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Access to Financial Services and Women's Empowerment

An Evaluation of a Village Savings and Loans Association in Rural Malawi

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Abstract

The objective of this study is to evaluate the relationship between membership in a Village Savings and Loans Association (VSLA) in rural Malawi and the empowerment of women. The data used in this study was collected through individual interviews with members of a VSLA operated by a local NGO. We investigate how differences in the level of empowerment of old and new members, controlling for other relevant variables, are associated with the length of membership in the VSLA. We find that membership is significantly associated with higher community participation and financial empowerment of women but not with intra-household decision-making.

Acknowledgement

Abbreviations

ASAP	A Self-Help Assistance Program
CARE	Cooperative for Assistance and Relief Everywhere
CORDAID	Catholic Organization for Relief and Development Aid
CPI	Community Participation Index
CRS	Catholic Relief Services
DHS	Demographic Health Survey
HDI	Human Development Index
LPM	Linear Probability Model
MDG	Millennium Development Goal
MFI	Microfinance Institution
MMF	Malawi Mudzi Fund
MWK	Malawian Kwacha
NGO	Non-Governmental Organization
OLS	Ordinary Least Squares
SDG	Sustainable Development Goal
SIDA	Swedish International Development Cooperation Agency
SOIR	Swedish Organization for Individual Relief
TA	Traditional Authority
TLC	Total Land Care
UNDP	United Nations Development Programme
VSL	Village Savings and Loans
VSLA	Village Savings and Loans Association

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1. Introduction

Malawi is one of the poorest countries in the world and the access to financial services is very limited, especially in the rural areas. Women often belong to the most vulnerable group in poor countries and are generally more financially excluded due to a poor access to formal employment and to assets that can be used as collateral. By providing small loans, saving facilities and insurances many microfinance institutions (MFI) give poor people the opportunity of access to financial services, taken for granted in many richer countries. Village Savings and Loans (VSL) is an approach of microfinance that lets groups of members save and borrow together, reaching the rural poor.

Many MFIs focus on providing their services mostly to women with the purpose of increasing gender equality and empowering women. In this study we aim to evaluate the relationship between the membership in a Village Savings and Loans Association (VSLA) and women's empowerment. Our hypothesis is that women get more empowered through the creation or improvement of a business, group participation and the financial training provided by the VSLA, all results of the membership.

There exist an extensive amount of studies evaluating the various impacts of microfinance membership, such as improved food security, consumption smoothing and increased empowerment. When reviewing the impact on empowerment we find mixed results. Hashemi, Schuler and Riley (1996) and Amin, Becker and Bayes (1998) found an increase in empowerment in Bangaldesh and Weber and Ahmad (2014) in Pakistan, whereas Beaman, Karlan and Thuysbaert (2014) found no effect on empowerment in Mali.

Previous studies have been done evaluating microfinance in Malawi, but have either had a focus on general benefits of microfinance (Ksoll, Lilleør, Lønborg and Rasmussen, 2013) or been conducted in a qualitative approach (Waller, 2014). In this study, we aim to contribute to already existing literature with a quantitative evaluation of the VSL approach and empowerment in rural Malawi.

We use cross-sectional data that we collected as part of a field study in Malawi during April-May 2015. The primary dataset was collected through individual interviews with members of a VSLA in rural Malawi, operated by the local NGO, A Self-Help Assistance Program (ASAP). A higher proportion of the respondents (89%) reported having a job or a business compared to before entering the VSLA (54%), and 69% reports being more involved in intra-household decision-making after entering the VSLA.

Through the use of Ordinary Least Squares (OLS) regression models we examine how the length of membership in the VSLA is associated with differences in the level of empowerment of new and veteran members, when controlling for other relevant variables. We focus on two dimensions of empowerment: intra-household decision-making and community participation, and find the coefficient for length of membership to be positive and statistically significant with one of the community participation measures as dependent variable. This could indicate an increased self-confidence as a result of the VSLA membership. Furthermore, we find evidence indicating that the probability of re-investing profits mainly in the business increases with the length of membership, indicating an improvement of financial empowerment.

The reminder of the paper is organized as follows. Section two provides a relevant background of Malawi and a description of the workings of microfinance and the Village Savings and Loans approach. Section three reviews relevant literature. Section four describes the data collection and presents a summary of descriptive statistics. Section five presents the econometric models used and discusses the estimation methods used. Section six presents the results and a sensitivity analysis and Section seven presents a conclusion of our findings.

2. Background

2.1 Malawi

Malawi is one of the more densely populated countries in Africa, with a population of about 17 million people living in a land area of 94,080 square km. Being a landlocked

country in Sub-Saharan Africa with an economy based on agriculture, the country faces many development challenges, mostly due to the fast growing population, the presence of natural disasters and the high prevalence rates of HIV and AIDS. The country is ranked to be among the world´s least developed countries with about 53% of the population living below the poverty line, and as much as 80% of the population living in rural areas. (The Central Intelligence Agency, 2015)

In the latest Human Development Report, Malawi's Human Development Index (HDI), which measures the advancement in human development based on life expectancy, access to education and per capita income, scored below the average HDI score of both countries in the low development group as well as in Sub-Saharan Africa. The country ranked 174 out of the 187 countries for which data was available (UNDP, 2014).[1]

Looking at the Gender Inequality Index (GII), reflecting reproductive health, women's empowerment and economic activity, Malawi is ranked at 129 out of the 149 countries and in the Gender Development Index (GDI), measuring the ratio of female to male HDI, Malawi's score is slightly above the Sub-Saharan Africa average (UNDP, 2014).

The situation of women in Malawi is improving according to the United Nations Development Programme (UNDP). This includes the fact that there is an increased percentage of women in the Parliament. Nevertheless, a big challenge in the work for gender equality lies in the progress on the number of girls to boys ratio in secondary school. Despite the increased number of women in the Parliament together with the increased awareness on gender equality among policymakers, achieving the 1:1 ratio is very unlikely to be fulfilled by the end of 2015. Consequently, to reach the third Millennium Development Goal (MDG), to promote gender equality and empower women, by the end of 2015 is still a big challenge. (UNDP, 2015)

Malawi is divided into 3 regions and 28 districts, with each district being divided into several Traditional Authorities (TAs). The city Blantyre is the capital of the southern

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[1] When the HDI is discounted for income inequality it drops to 0.282 (from a value of 0.414).

region and also the second largest city in Malawi with a population of 661,256 in 2008. Blantyre was founded in the 1870s by Scottish Missionaries and is today the biggest financial district and Malawi´s economic capital (United Nations Human Settlements Programme, 2011). This field study took place in the rural part of the Blantyre district, in TA Makata (see map in Appendix 2).

2.2 Microfinance

Microfinance is the provision of microcredit (small loans), saving facilities and other financial services to the very poor. With a lack of collateral and a relatively low demand for (and supply of) finance, this group of people is often excluded from formal financial services. Many organizations today provide different kinds of microfinance giving financial possibilities to the poor.

It is often argued that the access to microfinance provides the opportunity to smooth the income and consumption, to buy fertilizer at the beginning of the season, to invest in tools or machines or to purchase a stock of goods to sell, actions that can increase future income. Having access to a bank account and insurance services also facilitates saving and provides security for challenging events.

