.25	140485.55
Profits (wins)		115497.22	0	131607.34	135141.51
Profits (std)		-0.19	0	-0.10	-0.07
Profits (wins std)		-0.21	0	-0.11	-0.09
Subjective resilience		2.00	0	1.98	2.00
Financial education		0.61	0	0.60	0.61
Financial autonomy		4.37	0	3.88	3.93
<i>Productive time use</i>					
Productive time use		13.49	0	13.96	13.77
Productive time use (wins)		13.47	0	13.96	13.77
Productive time use (std)		-0.04	0	0.15	0.08
Productive time use (wins std)		-0.05	0	0.16	0.08
<i>Household behaviour</i>					
Woman should decide work		0.71	0	0.67	0.72
Woman should decide her own money		0.32	0	0.39	0.38
Partner satisfaction		7.40	0	7.49	7.64
Cooperative behaviour		3.26	0	3.24	3.29
Women empowerment		3.04	0	2.96	3.06
Respondent: Income hiding		0.30	0	0.32	0.31
Husband: Income hiding		0.45	0	0.42	0.44

Notes: Values are calculated using baseline survey data for respondents who were selected in the second phase of data collection. Pure control group respondents are excluded from this analysis.

Table 14: Endline Phase 1 Mean comparison of different treatment arms

	Control group mean	Treatment arm 1 mean	Treatment arm 2 mean	Treatment arm 3 mean
<b>Covariate post-intervention</b>				
<i>Personal finances</i>				
Total savings	553046.32	508922.77	352518.87	579388.46
Total savings (wins)	462325.26	402782.67	336740.57	474305.82
Total savings (std)	0.22	0.17	-0.02	0.25
Total savings (wins std)	0.25	0.13	-0.01	0.27
Total income	285811.52	278926.11	282525.82	323935.95
Total income (wins)	270890.05	268334.98	267032.86	298109.50
Total income (std)	0.08	0.06	0.07	0.18
Total income (wins std)	0.08	0.08	0.07	0.17
Profits	178180.23	169172.04	179750.00	200956.52
Profits (wins)	172947.67	167827.96	176847.83	190173.91
Profits (std)	0.15	0.10	0.16	0.28
Profits (wins std)	0.15	0.12	0.18	0.26
Subjective resilience	2.27	2.33	2.17	2.35
Financial education	0.63	0.66	0.60	0.63
Financial autonomy	4.03	4.59	4.88	4.26
<i>Productive time use</i>				
Productive time use	13.27	12.99	13.00	13.27
Productive time use (wins)	13.22	12.99	12.97	13.26
Productive time use (std)	-0.01	-0.11	-0.11	-0.01
Productive time use (wins std)	-0.03	-0.11	-0.11	-0.01
<i>Household behaviour</i>				
Visit ATMs alone	0.52	0.49	0.46	0.57
Feels comfortable visiting ATM alone	0.87	0.89	0.82	0.88
Allowed to go to ATM alone	0.87	0.91	0.92	0.93
Wife earns as much/more than husband	0.37	0.40	0.33	0.27
Partner satisfaction	6.30	6.21	6.10	6.58
Cooperative behaviour	3.03	3.03	2.90	3.07
Women empowerment	3.17	3.10	3.16	3.08
Wife: income hiding	0.42	0.34	0.38	0.38
Husband: income hiding	0.58	0.46	0.44	0.50
Decision making involvement	1.90	1.93	1.91	2.03

Notes: Values are calculated using endline survey data From the first phase of endline data collection.



