# Saving to Empower the Disabled:
## An Impact Study from Rural Uganda

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# Abstract

A billion people around the world live with disabilities, and 80% of them live in developing countries. Persons with disabilities are overrepresented among those who live in absolute poverty and they generally have poorer health, lower education and fewer economic opportunities than those without disabilities. This thesis examines how Village Savings and Loan Associations (VSLA) affect persons with disabilities (PWD) in rural Uganda. The project we examine, *We Can Manage*, was initiated by the Norwegian Association of Disabled (NAD) and National Union of Disabled Persons of Uganda (NUDIPU). Focus is to explore the project's effect on social empowerment and entrepreneurial traits in participants. A randomized controlled trial with survey and in-field lab experiment was conducted to examine how confidence, trust, happiness, locus of control, willingness to compete and willingness to take risk was impacted. We found that implementation of the VSLA increase PWDs willingness to compete, confidence in other villagers as well as locus of control. We also found an increase in locus of control for males. Our findings indicate that implementation of projects with VSLAs, such as *We Can Manage*, can have an empowering effect on its participants.

# Preface

This paper presents our final thesis in Economics and Business Administration at the Norwegian School of Economics (NHH). It was a short-term follow-up study, part of a larger study conducted in rural Uganda. The Norwegian Association for Disabled (NAD) initiated the study together with NHH to document results in a project NAD supports abroad. The research was conducted in cooperation with the National Union of Disabled Persons of Uganda (NUDIPU).

We would like to thank NUDIPU, NAD and NHH for a successful cooperation. We would also like to express our gratitude to our supervisor Professor Kjetil Bjorvatn, as well as his research partner Professor Bertil Tungodden, for having confidence in our ability to carry out this project successfully. We would also like to extend our gratitude to George Mukasamukisa, Anne-Lise Breivik, Ingvild Lindgren Skarpeid, in addition to all research assistants for conduction the data collection.

Finally, we wish to thank our families for support and motivation throughout this process.

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# 1. Introduction

A billion people around the world live with disabilities, and 80% of them live in poor countries. Disabled people are overrepresented among those who live in absolute poverty and they generally have poorer health, lower education and fewer economic opportunities than those without disabilities (WHO, 2011; Abimanyi-Ochom & Mannan, 2014). Persons with disabilities (PWD) are rarely heard in governmental proceedings, due to physical isolation, discrimination and lack of education they are less visible in the official matters. This also applies to poverty and developmental programs. The World Report on Disability (2011, p. xi) argues that

> "to achieve the long lasting, vastly better development prospects that lie at the heart of the 2015 Millennium Development Goals and beyond, we must empower people living with disabilities and remove barriers which prevent them participating in the communities; getting a quality education, finding decent work, and having their voices heard."

Many are working for disabled to be able to move out of poverty and instead contribute actively to their communities. To be able to do this PWDs need access to financial services. Many financial institutions and help organizations are trying to reach out to this vulnerable group. One example is the *We Can Manage* (WCM) inclusive microfinance project implemented in rural Uganda by National Union of Disabled persons of Uganda (NUDIPU) in collaboration with Norwegian Association of Disabled (NAD). It targets disabled people and women in particular. The idea behind the project is to reduce financial barriers and build capacity and confidence among participants, and encourage disabled and women to improve their own lives by becoming more independent.

This thesis examines the effect of WCM on the mindset of the participants. We focus on six characteristics within the participants; confidence, trust, happiness, locus of control, willingness to compete and willingness to take risk. These are meant to give an impression of how WCM can impact social empowerment and willingness to become entrepreneurs. If the project yields positive effects, this will give a way to advance the situation for perhaps the most vulnerable group in society: disabled and women in the rural areas of a developing country.

The next section outlines the context of this thesis. Section three presents relevant theory and previous research on the subject. In section four and five we present our methods, and our results. Lastly, we discuss our findings in relation to literature and conclude.

# 2. Context

## 2.1. Uganda

Uganda is a country in Eastern Africa with borders to Kenya, South Sudan, Democratic Republic of Congo, Rwanda and Tanzania. With a population of 38 million, the country is significantly overpopulated[1]. In the last 12 years, the population has grown with over 10 million, leading to the lowest median age in the world of 15 years (UBOS, 2014). Their current president is Yoweri Museveni, who has had the position since 1986. His rule has been under scrutiny from other world powers, especially since he in 2005 abolished the restrictions for presidential term to enable himself to stay in power longer. Uganda has also passed a bill that make homosexuality illegal, which is receiving a lot of negative international attention (The Anti-Homosexuality Bill, 2009).

The country's poverty rates are very high with almost 38% of the population living on $1.25 or less per day. This percentage has been decreasing the last years, but the population has been increasing, so the actual number of people living below the national poverty line is increasing still. This makes Uganda one of the poorest countries in the world. Poverty is deeply rooted in the rural areas of the country where close to 85% of the population lives. The agricultural sector employs the bulk of the labor force, presenting the population with unstable incomes and little opportunity to climb out of poverty. Despite this, the government has committed to meeting the United Nations Millennium Development Goals. They are officially focusing on poverty, gender equality and women's empowerment, reduction of child mortality and environmental sustainability. However, the country, still has a long way to go before it reaches these goals, since economic inequality is high. Uganda ranks quite low on the scale for anti-corruption, ranking number 142 of 175 (Transparency International, 2015).