In 2005, the United Nations organized an event in order to highlight microfinance as an act of making financial services more available to the poor and low-income people (Year of Microcredit, 2005). Even more attention was drawn to microfinance in 2006 when the Nobel Peace Prize was given to the Grameen Bank and its founder Muhammad Yunus "for the efforts to create economic and social development from below" by giving small loans to the poorest of the poor at low interest rates. Since then the bank has been a great inspiration for other microcredit institutions and even today microfinance keeps spreading across the world as a mean to help people transform their lives. (Nobel Media AB, 2006)

By 2012 microfinance had reached 204 million people (Microcredit Summit Campaign, 2014) yet microfinance still has a long way to go to reach all of its potential market and to reach all of the world´s poor population. According to the World Bank´s Global Findex research (2014) almost half of the world´s adult population has no access to formal financial services. Within Malawi only 18% of the

adults (age over 15) have access to a bank account, 7% to formal savings and 6% to formal borrowing. Reaching the rural poor with financial services is a challenge due to a low demand for credit and high delivery costs therefore many banks and microfinance institutions focus on reaching the urban poor instead.

2.2.1 The Village Savings and Loans Approach

One approach to microfinance services, called Village Savings and Loans (VSL), was introduced in 1991 by Cooperative for Assistance and Relief Everywhere (CARE), an organization that aims to work to fight global poverty and to improve education, healthcare and reduce gender-based violence. (CARE, 2013)

The basic idea of the VSL approach is to reach out to the unbanked rural poor and develop their access to savings, loans and insurance services. Most microcredit projects focus on the availability of credit whereas the VSL approach involves savings as a central part, something that is needed in order to be able to build up assets and insurance for the future. (ASAP, 2012b)

A VSL group consists of 15-20 self-selected individuals who save together and take loans from their accumulated savings. The group itself decides the interest rates and makes decisions about weekly contributions. Moreover, the group may also agree on having a social fund with the purpose of being used as insurance. This fund could for example help with expenses regarding a funeral or insurance against catastrophes such as house damage. Each year, the accumulated savings and the interest income are distributed to the members according to their contribution. At the end of each loan cycle, the members can decide to either leave or stay in the group and new members are welcome to join.

There are certain requirements that need to be fulfilled to be able to become a member, however, these requirements are mostly about characteristics of the individuals and not necessarily about the economic situation. The objective is to form groups with individuals with similar economical conditions that are likely to attend the meetings, repay the loans, and in other words, likely to be a "good member".

When becoming a member of a VSLA a small training is included before the actual group activities begin. This training contains information about; how to save regularly, how to take loans from the savings and also how to share out the savings and profits each year according to each person´s contributions. (Allen & Staehle, 2011)

The VSLA model was first introduced in Niger and has since then developed and been implemented by several organizations in at least 61 countries in Africa, Asia and Latin America (VSL Associates, 2014). One organization that has chosen to implement the VSL approach in Malawi is A Self-Help Assistance Program (ASAP). ASAP is a NGO located in Blantyre district of Malawi that was established in 2008 and has since implemented several projects including Village Savings and Loans. Together, the projects have reached 1500 rural unbanked individuals; out of these 70% are women hence a big focus for ASAP lies on improving the situation for women in the region. The projects are currently present in Chikhwawa, Mwanza, Neno and Blantyre districts. ASAP is a small NGO and is dependent on donors to be able to realize its projects. Donors that have chosen to work with ASAP include CORDAID, UNDP-Malawi, Swedish Organization for Individual Relief (SOIR) and Total Land Care (TLC) (ASAP, 2012a).

3. Literature Review

3.1 Theoretical Background

Many microfinance institutions focus on providing their services to women, either exclusively, or at least with the majority of the clients being women. In the report *Finance For All?* the World Bank (2008) lists several reasons why this could be a good idea, both for the MFIs and for the women as well as for society in general. First of all, in developing countries where credit-constraint is a major problem, especially for the poorest, women face even greater barriers to credit than men. Due to a lack of formal employment and with no or little collateral registered in their name, women struggle even more to receive formal loans and could therefore benefit to a greater extent from financial services provided by MFIs. Additionally, women's greater

concern for the children, often assumed in the literature, could bring extra benefits to the society through more investments on education and health.

Focusing on female borrowers might have a larger impact on society while also being more practical for the organizations themselves. Several studies have provided evidence indicating that repayment rates are higher for women, due to lower moral hazard risk and higher risk aversion. Hulme (1991) evaluates an early replica of the successful Grameen Bank outside Bangladesh, the Malawi Mudzi Fund (MMF), and finds a higher repayment rate for women (92%) compared to men (83%). D'Espallier, Guérin and Mersland (2011) confirm these advantages of borrowing to women in a study of data from 350 MFIs in 70 countries where they find that, ceteris paribus, a higher share of female borrowers is correlated with a lower portfolio risk and fewer write-offs.

Finally, the World Bank (2008) argues that a focus on women as clients can improve their position in the household and empower them. The empowerment of women and gender equality are pressing development issues. The Secretary General of the United Nations, Ban Ki-Moon expressed at the 59th Commission on the Status of Women in march 2015, that "Removing the barriers that keep women and girls on the margins of economic, social, cultural and political life must be a top priority for us all – businesses, Governments, the United Nations and civil society". (UN Women, 2015)

Empowering women is important not only in the aspect of the women themselves. According to Duflo (2012) there is also a strong correlation between economic development and women´s empowerment. Duflo argues that women´s empowerment is brought out through development, and through means of empowering women changes in decision-making will take place and in turn lead to development. The importance of women´s empowerment is confirmed internationally as one of the proposed Sustainable Development Goals (SDG), SDG 5: "Achieve gender equality and empower all women and girls".

3.2 Definition of Empowerment

According to UN Women (2011), to "set their own agendas, gain skills (or have their own skills and knowledge recognized), increase self-confidence, solve problems and

develop self-reliance" are essential components of women empowerment. Furthermore, the World Bank (2012) refers to empowerment as the "process of increasing the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes".

With its wide and complex concept, empowerment has many definitions. Furthermore, empowerment is often described as a process and processes are hard to measure (Malhotra, Schuler and Boender 2002). To define empowerment in a proper way and hence to be able to measure it is therefore difficult and different methods have been used in the literature.

Weber and Ahmad (2014) evaluate the level of empowerment of women in different stages of loan cycles in Pakistan. To measure empowerment they have chosen to focus on two dimensions, the social and the financial dimension. The indicators they use to measure these dimensions include domestic decision-making, schooling of children and freedom of movement for the female borrower as well as utilization of the loan, contribution to the household expenditure, income and income-decisions, as well as participation in resource allocation and savings. A study by Beaman et al. (2014) is another example where participation in household decision-making is used to measure empowerment. They also choose to measure empowerment through social capital.

Khan and Noreen (2012) examine the relationship between microfinance and empowerment in Pakistan and use five indicators to test empowerment, the ability to decide on child health, education, selection of spouse of children, purchase of basic goods and decision of household savings.

Hence, many studies are trying to capture the empowerment process through measures of decision-making. According to the review by Malhotra et al. (2002) such measures are seen as the ones most effective when representing the process of empowerment.

In this study we have chosen, based on the literature presented above, to divide the concept of empowerment into two dimensions, intra-household decision-making and

community participation. Within each dimension we have several indicators measuring the level of empowerment. For the intra-household decision-making, participation in decisions regarding daily purchases, ones own healthcare, children´s healthcare and involvement in decisions regarding sending the children to school are considered. For community participation, participation in village meetings, interaction with the village chief and level of involvement in the village-meetings are covered.

3.3 Previous Findings

There exists extensive literature assessing the impact of microfinance projects. We focus on the most relevant studies assessing the impact on empowerment, but also include some wider studies providing important results of microfinance. Evaluations of different microfinance projects in different areas have found varying results of the impact of microfinance on various socio-economic measures. One reason why several studies have found varying results on the effect of microfinance on women´s empowerment is, according to Kabeer (2001), that different concepts and aspects of empowerment are used in different studies. Another reason is due to the use of different methodologies, under different time frames. In this section we will start with presenting results on traditional MFIs and then examine results of saving groups in Malawi.