Table 15: Endline Phase 2 Mean comparison of different treatment arms

	Control group mean	Treatment arm 1 mean	Treatment arm 2 mean	Treatment arm 3 mean
<b>Covariate post-intervention</b>				
<i>Personal finances</i>				
Total savings	286791.89	225702.13	280505.03	323131.48
Total savings (wins)	285710.81	225702.13	273613.49	321350.06
Total savings (std)	-0.10	-0.17	-0.10	-0.05
Total savings (wins std)	-0.11	-0.23	-0.13	-0.04
Total income	229380.54	216382.98	209522.75	247915.35
Total income (wins)	223469.73	216382.98	206612.70	239294.66
Total income (std)	-0.06	-0.10	-0.12	-0.02
Total income (wins std)	-0.07	-0.09	-0.12	-0.02
Profits	136577.87	229883.72	134031.09	133320.69
Profits (wins)	133552.66	227558.14	132854.62	132434.16
Profits (std)	-0.08	0.44	-0.10	-0.10
Profits (wins std)	-0.10	0.50	-0.10	-0.10
Subjective resilience	2.35	2.14	2.25	2.41
Financial education	0.61	0.57	0.60	0.63
Financial autonomy	4.53	5.36	4.73	4.42
<i>Productive time use</i>				
Productive time use	13.41	13.07	13.37	13.41
Productive time use (wins)	13.40	13.07	13.36	13.40
Productive time use (std)	0.03	-0.08	0.02	0.04
Productive time use (wins std)	0.04	-0.08	0.02	0.04
<i>Household behaviour</i>				
visit ATMs alone	0	0.40	0.46	0.58
Feels comfortable visiting ATM alone	0	0.79	0.88	0.89
Allowed to go to ATM alone	0	0.79	0.91	0.94
Wife earns as much/more than husband	0.31	0.20	0.29	0.30
Partner satisfaction	6.81	6.19	6.52	6.88
Cooperative behaviour	3.07	2.93	3.02	3.08
Women empowerment	3.03	3.74	3.11	3.00
Wife: income hiding	0.30	0.37	0.31	0.30
Husband: income hiding	0.43	0.38	0.50	0.42
Decision making involvement	2.01	1.77	1.96	2.05

Notes: Values are calculated using endline survey data from second phase of data collection.

Table 16: Endline Phase 1 Descriptive Statistics

	Obs	Sample mean	Treatment mean (all accounts)	Control mean	Regression difference	p-Value
<b>Covariate post-intervention</b>						
<i>Personal finances</i>						
Total savings	846	499795.75	484372.57	553046.32	-78738.069	0.491
Total savings (wins)	846	420064.90	407824.86	462325.26	-56587.762	0.262
Total savings (std)	846	0.16	0.14	0.22	-0.094	0.491
Total savings (wins std)	846	0.16	0.14	0.25	-0.114	0.262
Total income	849	294207.89	296645.14	285811.52	12329.517	0.739
Total income (wins)	849	277070.08	278863.98	270890.05	8301.504	0.752
Total income (std)	849	0.10	0.11	0.08	0.032	0.739
Total income (wins std)	849	0.10	0.11	0.08	0.026	0.752
Profits	749	182623.50	183948.01	178180.23	7994.776	0.641
Profits (wins)	749	177395.19	178720.97	172947.67	7281.663	0.607
Profits (std)	749	0.18	0.18	0.15	0.045	0.641
Profits (wins std)	749	0.18	0.19	0.15	0.046	0.607
Subjective resilience	849	2.28	2.28	2.27	0.009	0.908
Financial education	849	0.63	0.63	0.63	-0.005	0.789
Financial autonomy	821	4.45	4.57	4.03	0.509	0.130
<i>Productive time use</i>						
Productive time use	758	13.13	13.09	13.27	-0.174	0.518
Productive time use (wins)	758	13.11	13.08	13.22	-0.142	0.584
Productive time use (std)	758	-0.06	-0.08	-0.01	-0.061	0.518
Productive time use (wins std)	758	-0.06	-0.08	-0.03	-0.051	0.584
<i>Household behaviour</i>						
visit ATMs alone	681	0.51	0.51	0.52	-0.007	0.946
Feels comfortable visiting ATM alone	681	0.86	0.86	0.87	-0.008	0.905
Allowed to go to ATM alone	681	0.92	0.92	0.87	0.023	0.698
wife earns as much/ more than husband	332	0.34	0.33	0.37	-0.059	0.388
partner satisfaction	824	6.30	6.31	6.30	0.007	0.981
Cooperative behaviour	817	3.01	3.00	3.03	-0.033	0.690
Women empowerment	845	3.12	3.11	3.17	-0.070	0.240
Wife: income hiding	814	0.38	0.37	0.42	-0.049	0.247
Husband: income hiding	764	0.50	0.47	0.58	-0.101	0.019
Decision making involvement	849	1.95	1.96	1.90	0.051	0.403