## 2.2. Disability

The definition of disability varies. UN's Convention on the Rights of Persons With Disabilities defines persons with disabilities as "those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others" (UN General Assembly, 2007). They specify that in addition to being a health problem it also affects the

[1] This section about Uganda is taken largely from World Bank, 2015 and Gatsiounis, 2012.

living situation and hinders participating in society. Globally, more than one billion people today live with some form of disability[2]. The World Health Organization found that disabilities disproportionately affect vulnerable populations. There is significantly higher prevalence of persons with disabilities (PWDs) in lower income countries that in high-income countries.

Approximately half of all disabled people do not have access to healthcare or financial services. This limits both their ability to stay healthy, and their ability to move out of poverty. Governmental policies around the world are not proficient in including and protecting disabled persons from discrimination. Provision of services within health, rehabilitation, welfare and education is lacking, and PWDs involvement in governmental decision-making is low. Discrimination and exclusion is very common for the disabled. Financial and health institutions can be located in buildings without wheelchair access or without elevators, but they can also deliberately exclude PWDs due to lack of faith in their abilities (Abimanyi-Ochom & Mannan, 2014). These factors are creating a situation where persons with disabilities have severe difficulties increasing their incomes and improving their quality of life.

Physical limitations, combined with attitudinal and structural barriers, make daily life for persons with disabilities particularly difficult. These obstacles may influence how they perceive themselves and their quality of life. Persons with disabilities often report lower levels of subjective well-being and life satisfaction than others. Research also suggests that their self-esteem is lower (Smedema, 2014). For this reason, they are exceedingly in need of empowerment.

Helping persons with disabilities is an important developmental issue. The UN Convention on the Rights of Persons With Disabilities state that there is a need to see this as a humanitarian issue (UN General Assembly, 2007). World Health Organization and World Bank recommend promoting self-employment aimed at PWDs to combat poverty in developing countries. They emphasize that governmental policies should enable people to earn and empower them to become contributing members of a larger economy, instead of burdens on their communities or charity.

[2] This section about disability is based mainly on statistics and information from World Health Organization (WHO, 2011)

## 2.3. Disability and Uganda

The Uganda Bureau of Statistics (UBOS) found in 2012 that approximately 19 percent of the population in the country has a disability (UBOS & ICF, 2012). The prevalence of disabilities increases drastically with age, moving from 12 percent among children aged 5-9 to 67 percent among those aged 60 and above. Difficulties in seeing and walking or climbing stairs are the most common types of disabilities (UBOS & ICF, 2012). UBOS also found that 10 percent of persons with disabilities between the ages of 6 and 24 were not limited by their difficulties to attend school. That does however mean that a vast amount of PWDs do experience difficulties and limitations due to their handicap. These limitations lead to poor economic participation and worse educational outcomes for PWDs, leaving them in a vulnerable position (Abimanyi-Ochom & Mannan, 2014). This will have consequences for their ability to make a living and contribute to society.

Being born with a disability is often viewed as a curse in Uganda (Øygard, 2012). This creates additional challenges for PWDs as they often will be excluded and avoided in their communities (Øygard, 2012). Nevertheless, Uganda is among the leading countries on the African continent when it comes to organized and governmental involvement on behalf of persons with disabilities. The National Union of Disabled Persons of Uganda (NUDIPU) takes part in the planning and implementation of programs that aim to improve the situation for PWDs. They create awareness on disability issues on national and community level, build district unions and advocates for inclusion of PWDs in economic empowerments programs. NUDIPU are actively working towards improving the lives of the persons with disabilities in Uganda, and taking part in the work of transforming PWD's from being charity cases or burdens, to contributing members of society with vast opportunities for the future (NUDIPU, 2015).

Uganda has an active history of disability activism and has excelled in developing legislation to uphold disability rights. Despite this, most have not been implemented. There is still a gap between legislation, law and practice. Negative cultural attitudes toward disability, poor governmental funding, inadequate training in inclusive education and limited access to information and assistive measures, are some of the factors that maintain this gap. Cultural

attitudes are still negative and perceptions have been indicated as the greatest obstacle to disability inclusion (Abimanyi-Ochom & Mannan, 2014).

## 2.4. We Can Manage

More than 70 percent of the world's extremely poor live in rural areas. Remote locations make it harder to access financial services and opportunities[3]. Most people in rural areas make their living from agriculture, exposed to fluctuations in both weather conditions and economic markets. As a response, many financial institutions and aid organizations have tried to reach these people with different kinds of financial services. Village Savings and Loan Associations (VSLA) is one example. VSLA is a style of inclusive microfinance that is self-financed and self-managed. All funds come directly from the group members, and there is no funding from outside organizations.