In an early study, Hashemi et al. (1996) examine two microcredit projects in Bangladesh; Grameen Bank and Bangladesh Rural Advancement, to assess the impact of providing credit to rural women. Sample survey and case study data is used to examine the impact on eight indicators measuring empowerment, such as ownership of assets, and the ability to make purchases. The authors find that by increasing the ability to contribute to the household economically and by interacting outside the family, the women gain experience and self-confidence and become more empowered through the microcredit projects. Another study in Bangladesh has found similar results. Amin et al. (1998) use empirical data from the rural areas of Bangladesh to evaluate the impact that participating in a microcredit program has on the empowerment of poor women. They use both qualitative and quantitative data and choose to define empowerment by dividing the concept into three components, measuring them separately. The three chosen indices are inter-spouse consultation index, individual autonomy index and authority index. Their quantitative results

show that members outperform non-members in the three different empowerment indices. Furthermore, the authors discuss parts of their qualitative data, which indicates that women who have become members of a microcredit program also report to be more confident and are more aware of their rights.

Positive results on empowerment are also found by Weber and Ahmad (2014) who analyze the effect of microfinance on empowerment in Pakistan, based on a survey. They compare a treatment group of borrowers who have been taking loans for at least five years with a control-group of participants belonging to the first-year loan cycle. The study finds significant evidence that women in higher loan cycles had a higher level of empowerment with regards to the ability to decide on loan utilization and freedom of movement. The authors argue that deciding on how to use a loan is an important indicator for financial empowerment whereas freedom of movement is an important indicator for social empowerment. Based on these results they conclude that the microfinance contribute to an increase in the central indicators of financial and social empowerment. Furthermore, Ashraf, Karlan and Yin (2010) find that women who are less empowered from the beginning experience the largest increase in the ability to decide over financial savings and in the ability to control over assets. They find this through a randomized controlled trial evaluating the impact of a commitment savings product in the Philippines.

Cheston and Kuhn (2002) are a little more skeptical to the concept of empowering women through microfinance. In their paper they look at evidence presented on the impacts of microfinance on empowerment. They argue that although access to credit may lead to an increase in empowerment there are many other factors that matter. Even though credit is suppose to generate a greater empowerment in the form of e.g. increased self-esteem and respect this may not always hold true when taking a closer look. Factors that matter, according to Cheston and Kuhn, are the individual abilities of the woman as well as the status of the women in the society. They stress the importance for microfinance organizations to look at the needs of women to be able to succeed in empowering them through access to credit.

A study that does not find any positive impact on empowerment is by Beaman et al. (2014) who examine village-based savings groups in Mali. Through a randomized

evaluation they find improvements in food security, consumption smoothing and buffer stock savings. However, they do not find any impact on health, education, social capital nor on female decision-making power. They measure female decision-making power through an index consisting of several questions including e.g. possibility to decide on her own about food purchases or about education expenses. The authors do not find any statistically significant change in neither individual questions nor the index containing all measures.

Ksoll et al. (2013) evaluate a VSLA project in northern Malawi. Through a cluster randomized control trial they compare control and treatment villages using data collected through household surveys. They find that through increased investments in fertilizer and use of irrigation, food security and household income have increased as a result of two years of the VSLA implementation. Another study. conducted in Malawi is by Waller (2014) who evaluate a (USAID-funded) saving groups project by Catholic Relief Services (CRS) in Southern Malawi through a qualitative study based on success stories, interviews and focus group discussions collected in Thyolo and Chikwawa districts. While it is an intermediate evaluation and not a study providing statistically representative result, it does give an insight of possible benefits and challenges of saving groups in the area. One important finding of the study is that in some cases the husbands were reported to take advantage of the wives' financial access.

4. Data and Descriptive Statistics

4.1 Data Collection

The cross-sectional data used in this study was collected through individual interviews with members of a VSLA in rural Malawi, operated by the local NGO ASAP. During April and May 2015, a total of 304 members were interviewed in 12 villages in Traditional Authority (TA) Makata in rural Blantyre, Malawi (see map in Appendix 2). Initially, 24 groups were selected from a list based on the date when the group was formed to secure an even distribution of the main explanatory variable.[2]

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[2] We believe that insisting on choosing the groups ourselves, based on the exogenous variable month of entry, was an important step to assure unbiasedness in the selection of the groups (since the organization otherwise might have chosen better/more successful groups for the interviews, either

The choice to use an exogenous sample selection was also done in order to compare members who entered the VSLA in similar months of the year to control for seasonality.[3]

We met with one group at a time at, or close to, the group's usual gathering point for the VSL meetings. This was a practical solution that provided a neutral location for the interviews suitable for questions regarding empowerment. Unfortunately we were not able to interview all the members of the groups that we initially aimed for. Even though the meetings were scheduled in advance there were a few members that did not show up, mostly due to being busy with the business or attending a funeral.[4]

Of the 304 interviewed members, 275 are women and 216 of them are married women. It is this latter subpopulation that we aimed for since they could answer the relevant empowerment questions (both intra-household decision-making and community participation) and thus this is the group this study focuses on.[5]

While English is the official language in Malawi, Chichewa is also very common, especially in rural areas and therefore two local translators were used.[6] The questions were verbally translated from English to Chichewa, and then the responses were translated back to English and recorded by us. To mitigate any differences between the translators they were used interchangeably and each translated 162 and 142 interviews. The fact that we are of different gender was expected to possibly affect the responses of the interviewees in different ways, since empowerment is a relatively sensitive area. After analyzing the data however, we do not find any statistically significant differences related to the gender of the interviewer on the dependent variables.

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consciously or subconsciously). Furthermore we excluded the 10 oldest groups to avoid possible differences in implementation by the organization during the start-up of the project.

[3] This proved difficult in practice since the data provided by the organization was not updated and inaccurate. Therefore monthly dummies are also included in the regressions to control for seasonality.

[4] Although it is also plausible that some other reasons such as not daring/being less empowered caused the women not to show up.

[5] For the community participation part and financial empowerment the unmarried women are also included.

[6] Due to the difficulty of locating female translators, male translators were used. This could influence the responses of the women and lead to answers indicating a different level of empowerment than if female translators were used, but since the (main) comparison of this study is between new and veteran members and the same translators were used for all interviews this problem is moderated.

The interviews were conducted using a questionnaire (see Appendix 1) containing a total of 43 questions. The questionnaire was divided into three parts starting with basic questions about the member and its current life situation, continuing with general questions regarding the VSL membership and ending, as proposed by the World Bank (2000), with the more sensitive questions regarding empowerment. Due to an expected trade-off between the number of questions and the accuracy of the responses we chose to focus on two out of several possible areas of empowerment: decision-making in the household and community participation.[7]

4.2 Descriptive Statistics

As shown in Table 2, 12% of the respondents report that they were a member of another VSL before entering the current group and only 9% had taken another loan prior to joining, indicating that the access to financial services is limited in the area. The average initial contribution to the VSL was just below 500MWK (equivalent to approximately 10SEK or 1.2USD (in May 2015)) and 22% got it through a loan or donation from the husband. Although not a large amount in real terms, the fact that the average initial contribution is approximately 50% of the average daily income and that more than 1 of 5 got it from their husband, could indicate a barrier of entry to the VSLA. 53% say they now save more than before entering the VSLA whereas 42% borrow more than before. 16% mainly invest their profits or income in their business. 69% of the respondents report an improvement in involvement in decision-making in the household than before entering, the average score in the decision-making index is 5.6 of 8 points and almost 2 out of the total 3 points in the community participation index.[8]

In Figure 1 the proportion of the 216 women involved in each of the eight intra-household decision-making questions is presented. In none of the questions all women are involved; instead the rate of involvement varies between 38-92%. Deciding on making major household purchases is the question where the women are
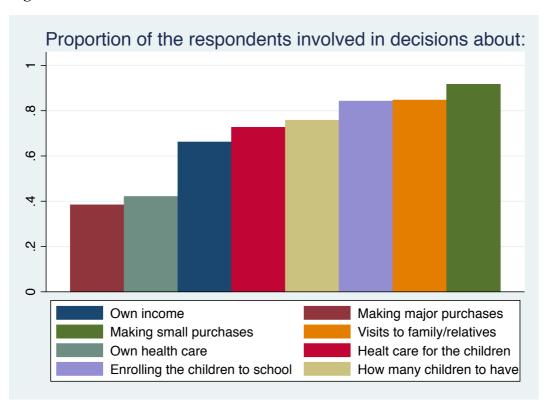
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[7] For some of the intra-household decision-making questions we used the same questions as those asked in the Malawi DHS (2010) (to be able to get an interesting comparison with national data) while the community participation index was inspired by Beaman et al. (2014).