Notes: Values are calculated using endline survey data.

Table 17: Endline Phase 2 Descriptive Statistics

	Obs	Sample mean	Treatment mean (all accounts)	Control mean	Regression difference	p-Value
<b>Covariate post-intervention</b>						
<i>Personal finances</i>						
Total savings	1694	302979.40	307503.10	286791.89	20591.823	0.489
Total savings (wins)	1694	300260.09	304325.98	285710.81	18924.355	0.514
Total savings (std)	1694	-0.08	-0.07	-0.10	0.025	0.489
Total savings (wins std)	1694	-0.08	-0.07	-0.11	0.038	0.514
Total income	1694	234425.21	235834.97	229380.54	10943.803	0.605
Total income (wins)	1694	227909.86	229150.68	223469.73	6419.210	0.735
Total income (std)	1694	-0.05	-0.05	-0.06	0.028	0.605
Total income (wins std)	1694	-0.05	-0.05	-0.07	0.020	0.735
Profits	1603	136794.57	136856.66	136577.87	-2867.70	0.807
Profits (wins)	1603	135328.57	135837.40	133552.66	-254.093	0.980
Profits (std)	1,603	-0.08	-0.08	-0.08	-0.016	0.807
Profits (wins std)	1,603	-0.09	-0.08	-0.10	-0.002	0.980
Subjective resilience	1,694	2.36	2.36	2.35	-0.000	0.995
Financial education	1,694	0.62	0.62	0.61	0.014	0.286
Financial autonomy	1,671	4.54	4.54	4.53	0.148	0.547
<i>Productive time use</i>						
Productive time use	1611	13.39	13.39	13.41	-0.011	0.937
Productive time use (wins)	1611	13.38	13.37	13.40	-0.013	0.927
Productive time use (std)	1611	0.03	0.03	0.03	-0.004	0.937
Productive time use (wins std)	1611	0.03	0.03	0.04	-0.005	0.927
<i>Household behaviour</i>						
visit ATMs alone	1324	0.54	0.54	0	0.000	0
Feels comfortable visiting ATM alone	1324	0.89	0.89	0	0.000	0
Allowed to go to ATM alone	1324	0.93	0.93	0	0.000	0
wife earns as much/ more than husband	649	0.30	0.30	0.31	0.014	0.776
partner satisfaction	1674	6.76	6.75	6.81	-0.168	0.353
Cooperative behaviour	1673	3.06	3.06	3.07	-0.066	0.246
Women empowerment	1673	0.30	0.30	0.30	0.001	0.969
Wife: income hiding	1673	0.30	0.30	0.30	0.001	0.969
Husband: income hiding	1637	0.44	0.44	0.43	0.008	0.796
Decision making involvement	1694	2.01	2.02	2.01	0.019	0.668

Notes: Values are calculated using endline survey data.

## 7.1 Primary Midline Outcomes

Table 18: Primary outcomes

	Total income (wins std) $\beta$ / SE	Productive time use (wins) $\beta$ / SE	Total savings (wins std) $\beta$ / SE	Food security $\beta$ / SE	Subjective resilience $\beta$ / SE
Bank account	-0.096 (0.077)	-0.256 (0.211)	0.022 (0.072)	0.010 (0.059)	-0.069 (0.076)
Bank account (Ancova)	-0.096 (0.076)	-0.250 (0.209)	0.016 (0.069)		
Observations	1029	1051	1039	1051	1051
Control Mean	0.06	13.46	-0.01	1.40	2.24
Control SD	1.08	2.85	0.83	0.81	0.99
R-squared	0.055	0.054	0.054	0.064	0.053
P-WYoung	0.660	0.660	0.950	0.950	0.720
Private account	-0.183** (0.087)	-1.133*** (0.299)	0.123 (0.106)	0.058 (0.073)	-0.087 (0.100)
Announced account	-0.027 (0.096)	-0.026 (0.263)	0.010 (0.086)	0.005 (0.071)	-0.042 (0.092)
Account and training	-0.084 (0.091)	0.260 (0.238)	-0.050 (0.081)	-0.025 (0.070)	-0.079 (0.087)
Observations	1029	1051	1039	1051	1051
Control Mean	0.06	13.46	-0.01	1.40	2.24
Control SD	1.08	2.85	0.83	0.81	0.99
R-squared	0.058	0.081	0.058	0.065	0.053
Private = Announced	0.067	0.000	0.275	0.452	0.653
Announced = HH training	0.516	0.259	0.474	0.662	0.671
P-WYoung: Private acc	0.260	0.000	0.950	1.000	1.000
P-WYoung: Announced acc	1.000	1.000	1.000	1.000	1.000
P-WYoung: HH training	0.980	0.960	1.000	1.000	0.990

*Notes:* The table reports coefficients of multivariate regressions with market fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  denote statistical significance.

Table 19: Primary outcomes - wins, no std

	Total income (wins, no std) $\beta$ / SE	Wage earnings (wins, no std) $\beta$ / SE	Profits (wins, no std) $\beta$ / SE	Hrs wage work $\beta$ / SE	Hrs chores $\beta$ / SE	Total savings (wins, no std) $\beta$ / SE	Not worry about food $\beta$ / SE	No food shortage $\beta$ / SE	Possibility to deal with shocks $\beta$ / SE	Difficulty to deal with shocks $\beta$ / SE
Bank account	-17284.921 (13891.952)	-34008.772 (38943.848)	-16547.258 (14438.583)	0.011 (0.260)	-0.287 (0.183)	12463.644 (41541.979)	-0.003 (0.035)	0.013 (0.032)	-0.125 (0.084)	-0.013 (0.075)
Observations	1029	40	958	1051	1051	1039	1051	1051	1051	1051
Control Mean	161550.00	56555.56	168559.47	9.75	3.74	346898.76	0.67	0.73	2.45	2.04
Control SD	193351.56	79632.14	195771.61	3.43	2.43	480992.01	0.47	0.44	1.09	1.00
R-squared	0.055	0.601	0.057	0.059	0.046	0.054	0.047	0.076	0.052	0.053
Private account	-32942.806** (15537.694)	15331.816 (41866.021)	-36386.530** (16204.578)	-0.361 (0.345)	-0.811*** (0.194)	71327.188 (61344.948)	0.048 (0.043)	0.010 (0.040)	-0.133 (0.110)	-0.040 (0.098)
Announced account	-4878.625 (17271.429)	-43938.757 (41365.244)	578.751 (18306.578)	0.252 (0.327)	-0.275 (0.224)	5493.902 (49767.918)	-0.023 (0.043)	0.028 (0.038)	-0.086 (0.101)	0.001 (0.091)
Account and training	-15139.607 (16301.910)	-55499.001 (40061.826)	-14715.100 (16846.094)	0.102 (0.307)	0.133 (0.229)	-28980.520 (46579.021)	-0.026 (0.042)	0.002 (0.038)	-0.154 (0.096)	-0.004 (0.087)
Observations	1029	40	958	1051	1051	1039	1051	1051	1051	1051
Control Mean	161550.00	56555.56	168559.47	9.75	3.74	346898.76	0.67	0.73	2.45	2.04
Control SD	193351.56	79632.14	195771.61	3.43	2.43	480992.01	0.47	0.44	1.09	1.00
R-squared	0.058	0.648	0.062	0.063	0.065	0.058	0.051	0.076	0.053	0.053
Private = Announced	0.067	0.076	0.025	0.088	0.005	0.275	0.094	0.645	0.657	0.672
Announced = HH training	0.516	0.748	0.361	0.643	0.071	0.474	0.930	0.476	0.466	0.954