[8] Although not specifically asked, many women mentioned having a business involved in cultivating and selling agricultural goods, buying and selling tomatoes or other vegetables or baking and selling bread. The loans were often used for purchases related to the business, but paying the children's school fees was also a common way to spend the credit.

most excluded, with only 38% involved. Surprisingly, deciding about the women's own health care is the second question where the women are least involved. Being involved in one's own healthcare is usually taken for granted in many western countries, by both men and women, whereas this does not seem to be the case in rural Malawi. In contrast, deciding about daily household purchases is the area where most women are involved, 92%. This could be a sign of influence on intra-household decisions, but it could also be seen as a duty traditionally supposed to be handled by the women.

Figure 1

In Figure 2 the participation in community activities are presented. As in the questions regarding intra-household decision-making in none of the questions all women are involved. However, of the 274 women answering the community participation questions approximately 97% say they had participated in a traditional village meeting in the past year. Talking to the village chief is a community action where women could least relate to, with only 43% saying that they had interacted with the village chief in the past year and 57% say they had spoken at a traditional village meeting in the past year.
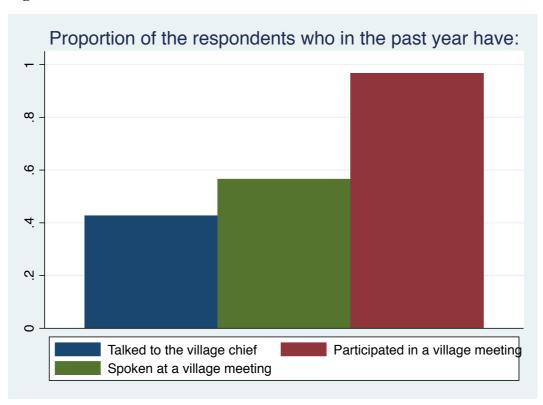
Figure 2

Table 3 provides a comparison of the proportions of women involved in four different intra-household decision-making questions in Malawi in general, rural Malawi, Blantyre and our respondents (in TA Makata). In rural areas a lower proportion of women are involved in decision-making in the household compared to Malawi as a whole, whereas a higher proportion of women living in the district of Blantyre are involved. Compared to Malawi in general and rural Malawi, a higher proportion of the respondents in our study are involved in the decision-making questions, except for decisions about their own health.[9]

To be able to measure the level of empowerment we construct two indices of involvement in intra-household decision-making and community participation ranging 0-8 and 0-3, respectively. For each of the questions 32-39 an answer indicating involvement in the decision-making questions, either alone or jointly with husband/partner, is rewarded with 1 point whereas answering "mainly husband" gives

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[9] The 5-year difference between the DHS and our study as well as differences in the samples could be parts of an explanation of the differing results.

0 points. Thus a woman involved in all of the questions will receive an index-score of 8. Similarly for the Community Participation Index (CPI), answering "yes" to any of the questions 41-43 gives 1 point, "no" gives 0 points and a woman answering yes to all three question gets three points in the CPI. This approach allows us to evaluate empowerment in general, in addition to analyzing the questions individually.[10]

The descriptive statistics for the other explanatory variables used in this study is reported in Table 2. The average woman interviewed is 35 years old and lives in a household with 5 members, got married at the age of 19 and has gone to school for 5 years. 66% of the women can read and write, 88% are Christian and 22% of married women report themselves as the head of the household. 89% has a job or a business (54% had a job or business prior to entering the VSLA, confirming that some members got a job or started a business after entering the VSLA), the average length of work experience is 4 years and the average daily profit/income is almost 1000MWK.

5. Empirical Strategy

This study aims to investigate how access to a Village Savings and Loans Association affects women's empowerment using Equation 1:

$$empowerment_i =$$
$$\beta_0 + \beta_1 membership_i + \beta_2 sponsored\ by\ husband_i +$$
$$\beta_3 previous\ member_i + \beta_4 previous\ loan_i + \beta_5 X_i + \mu_i \quad (1)$$

Where *empowerment* is a measure of empowerment of individual *i* and *membership* is the length of membership. *Sponsored by husband* is a dummy variable equal to one for women who got (in the form of loan or gift/sponsorship) the initial VSLA membership contribution from their husbands. *Previous member* is a dummy variable with one for individuals with previous membership in another VSLA before entering the current group. *Previous loan* is a dummy variable capturing individuals who had taken a loan prior to entering the current VSLA. X is a vector of control variables

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[10] Differencing between deciding alone or jointly was also tried, however with similar results. A weighted index could have been a more appropriate option but deciding the weights is a complex process.

such as: age and age at marriage, head of household, literacy, years of schooling, having a current job or business, daily income/profit from job/business and a set of dummies for religion, village, tribe and month of entry.[11] μ is a normally distributed error term.

Two dimensions of empowerment are included as main dependent variables of interest, namely: intra-household decision-making and community participation. We examine what effect the duration of membership has on various individual empowerment measures and also together, in the form aggregate indices of the individual components of intra-household decision-making and community participation. Furthermore we also use self-reported change in decision-making as dependent variable to possibly capture dimensions not asked about in the individual questions.

The main explanatory variable, *membership,* captures the length of membership in the VSLA, measured in months.[12] We expect that the membership in a VSLA will increase the empowerment of the women mainly through three different channels. First, a newly started or improved business; generating a natural increase in the woman´s own income which in turn brings the possibility to contribute with more money to the household and making the woman more independent. Second, participation in a group; we believe this to increase the feeling of belonging and affect the self-confidence in a positive way. We also believe this increase in self-confidence to affect the involvement in the community. And finally, through the training that is provided by the organization, which will contribute to higher knowledge regarding how to save and to deal with money and create consciousness as well as give tools to improve the business. $\beta_1 > 0$ is consistent with our hypothesis above that the duration of membership is associated with improvement in the empowerment of the women who are members of the VSLA.

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[11] While we expect age at marriage to affect the decision-making in the family we don't expect it to have an impact on community participation, and therefore it is not included when estimating the latter
[12] The initial idea was to compare a treatment group of veteran members with a control group of members that had been accepted to the project but not yet started the activities. This proved difficult in practice and instead of using a dummy for membership the variable represents the number of months as a member.

We believe β_2 to be negative because it is possible that the husband feels entitled to decide over the loans as well as to control other financial decisions if he sponsored the woman's membership. With our hypothesis being that the VSLA membership has a positive effect on empowerment we also expect previous membership to have a positive impact ($\beta_3>0$). Similarly, because individuals with previous access to credit are likely to be more empowered we expect β_4 to be positive as well.