Notes: The table reports coefficients of multivariate regressions with market fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  denote statistical significance.

Table 20: Primary outcomes - Dar es Salaam

	Total income (wins std) $\beta$ / SE	Productive time use (wins) $\beta$ / SE	Total savings (wins std) $\beta$ / SE	Food security $\beta$ / SE	Subjective resilience $\beta$ / SE
Bank account	-0.070 (0.128)	0.192 (0.327)	-0.007 (0.112)	0.173* (0.094)	0.024 (0.119)
Observations	436	446	439	446	446
Control Mean	0.13	13.26	0.05	1.25	2.21
Control SD	1.17	2.81	0.79	0.86	1.00
R-squared	0.046	0.060	0.068	0.092	0.047
P-WYoung	0.970	0.970	0.980	0.290	0.980
Private account	-0.097 (0.145)	-0.461 (0.434)	0.143 (0.176)	0.197* (0.115)	0.202 (0.157)
Announced account	0.019 (0.167)	0.129 (0.432)	-0.110 (0.122)	0.197* (0.115)	-0.011 (0.146)
Account and training	-0.112 (0.143)	0.689* (0.356)	-0.042 (0.125)	0.139 (0.109)	-0.076 (0.135)
Observations	436	446	439	446	446
Control Mean	0.13	13.26	0.05	1.25	2.21
Control SD	1.17	2.81	0.79	0.86	1.00
R-squared	0.048	0.079	0.075	0.093	0.056
Private = Announced	0.440	0.192	0.116	0.999	0.169
Announced = HH training	0.374	0.159	0.578	0.592	0.631
P-WYoung: Private acc	0.970	0.940	0.970	0.630	0.880
P-WYoung: Announced acc	0.990	0.980	0.970	0.630	0.990
P-WYoung: HH training	0.970	0.510	0.980	0.880	0.970

*Notes:* The table reports coefficients of multivariate regressions with market fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  denote statistical significance.

Table 21: Primary outcomes - Mwanza & Shinyanga

	Total income (wins std) $\beta$ / SE	Productive time use (wins) $\beta$ / SE	Total savings (wins std) $\beta$ / SE	Food security $\beta$ / SE	Subjective resilience $\beta$ / SE
Bank account	-0.115 (0.096)	-0.567** (0.275)	0.042 (0.094)	-0.103 (0.075)	-0.134 (0.098)
Observations	593	605	600	605	605
Control Mean	0.00	13.59	-0.06	1.50	2.26
Control SD	1.01	2.88	0.86	0.76	0.99
R-squared	0.055	0.052	0.040	0.049	0.058
P-WYoung	0.430	0.160	0.630	0.430	0.430
Private account	-0.245** (0.106)	-1.603*** (0.406)	0.108 (0.132)	-0.035 (0.093)	-0.291** (0.128)
Announced account	-0.056 (0.116)	-0.140 (0.331)	0.083 (0.118)	-0.121 (0.089)	-0.063 (0.117)
Account and training	-0.056 (0.117)	-0.055 (0.320)	-0.062 (0.106)	-0.146 (0.092)	-0.062 (0.114)
Observations	593	605	600	605	605
Control Mean	0.00	13.59	-0.06	1.50	2.26
Control SD	1.01	2.88	0.86	0.76	0.99
R-squared	0.062	0.087	0.044	0.052	0.065
Private = Announced	0.063	0.000	0.853	0.344	0.070
Announced = HH training	0.998	0.799	0.193	0.780	0.995
P-WYoung: Private acc	0.230	0.000	1.000	1.000	0.250
P-WYoung: Announced acc	1.000	1.000	1.000	0.750	1.000
P-WYoung: HH training	1.000	1.000	1.000	0.650	1.000

*Notes:* The table reports coefficients of multivariate regressions with market fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  denote statistical significance.

## 7.2 Primary Endline Outcomes

Table 22: Primary outcomes (Endline)

	income total (wins std imp) $\beta$ / SE	work hours (wins nostd imp) $\beta$ / SE	saving total (wins std imp) $\beta$ / SE
Bank account	0.026 (0.048)	-0.130 (0.120)	-0.015 (0.053)
Observations	2252	2252	2252
Control Mean	0.00	13.38	0.04
Control SD	0.94	2.39	1.06
R-squared	0.131	0.157	0.083
P-WYoung	0.830	0.590	0.850
Announced account	-0.035 (0.052)	-0.028 (0.145)	-0.096* (0.056)
Account and training	0.073 (0.051)	-0.089 (0.122)	0.053 (0.053)
Observations	2252	2252	2252
Control Mean	0.00	13.38	0.04
Control SD	0.94	2.39	1.06
R-squared	0.133	0.156	0.086
Announced = HH training	0.034	0.659	0.006
Private acc: P-WYoung	0.820	0.860	0.390
Announced acc: P-WYoung	0.520	0.820	0.790
Acc & training: P-WYoung	0	0	0

*Notes:* The table reports coefficients of multivariate regressions with market fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  denote statistical significance.

Table 24: Primary outcomes - Dar es Salaam (Endline)

	income total (wins std imp) $\beta$ / SE	work hours (wins nostd imp) $\beta$ / SE	saving total (wins std imp) $\beta$ / SE
Bank account	0.053 (0.133)	-0.027 (0.312)	-0.023 (0.140)
Observations	456	456	456
Control Mean	0.21	12.89	0.21
Control SD	1.09	2.61	1.18
R-squared	0.055	0.058	0.062
P-WYoung	0.960	1.000	1.000
Announced account	0.038 (0.162)	-0.106 (0.412)	-0.220 (0.164)
Account and training	0.060 (0.159)	0.051 (0.349)	0.046 (0.165)
Observations	456	456	456
Control Mean	0.21	12.89	0.21
Control SD	1.09	2.61	1.18
R-squared	0.055	0.059	0.071
Announced = HH training	0.884	0.666	0.079
Private acc: P-WYoung	1.000	1.000	0.280
Announced acc: P-WYoung	1.000	1.000	1.000
Acc & training: P-WYoung	0	0	0

*Notes:* The table reports coefficients of multivariate regressions with market fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  denote statistical significance.



Table 23: Endline Auxiliary Primary outcomes - wins, no std

	Wage earnings (wins) $\beta$ / SE	Profits (wins) $\beta$ / SE	Hrs wage work $\beta$ / SE	Hrs chores $\beta$ / SE	food security $\beta$ / SE	Subjective resilience $\beta$ / SE
Bank account	11647.059 (66317.194)	2707.907 (7975.323)	-0.141 (0.149)	0.008 (0.097)	-0.015 (0.019)	-0.002 (0.049)
Observations	63	2083	2100	2100	2252	2252
Control Mean	114210.53	151247.84	10.03	3.38	0.22	2.36
Control SD	125258.21	157506.76	2.84	1.96	0.38	1.00
R-squared	0.484	0.154	0.102	0.184	0.088	0.095
Announced account	1181.113 (48524.087)	3937.801 (9389.455)	-0.015 (0.175)	-0.012 (0.103)	0.023 (0.021)	-0.129** (0.055)
Account and training	-10266.818 (77136.264)	8736.412 (8258.966)	-0.209 (0.151)	0.125 (0.097)	-0.035* (0.018)	0.032 (0.050)
Observations	63	2083	2100	2100	2252	2252
Control Mean	114210.53	151247.84	10.03	3.38	0.22	2.36
Control SD	125258.21	157506.76	2.84	1.96	0.38	1.00
R-squared	0.484	0.155	0.102	0.185	0.091	0.099
Announced = HH training	0.855	0.595	0.240	0.167	0.004	0.002