Equation 1 is estimated using OLS, a very common method in applied work with estimators that are easy to interpret (Wooldridge, 2013, pp.242). Non-random sampling and omitted variables bias are some of the major challenges of obtaining unbiased estimates using OLS econometric model.

The sample selection used in the current study was based on the independent variable *membership*, measuring months as a member in the VSLA. Exogenous sample selection, despite being a type of nonrandom sampling, does not cause bias or inconsistency in OLS. (Wooldridge, 2013, pp. 315)

The likely presence of an omitted variable bias problem is the second major challenge. For example level of ambition is hard to measure but likely positively correlated to both the level of empowerment and the explanatory variable *education*. Omitting the variable of level of ambition would cause the coefficient of *education* to be overestimated (positive bias). By comparing new and veteran members, with similar levels of ambition, we aim to mitigate this problem. We expect women that have taken the step to enter a VSLA to be more ambitious and outgoing in search for opportunities than non-members. This comparison of women with expected similar properties on average reduces the risk of getting biased results caused by omitted variables. Furthermore, by adding a set of control variables to our model we further reduce the risk of biased estimators.

A common problem when analyzing microeconomics is heteroskedasticity. While the presence of heteroskedasticity does not cause inconsistent or biased OLS estimators it

does affect the validity of the standard errors. We use robust standard errors when necessary to solve this problem.[13]

With indices and binary variables as dependent variables, the normality assumption does not hold. But for large enough samples (more than 200 observations in our study) inference is approximately correct if the other Gauss-Markov assumptions hold (Wooldridge, 2013, pp. 167).[14]

One of the main limitations of this study is the occurrence of people eventually leaving (dropping out of) the VSLAs for various reasons. If the less empowered women are more likely to dropout, then the sample of veteran members will be more empowered than the population of veteran members, and the coefficient of the VSLA membership variable will be overestimated. If, on the other hand, the more empowered drop out, the coefficient will be underestimated. A similar problem is caused by the fact that not all members showed up at the scheduled interviews. Future research could address this problem by locating and interviewing the members that did not show up as well as the dropouts.

6. Results

6.1 Intra-household Decision-making

The OLS estimation with the intra-household decision-making index as dependent variable is presented in Table 4. The coefficient of *membership* in Column 1 is positive as expected, but not statistically significant. The same is true in Column 2 and 3 when controlling for additional individual and household characteristics. According to the estimates in Column 3 an additional month of membership in the VSLA[15] is associated with 0.022 additional points in the index of intra-household decision-making, though not statistically significant. Neither with the individual

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[13] The linear probability model, where the dependent variable is binary, by definition contains heteroskedasticity (Wooldridge, 2013, pp.284). When using the empowerment indices as dependent variables we test for heteroskedasticity and only use robust standard errors if necessary.

[14] In the sensitivity analysis (Section 6.4) we provide a comparison between OLS and the estimates from Probit and Poisson regression models that are more suitable for this kind of dependent variables.

[15] Throughout this study we estimate the results of being a member in the VSL project implemented by the local NGO ASAP in the rural area of the Blantyre district. While ASAP follows the VSL methodology introduced by CARE, some minor differences in implementation may be present in different organizations and the external validity of this study could be affected by this.

decision-making questions as dependent variables is *membership* statistically significant with all control variables included. This is in line with the findings of Beaman et al. (2014) who don´t find any significant results on intra-household decision-making.

Among the other key explanatory variables in Table 4, we find a negative and statistically significant (at the 5% level) coefficient for the variable *sponsored by husband* in Column 2 where being sponsored (receiving the initial contribution) by the husband is related to a score of 0.538 points less in the index. While this could be a confirmation of the hypothesis that the husband feels more entitled to control financial decisions if he sponsored the woman, it is also possible that the woman gets sponsored because she is poorer, and when controlling for other household and business related variables (i.e. income) in Column 3, *sponsored by husband* is no longer statistically significant. We found no statistical significance on the other key explanatory variables, *previous member* and *previous loan*. Of the other control variables only *age at marriage* and *head of household* are statistically significant and have positive signs (in line with our expectations) indicating that women who get married young are less involved in intra-household decision-making and women who reports themselves as head of household are more involved.

In Table 5 the same models are presented but with self-reported change in involvement in intra-household decision-making after membership in the VSLA as dependent variable.[16] The coefficient of *membership* is again positive in all three models, but in contrast to Table 4 the coefficients are also statistically significant on the 5% level in Column 1 and 2 where one additional month of VSLA membership predicts a 0.01 higher probability of reporting more involvement in intra-household decision-making. The fact that the coefficient of *membership* is more significant with self-reported involvement in intra-household decision-making as dependent variable could be because it captures other dimensions of empowerment that are relevant for the respondents that are not included in the index of intra-household decision making. When it comes to the other key explanatory variables, *age* is the only control variable that is statistically significant, at the 5% level and with the expected positive sign.

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[16] Answering "More involved" in question 40 in Appendix 1.

6.2 Community Participation

When using the community participation index as a dependent variable, we find that the coefficient of *membership* is positive and highly significant (at the 1% level) in Column 1 and 2 of Table 6. One additional month of VSLA membership predicts an increase in the community participation in the index by 0.019 points. However, this effect vanishes when adding additional control variables in Column 3, which could be explained by the fact that i.e. *age* is probably positively correlated with both *membership* and community participation. The coefficient of *previous member* is also significant in Column 2 and 3, where having been a member of another VSLA before joining the current group predicts an increase of 0.314 and 0.569 points in the index, respectively. The only other variable that is statistically significant (at the 10% level) is *head of household* where the coefficient unexpectedly is negative in Column 3. One possible reason for this could be that the head of the household is more involved in household matters and may not have as much time to get involved in the community.

As shown in Table 7, when examining the individual questions that make part of the community participation index, whether the respondent has spoken on a village meeting in the previous year shows the most significant result, where *membership* is statistically significant in all three models (Column 1-3) at the 1-5% level. An additional month of VSLA membership predicts an increase in the probability of having spoken at a village meeting in the past year by 0.015-0.019. The fact that this is the most statistically significant indicator of empowerment in our study is reasonable. Attending and speaking at the regular VSLA meetings naturally makes the woman more comfortable to speak also in a traditional village meeting. This result is in line with the findings of Hashemi et al. (1996) whose results showed gained experience and an increased self-confidence as a product of interacting outside the family through the microfinance organization. Amin et al. (1998) also found results indicating that women who were members of the microfinance organization reported being more confident. Similar to our finding in Table 4, *Previous member* is statistically significant (at the 5% level) with the expected positive sign in Column 2 and 3. *Education* is the only control variable that we found to be statistically significant (at the 10% level) with a positive sign, in line with our expectation that more education predicts a higher probability of speaking at a village meeting.

6.3 Financial Empowerment

Column 1 of Table 8 provides the OLS estimate with profits mainly invested in businesses led by the VSLA members as dependent variable. Controlling for working experience, years of education and daily income, we find that *membership* is statistically significant at the 10% level. One additional month of VSLA membership predicts an increase in the probability of profits being mainly invested in the business[17] by 0.006. This financial awareness and control over profits and loans could be interpreted as financial empowerment and could be the result of the provided training and from gaining business experience and learning from others.

6.4 Sensitivity Analysis

As discussed earlier in Section 5, OLS is a very common estimation method and the coefficients are easy to interpret. However, the method also has its limitations when the dependent variable has limited values in range.[18] The main limitations of using the Linear Probability Model (LPM) (OLS with a binary dependent variable) is that the predicted probability can be negative or higher than one and that the partial effects are constant. Using Probit instead of the LPM provides probabilities between zero and one and allows partial effects with diminishing magnitudes. With a nonnegative dependent count variable (the indices), OLS could estimate negative predicted values whereas a Poisson regression ensures positive predicted values while also allowing a more sophisticated interpretation of the coefficients (Wooldridge, 2013, pp. 560-563, 580-583). In Column 4 of Table 4-7 we provide the estimation of equation (1) with the alternative method (In Table 8, Model 1 (OLS) is compared to Model 2 (Probit)).

The comparison between OLS and Probit in Table 5 and 7 shows only slight differences between the estimates, but the significance of the variables of interest do not differ enough to affect the main findings of this study. Comparing OLS and Poisson results (Column 3 and 4) in Table 4 and 6 provide some more challenging differences in statistical significance among the estimates. The signs of the coefficients are still the same (though the magnitudes are not directly comparable) but the statistical significance is lower for the Poisson estimates.

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[17] Instead of spending it on consumption, see question 21 in Appendix 1

[18] In our case, the dependent variable is either binary or a count variable of the empowerment index ranging between 0 and 8.

7. Conclusions

In this study we examine how being a member in a Village Savings and Loans Association is related to women's empowerment. We choose to focus on two dimensions of empowerment: intra-household decision-making and community participation.

The data used in this study was collected through individual interviews with female members of a VSL project operated by a local NGO (called ASAP) in the rural area of the Blantyre district, Malawi. The descriptive evidence indicates that the share of women with a job or a business increased from 54% prior to entering the VSLA to 89% when interviewed. Furthermore, 69% of the married women report being more involved in intra-household decision-making now than was the case before entering the VSLA.

When analyzing the OLS results with only the key explanatory variables included, the duration as a VSLA member indicates a positive relationship with self-reported intra-household decision-making and community participation index. Furthermore, women who got their initial contribution to the VSLA membership from their husband are generally less involved in intra-household decision-making while women who where a member of another VSLA before entering the current are more empowered.

While these results are interesting relationships, it is difficult to infer any causality without including other relevant control variables. With these included, most of the significant effects vanishes while the expected signs generally remain. For one of the individual empowerment questions we do however find statistically significant results with all control variables included, where one additional month of membership in ASAP's VSLA predicts an increase in the probability of having spoken at a village meeting in the past year by 0.019. This could be a sign of increased self-confidence as an effect of the VSLA membership, and in the longer run more involved women could contribute to a more equal society. Furthermore we find a higher likelihood of investing the profits mainly in the business for an additional month of VSLA membership (when controlling for working experience, education and daily income), indicating increased financial empowerment.

The fact that ASAP focuses on improving the situation of women in general and not specifically within intra-household decision-making could be the reason why we do not find significant results in this specific area, while the relatively short time frame of the study could be another explanation. Nevertheless, the positive indications on community participation and financial awareness could in the longer run also contribute to an increased level of involvement in decision-making within the household.

Although the VSL methodology is a standardized approach, differences in implementation as well as regional differences likely exist and therefore it is difficult to claim external validity for the results in this study. A more critical challenge for this study, not apparent in previous studies, is the presence of dropouts making it difficult to draw causal conclusions even if the results would have been more significant. Future studies with more time and resources could try to follow up with the dropouts in the interviews.

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Tables

Table 1. Variable descriptions

Dependent variables	Variable description
Decision-making Index	Index of empowerment (intra-household decision-making)
Community Participation Index	Index of empowerment (community participation)
More empowered	=1 if respondent reports more involvement in intra-household decision-making than before entering the VSLA, 0 otherwise
Own income	=1 if involved in decisions about own income, 0 otherwise
Major purchases	=1 if involved in decisions about major purchases, 0 otherwise
Small purchases	=1 if involved in decisions about purchases for daily household needs, 0 otherwise
Visits to family/relatives	=1 if involved in decisions about visits to family/relatives, 0 otherwise
Own healthcare	=1 if involved in decisions about own healthcare, 0 otherwise
Child healthcare	=1 if involved in decisions about healthcare for the children, 0 otherwise
Child schooling	=1 if involved in decisions about enrolling the children to school, 0 otherwise
Nr of children to have	=1 if involved in decisions about how many children to have, 0 otherwise
Participation in village meeting	=1 if respondent has participated in a village meeting in the past year, 0 otherwise
Spoken at village meeting	=1 if respondent has spoken at a village meeting in the past year, 0 otherwise
Talked to village chief	=1 if respondent has talked to the village chief in the past year, 0 otherwise
Main explanatory variables	
Membership	Number of months as a VSLA-member
Previous member	=1 if was a member of another VSLA before entering the current VSLA, 0 otherwise
Previous loan	=1 if had taken a loan before entering the VSLA, 0 otherwise
Sponsored by husband	=1 if respondent got initial contribution from husband, 0 otherwise
Control variables	
Age	Age in years
Christian	=1 if Christian, 0 otherwise
Household size	Number of members in the household
Age at marriage	Age at marriage

Head of household	=1 if respondent expresses being head of household (where wife and husband live together), 0 otherwise
Literate	=1 if can read and write, 0 otherwise
Education	Years of education
Working experience	Years of total working experience
Business/job	=1 if respondent has a job or a business now, 0 otherwise
Business/job before VSLA	=1 if respondent had a job or a business before entering the VSLA, 0 otherwise
Daily income	Daily income/profit in Malawian Kwacha
Profits invested	=1 if profits are mainly invested in business, 0 otherwise
Save more	=1 if respondent saves more now than before entering the VSLA, 0 otherwise
Borrow more	=1 if respondent borrows more now than before entering the VSLA, 0 otherwise
Initial contribution	Initial contribution to the group in Malawian Kwacha

Table 2. Descriptive statistics

Dependent variables	Obs	Mean	Std. Dev.	Min	Max
Decision Making Index	216	5.555556	1.607155	2	8
Community Participation Index	274	1.959854	.8740424	0	3
More empowered	216	.6851852	.4655209	0	1
Own income	216	.662037	.4741146	0	1
Major purchases	216	.3842593	.4875496	0	1
Small purchases	216	.9166667	.2770274	0	1
Visits to family/relatives	216	.8472222	.3606089	0	1
Own healthcare	216	.4212963	.4949138	0	1
Child healthcare	216	.7268519	.4466113	0	1
Child schooling	216	.8425926	.3650304	0	1
Nr of children to have	215	.7581395	.4292095	0	1
Participation in village meeting	274	.9671533	.1785614	0	1
Spoken at village meeting	274	.5656934	.4965726	0	1
Talked to village chief	274	.4270073	.4955485	0	1
Main explanatory variables					
Membership	275	8.112727	7.493429	0	28
Previous member	275	.1236364	.3297664	0	1
Previous loan	275	.0945455	.2931195	0	1
Sponsored by husband	274	.2153285	.4118022	0	1
Control variables					
Age	275	34.58545	12.05261	14	80
Christian	275	.88	.325554	0	1
Household size	275	5.396364	1.953657	1	12
Age at marriage	269	19.07435	2.819517	12	32
Head of household	216	.2175926	.4135673	0	1
Literate	275	.6581818	.4751838	0	1
Education	275	5.349091	3.523895	0	12
Working experience	275	3.799331	4.416871	0	33
Business/job	275	.8872727	.3168357	0	1
Business/job before VSLA	275	.5381818	.4994489	0	1
Daily income	275	988.7273	1089.733	0	5000
Profits invested	275	.1563636	.3638619	0	1
Save more	275	.5309091	.4999535	0	1
Borrow more	275	.4181818	.4941597	0	1
Initial contribution	273	484.6154	313.1633	100	2000