Notes: The table reports coefficients of multivariate regressions with market fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  denote statistical significance.

Table 25: Primary outcomes - Mwanza & Shinyanga (Endline)

	income total (wins std imp) $\beta$ / SE	work hours (wins nostd imp) $\beta$ / SE	saving total (wins std imp) $\beta$ / SE
Bank account	0.019 (0.050)	-0.156 (0.128)	-0.013 (0.056)
Observations	1796	1796	1796
Control Mean	-0.05	13.51	-0.01
Control SD	0.89	2.32	1.03
R-squared	0.145	0.179	0.082
P-WYoung	0.850	0.450	0.850
Announced account	-0.045 (0.053)	-0.022 (0.155)	-0.047 (0.061)
Account and training	0.082 (0.053)	-0.129 (0.132)	0.074 (0.058)
Observations	1796	1796	1796
Control Mean	-0.05	13.51	-0.01
Control SD	0.89	2.32	1.03
R-squared	0.148	0.179	0.084
Announced = HH training	0.015	0.467	0.035
Private acc: P-WYoung	0.790	0.840	0.790
Announced acc: P-WYoung	0.420	0.790	0.630
Acc & training: P-WYoung	0	0	0

*Notes:* The table reports coefficients of multivariate regressions with market fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  denote statistical significance.

Table 26: Admin data: Minimum monthly balance

Obs	Sample Mean	Private Obs	Private Mean	Private SD	Ann Obs	Ann Mean	Ann SD	Training Obs	Training Mean	Training SD	Diff: Priv-Ann	p-Value	Diff: Joint-Tr	p-Value
Oct 19	159	48	6,805.15	7,982.16	44	4,892.73	2,428.84	67	7,425.67	15,054.49	-1,835.191	0.151	2,391.901	0.210
Nov 19	316	100	22,166.74	86,862.30	90	13,925.33	9,719.42	126	16,556.80	28,171.96	-10,338.678	0.307	4,098.035	0.231
Dec 19	793	255	16,611.71	75,005.10	245	21,095.60	77,808.83	293	16,805.20	60,647.44	2,934.681	0.667	-4,201.470	0.588
Jan 20	840	265	21,025.72	126,559.17	267	18,887.03	59,080.70	308	35,041.28	121,430.53	-3,335.814	0.698	18,050.505	0.051
Feb 20	840	265	21,485.73	114,954.41	267	20,682.95	71,808.25	308	38,793.46	138,907.74	-2,343.413	0.784	18,061.810	0.066
Mar 20	840	265	21,545.96	105,066.98	267	33,263.69	171,552.87	308	41,054.42	137,843.17	12,706.506	0.372	3,998.596	0.789
Apr 20	908	283	23,479.22	107,902.05	280	40,240.88	195,253.45	345	45,554.44	148,855.97	16,957.622	0.272	3,875.487	0.819
May 20	908	283	21,853.71	105,996.70	280	37,144.17	223,944.40	345	39,396.68	121,343.98	18,102.979	0.324	-1,095.744	0.953
Jun 20	908	283	21,274.34	102,206.64	280	43,894.02	243,202.15	345	41,297.27	156,926.30	27,790.869	0.153	-8,482.009	0.674
Jul 20	908	283	18,676.18	86,444.82	280	36,316.24	225,527.26	345	44,800.64	187,782.50	20,914.419	0.241	6,780.661	0.751
Aug 20	908	283	41,894.88	254,133.20	280	38,003.23	227,673.94	345	66,938.01	281,173.01	-7,910.227	0.769	19,979.093	0.395
Sep 20	908	283	38,536.90	250,450.19	280	35,450.51	226,601.65	345	65,206.07	310,982.00	-7,479.015	0.782	34,165.181	0.264
Oct 20	908	283	27,553.04	149,415.25	280	35,619.01	225,905.02	345	73,985.14	439,824.30	7,647.405	0.714	51,542.861	0.214
Nov 20	908	283	18,976.88	70,102.47	280	46,627.22	258,589.64	345	76,365.45	530,385.83	31,737.387	0.095	44,836.738	0.365