Table 3. Women´s participation in decision-making

	Percentage of currently married women age 15-49 who usually make specific decisions either by themselves or jointly with their husband.			
	Malawi DHS, 2010			**This study, 2015**
	Malawi	Rural Malawi	Blantyre	TA Makata
Own healthcare	55.4	52.2	65.3	41.9
Making major household purchases	30.0	28.0	44.0	36.6
Making purchases for daily household needs	52.8	50.0	71.1	91.1
Visits to her family or relatives	66.5	64.0	75.7	82.7
Number of women	15,528	12,841	1,275	191

Table 4. Membership and empowerment using intra-household decision-making index

	OLS			Poisson
Variables	(1)	(2)	(3)	(4)
Membership	0.002	0.001	0.022	0.004
	(0.11)	(0.09)	(0.93)	(0.55)
Sponsored by husband		-0.538	-0.253	-0.046
		(2.14)**	(0.93)	(0.57)
Previous member		0.455	-0.203	-0.039
		(1.42)	(0.54)	(0.36)
Previous loan		-0.059	0.287	0.057
		(0.14)	(0.70)	(0.48)
Age			0.007	0.001
			(0.54)	(0.35)
Age at marriage			0.084	0.016
			(2.07)**	(1.33)
Christian			0.356	0.066
			(0.88)	(0.54)
Household size			0.049	0.010
			(0.75)	(0.50)
Head of household			1.273	0.212
			(4.24)***	(2.52)**
Literate			0.048	0.007
			(0.13)	(0.06)
Education			0.027	0.005
			(0.51)	(0.35)
Business/job			0.641	0.129
			(1.59)	(1.04)
Working experience			0.013	0.002
			(0.40)	(0.18)
Daily income			0.000	0.000
			(1.55)	(0.98)
Constant	5.542	5.626	0.726	0.795
	(34.21)***	(30.98)***	(0.52)	(1.91)*
Observations	216	216	216	216
R-squared	0.00	0.03	0.35	.
Adjusted R-squared	-0.00	0.01	0.19	.
Village dummies?	No	No	Yes	Yes
Tribe dummies?	No	No	Yes	Yes
Month dummies?	No	No	Yes	Yes

Note: the dependent variable is aggregated empowerment index. T/Z-values in parentheses for OLS/Poisson. Unreported constant is included.
* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 5. Membership and empowerment using reported change in decision-making after VSLA membership

Variables	OLS			Probit
	(1)	(2)	(3)	(4)
Membership	0.010	0.010	0.005	0.006
	(2.32)**	(2.37)**	(0.66)	(0.82)
Sponsored by husband		0.109	0.108	0.117
		(1.49)	(1.16)	(1.45)
Previous member		0.014	-0.057	-0.010
		(0.15)	(0.54)	(0.08)
Previous loan		0.070	0.050	0.097
		(0.58)	(0.45)	(0.93)
Age			0.007	0.010
			(2.16)**	(2.45)**
Age at marriage			0.004	0.017
			(0.33)	(1.00)
Christian			0.110	0.158
			(0.72)	(0.96)
Household size			-0.008	-0.008
			(0.34)	(0.32)
Head of household			0.129	0.171
			(1.46)	(2.13)**
Literate			-0.056	-0.099
			(0.44)	(0.85)
Education			0.007	0.010
			(0.40)	(0.57)
Business/job			-0.047	-0.116
			(0.40)	(1.05)
Working experience			-0.021	-0.025
			(1.64)	(1.89)*
Daily income			0.000	0.000
			(0.96)	(1.04)
Constant	0.579	0.541	0.033	
	(11.31)***	(9.41)***	(0.07)	
Observations	201	201	201	201
R-squared	0.03	0.04	0.27	.
Adjusted R-squared	0.02	0.02	0.11	.
Village dummies?	No	No	Yes	Yes
Tribe dummies?	No	No	Yes	Yes
Month dummies?	No	No	Yes	Yes

Note: the dependent variable is a dummy variable equal to one if the member expresses being more involved in intra-household decision-making after membership in ASAP´s VSLA. T/Z-values in parentheses for OLS/Probit. Marginal effects reported for Probit. Robust standard errors.
* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 6. Membership and empowerment using the community participation index

	OLS			Poisson
Variables	(1)	(2)	(3)	(4)
Membership	0.019	0.019	0.020	0.010
	(2.65)***	(2.72)***	(1.43)	(0.89)
Sponsored by husband		-0.093	-0.154	-0.085
		(0.73)	(0.97)	(0.63)
Previous member		0.314	0.569	0.286
		(1.96)*	(2.60)**	(1.62)
Previous loan		0.282	-0.045	-0.016
		(1.53)	(0.19)	(0.08)
Age			-0.008	-0.004
			(1.23)	(0.70)
Christian			0.274	0.146
			(1.15)	(0.72)
Household size			0.010	0.007
			(0.27)	(0.20)
Head of household			-0.341	-0.179
			(1.94)*	(1.17)
Literate			-0.152	-0.077
			(0.70)	(0.42)
Education			0.038	0.019
			(1.21)	(0.72)
Business/job			0.012	0.006
			(0.60)	(0.40)
Working experience			0.153	0.068
			(0.65)	(0.34)
Daily income			0.000	0.000
			(0.04)	(0.03)
Constant	1.810	1.763	0.902	
	(23.53)***	(20.76)***	(1.30)	
Observations	274	274	216	216
R-squared	0.03	0.05	0.24	.
Adjusted R-squared	0.02	0.04	0.07	.
Village dummies?	No	No	Yes	Yes
Tribe dummies?	No	No	Yes	Yes
Month dummies?	No	No	Yes	Yes

Note: the dependent variable is Community participation index. T/Z-values in parentheses for OLS/Poisson.
* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 7. Membership and community participation (speaking at village meetings)

Variables	OLS			Probit
	(1)	(2)	(3)	(4)
Membership	0.015	0.015	0.019	0.021
	(3.37)***	(3.45)***	(2.38)**	(2.36)**
Sponsored by husband		-0.065	-0.060	-0.065
		(0.83)	(0.66)	(0.63)
Previous member		0.200	0.263	0.351
		(2.06)**	(2.50)**	(3.52)***
Previous loan		0.115	0.059	0.102
		(1.00)	(0.54)	(0.78)
Age			0.001	0.001
			(0.32)	(0.32)
Christian			0.008	0.016
			(0.05)	(0.10)
Household size			-0.002	-0.004
			(0.10)	(0.18)
Head of household			-0.134	-0.165
			(1.41)	(1.54)
Literate			-0.144	-0.201
			(1.17)	(1.56)
Education			0.029	0.040
			(1.76)*	(2.09)**
Business/job			0.063	0.103
			(0.52)	(0.68)
Working experience			0.002	0.006
			(0.17)	(0.51)
Daily income			0.000	0.000
			(0.79)	(0.93)
Constant	0.423	0.402	-0.379	
	(8.43)***	(7.02)***	(0.89)	
Observations	211	211	211	211
R-squared	0.05	0.08	0.24	.
Adjusted R-squared	0.04	0.06	0.08	.
Village dummies?	No	No	Yes	Yes
Tribe dummies?	No	No	Yes	Yes
Month dummies?	No	No	Yes	Yes

Note: the dependent variable is a dummy variable equal to one if the member of ASAP´s VSLA has spoken at a traditional village meeting in the past year and zero otherwise. T/Z-values in parentheses for OLS/Probit. Marginal effects reported for Probit. Robust standard errors.
* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 8. Membership and financial empowerment

	OLS	Probit
Variables	(1)	(2)
Membership	0.006	0.006
	(1.95)*	(1.97)**
Working experience	0.004	0.003
	(0.77)	(0.52)
Education	-0.011	-0.012
	(1.63)	(1.74)*
Daily income	-0.000	-0.000
	(1.32)	(1.36)
Constant	0.199	
	(3.41)***	
R^2	0.04	
N	244	244