Notes: Formal savings values are calculated using admin data provided by NMB. Respondents from the control group are excluded from this analysis.

Table 27: Admin data: Maximum monthly balance

Obs	Sample Mean	Private		Ann		Training		Diff: Priv-Ann		Diff: Joint-Tr		p-Value			
		Obs	Mean	SD	Obs	Mean	SD	Obs	Mean	SD	p-Value				
Oct 19	313	23,741.94	98	26,808.23	90,111.81	89	14,760.67	12,804.71	126	27,700.95	66,804.21	-13,084.330	0.207	14,302.150	0.036
Nov 19	690	31,715.15	220	26,618.17	98,995.97	212	31,404.39	125,245.33	258	36,316.76	112,711.60	3,438.309	0.765	3,242.249	0.808
Dec 19	793	45,005.00	255	36,758.22	145,968.94	245	36,139.85	128,342.96	293	59,595.06	177,160.02	-4,465.239	0.728	25,468.698	0.096
Jan 20	840	45,767.71	265	34,313.50	151,226.00	267	33,397.92	110,856.25	308	66,345.95	203,893.87	-3,243.753	0.786	35,165.576	0.025
Feb 20	840	54,044.56	265	30,951.07	144,239.81	267	42,206.06	187,354.82	308	84,176.54	332,328.41	11,408.554	0.488	43,274.280	0.100
Mar 20	840	53,333.94	265	27,764.98	121,907.54	267	46,886.24	210,643.80	308	80,922.61	326,200.55	19,184.177	0.242	34,418.855	0.192
Apr 20	908	37,035.63	283	23,479.22	107,902.05	280	40,240.88	195,253.45	345	45,554.44	148,855.97	16,957.622	0.272	3,875.487	0.819
May 20	908	51,797.45	283	25,615.05	109,869.65	280	49,046.59	249,867.15	345	75,507.20	254,203.22	27,255.932	0.175	18,713.652	0.428
Jun 20	908	55,216.61	283	27,522.26	117,676.50	280	52,494.88	256,912.70	345	80,142.96	345,722.89	29,431.890	0.151	25,516.706	0.414
Jul 20	908	55,792.88	283	32,793.68	129,021.20	280	50,716.67	261,788.75	345	78,778.73	280,004.13	23,227.851	0.268	28,357.653	0.284
Aug 20	908	50,210.10	283	41,894.88	254,133.20	280	38,003.23	227,673.94	345	66,938.01	281,173.01	-7,910.227	0.769	19,979.093	0.395
Sep 20	908	47,718.26	283	38,536.90	250,450.19	280	35,450.51	226,601.65	345	65,206.07	310,982.00	-7,479.015	0.782	34,165.181	0.264
Oct 20	908	47,682.50	283	27,553.04	149,415.25	280	35,619.01	225,905.02	345	73,985.14	439,824.30	7,647.405	0.714	51,542.861	0.214
Nov 20	908	49,308.55	283	18,976.88	70,102.47	280	46,627.22	258,589.64	345	76,365.45	530,385.83	31,737.387	0.095	44,836.738	0.365

Notes: Formal savings values are calculated using admin data provided by NMB. Respondents from the control group are excluded from this analysis.