Note: Note: the dependent variable is a dummy equal to one if profits are mainly invested. T/Z-values in parentheses for OLS/Probit. Marginal effects reported for Probit. Robust standard errors.
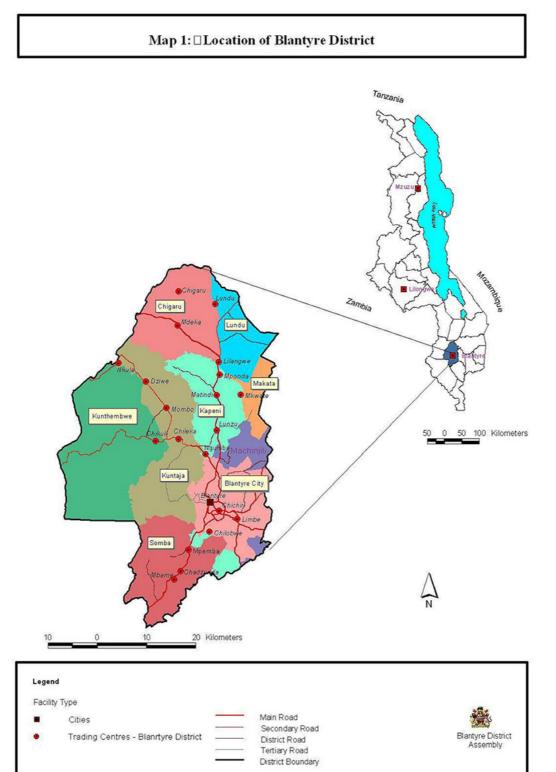* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Appendices

Appendix 1: Questionnaire

<table>
<tr><td colspan="3" align="center">INDIVIDUAL CHARACTERISTICS</td></tr>
<tr><td>1</td><td>What is your name?</td><td>Name:</td></tr>
<tr><td>2</td><td>What is the name of the region?</td><td>Region:</td></tr>
<tr><td>3</td><td>What is the name of the village?</td><td>Village:</td></tr>
<tr><td>4</td><td>What is the name of the VSL-group?</td><td>VSL-group:</td></tr>
<tr><td>5</td><td>How many members are you in the group?</td><td>Number of members:</td></tr>
<tr><td>6</td><td>How old are you?</td><td>Years:</td></tr>
<tr><td>7</td><td>What is your religion?</td><td>Christian(1) Muslim(2) Traditional(3) Other(4)</td></tr>
<tr><td>8</td><td>What is your ethnic group or tribe?</td><td>Chewa(1) Tumbuka(2) Lomwe(3) Tonga(4) Yao(5) Sena(6) Nkhonde(7) Ngoni(8) Other(9)</td></tr>
<tr><td>9</td><td>What is your marital status?</td><td>Single(1) Married(2) Divorced(3) Widowed(4) Separated(5) Partner(6)</td></tr>
<tr><td>10</td><td>If married, how old were you when you first got married?</td><td>Age/Year:</td></tr>
<tr><td>11</td><td>How many children do you have?</td><td>Total:</td></tr>
<tr><td>12</td><td>What is the size of the household?</td><td>Total:</td></tr>
<tr><td>13</td><td>What is your relationship to the head of the household?</td><td>I am head of household(1) Spouse/Partner(2) Other relative(3) I am the head of the household together with husband/partner(4) Other(5)</td></tr>
<tr><td>14</td><td>Can you read and write?</td><td>Yes(1) No(2) Only read(3) Only write(4)</td></tr>
<tr><td>15</td><td>How many years of education do you have?</td><td>Years:</td></tr>
<tr><td colspan="3" align="center">BUSINESS</td></tr>
<tr><td>16</td><td>Do you currently have a job or business?</td><td>Yes, I have a job(1)
Yes, I have my own business(2)
Yes, I have both a job and a business(3)
No, I am a student(4)
No, I am unemployed(5)</td></tr>
<tr><td>17</td><td>Did you have a job or business before entering the VSL group?</td><td>Yes, I had a job(1)
Yes, I had my own business(2)
Yes, I had both a job and a business(3)
No(4)</td></tr>
<tr><td>18</td><td>How many years of working experience do you have in total?</td><td>Years:</td></tr>
<tr><td>19</td><td>How many hours per day and how many</td><td>Hours per day:</td></tr>
</table>

	days per week on average, do you usually work in your current business/job?	Days per week:
20	What is your daily total income/profit?	Income/profit per day (MWK):
21	How are the profits from your business/income from your employment spent?	Mainly household consumption(1) Mainly investment in business(2) Equal parts invested/consumed(3) No profits/income(4) Other(5)

<div align="center">

VSL

</div>

22	When did you join the current VSL group?	Month/year:
23	Were you a member of another VSL before entering this group?	No(0) Yes(1)
24	How many members were you when you started?	Members at start:
25	Compared to before entering the VSL, would you say that you now save less, more or about the same?	Less(1) More(2) About the same(3)
26	Compared to before entering the VSL, would you say that you now borrow less, more or about the same?	Less(1) More(2) About the same(3)
27	Had you taken any loan before entering this VSL group? If so, from where did you acquire the loan?	Had not taken a loan(1) Husband(2) Friends/relatives(3) Informal lender(4) Formal lender (banks)(5) Another MFI(6) Other(7)
28	How did you come up with the initial money needed to enter the VSL?	Personal income/profits/savings(1) Borrowing from husband(2) Donation from husband(3) Borrowing from friends/relatives(4) Donation from friends/relatives(5) Other(6)
29	How much was your initial contribution to the group you belong to?	MWK:
30	How are the loans from the VSL spent?	Mainly household consumption(1) Mainly investment in business(2) Equal parts invested/consumed(3) Have not yet received a VSL loan(4) Other(5)

<div align="center">

DECISION-MAKING AND COMMUNITY PARTICIPATION

</div>

31	Would you say that the money that you bring into the household is more than what your husband/partner brings in, less than what he brings in, or about the same?	More than husband/partner(1) Less than husband/partner(2) About the same(3)

32	Who decides how the money you earn will be used?	Mainly you(1) Mainly your husband/partner(2) You and your husband/partner jointly(3) Other(4)
33	Who usually makes decisions about making major household purchases?	Mainly you(1) Mainly your husband/partner(2) You and your husband/partner jointly(3) Other(4)
34	Who usually makes decisions about making purchases for daily household needs?	Mainly you(1) Mainly your husband/partner(2) You and your husband/partner jointly(3) Other(4)
35	Who usually makes decisions about visits to your family or relatives?	Mainly you(1) Mainly your husband/partner(2) You and your husband/partner jointly(3) Other(4)
36	Who usually makes decisions about health care for yourself?	Mainly you(1) Mainly your husband/partner(2) You and your husband/partner jointly(3) Other(4)
37	Who usually makes decisions about health care for your children?	Mainly you(1) Mainly your husband/partner(2) You and your husband/partner jointly(3) Other(4)
38	Who usually makes decisions about whether or not to enroll your children to school?	Mainly you(1) Mainly your husband/partner(2) You and your husband/partner jointly(3) Other(4)
39	Who decides how many children to have?	Mainly you(1) Mainly your husband/partner(2) You and your husband/partner jointly(3) Other(4)
40	Compared to before entering the VSL group, would you say that you are now less, more or about the same involved in decision-making within the household?	Less(1) More(2) About the same(3)
41	Have you talked to the village chief in the past year?	No(0) Yes(1)
42	Have you participated in a village meeting in the past year?	No(0) Yes(1)
43	Have you spoken at a village meeting in the past year?	No(0) Yes(1)

Appendix 2: Map of Malawi/Blantyre/TA Makata

Map 1: Location of Blantyre District