*We Can Manage* implements VSLAs in the Manafwa district, Uganda. The main objective of a VSLA is to be a saving group. Small groups are formed in communities and members save their money together. They are then able to give each other small loans from the savings that they have created together. In *We Can Manage*, there are about 30 members in each group. The groups have regular meetings, commonly once a week, where they meet to save and discuss potential loans. Each participant buys shares rather than depositing their savings. This helps accounting management. One share equals one stamp in a logbook. Each member buys at least one share per meeting, but each group decides the value of one share. The safety of the fund ensured by choosing multiple people to be in charge and responsible. The groups elect four leaders in the first meeting. They have a key each to one of the padlocks on the savings box where the funds are kept. The box can not be opened without all four keys, and it will be kept in a fifth person's home. No one can access the box or the funds outside of the weekly meetings, where all members are to appear. Leaders stay in this position for the entire period, usually lasting twelve months.

Loans are allocated to members based on need. At the weekly meetings, the groups discuss loan requests collectively. The size of the loan is dependent on the funds available and the amount that individual has contributed. The loans are paid back with 1% interest. Demanding an interest rate ensures growth in funds, thus serve as interest on savings. Through VSLAs,

[3] This information about VSLAs in this section is taken largely from Karlan et al. 2013 and Ksoll et al. 2012

participants are kept from spending their savings, and are also earning interest on their savings. At the end of the saving cycle, the group holds a share-out where the funds are returned to the members with interest. At this point, members decide whether or not to enter a new cycle.

A Non-Governmental Organization usually activates the VSLA. In *We Can Manage*, the implementing group is NUDIPU, and they go through training and follow up with villagers. When the groups are activated, they are assisted with writing a constitution, taught how to access the savings-box and how to run the group in general. NUDIPU follow up the newly created groups during the first year to ensure progress and correct implementation. The sustainability of the group is dependent on the relationship between the members. Participants are therefore encouraged to form groups with people they trust. This facilitates a low cost of enforcement, using personal relationships as insurance instead of threats of sanctions.

Ksoll, Lilleør, Lønborg and Rasmussen argue that being part of a VSLA also functions as a commitment device. This means that being a member forces the participant to save for the future instead of spending it now. Commitment is important because there are many factors that make it challenging to save on a regular basis, and people will often need an obligation to be consistent. There are both internal and external constraints to saving. The external factors include lack of access to formal financial institutions, risk associated with use of informal services, and family obligations (Karlan, 2014). Most PWDs live outside the range of financial institutions, so their option is to take private loans, which poses large risks such as high interest rates or illegal activity. Family obligations may include family members who are sick or husbands who control the funds. Internal constraints include impatience, temptation and financial illiteracy (Karlan, 2014). The temptation of spending today is strong, and people have tendencies to procrastinate and think that saving will be easier next week. Financial illiteracy is also crucial, most persons with disabilities are uneducated and may therefore not understand how to save (Abimanyi-Ochom & Mannan, 2014).

Different versions of rural savings groups have existed for many years. Microloans has been widely spread. Rotating Savings and Credit Associations (ROSCA) is one example. They were created as a way to help people without lending money from an external source. As in VSLAs, groups are created within villages and members pool their money and save together. However, loans are awarded on a fixed, rotating schedule. VSLA was created by CARE, a

leading humanitarian organization, as a response to this limitation in ROSCAs. VSLAs are more flexible and loans are given out when they are needed instead of on a strict rotating schedule. This gives participants control over the loans and makes it possible for them to handle a diverse set of problems, like drought or paying school fees.

# 3. Literature Review

## 3.1. Empowerment

VSLAs and microfinance are tools used to achieve economic empowerment (Karlan et al., 2012). Economic empowerment allows people greater control over their lives and resources, as well as enabling them to think beyond surviving the next days or weeks (GSDRC, 2015). Another important aspect is to encourage control over own decisions, such as potentially taking risks to increase income. One way of working towards economic empowerment is through encouraging income-generating activities, for example entrepreneurial activity.

Social empowerment, a compliment to economic empowerment, is also influenced by VSLAs. Social empowerment is the process of creating or establishing a sense of independence and self-confidence in people. Social empowerment seeks to increase people's capabilities (health, belonging, self-esteem) and thereby their social positions and influence (GSDRC, 2015).

Entrepreneurial traits are beneficial to economic growth, sustainable development and social empowerment (Sigalla & Carney, 2012). This is also what *We Can Manage* is trying to impact. Entrepreneurial traits are characteristics considered key of enterprising individuals (Cromie, 2000). Entrepreneurship has been prominent in countries that have achieved meaningful poverty reduction the last three decades. In addition, it has been the focus for aid organizations and development agents to improve effectiveness and sustainability of aid (Naudé, 2012). For the purpose of this thesis we stick to a simple understanding of entrepreneurship as the act of starting a new business (Williams, 2014).

In this short-term follow-up, we focus on social empowerment and entrepreneurial traits as this in the long term can lead to economic empowerment. We look at the social aspects; confidence, trust, and happiness, and the entrepreneurial traits; locus of control, willingness to compete and willingness to take risk.

## 3.2. VSLA

Karlan and Ksoll[4] have studied the effects of VSLAs in different parts of sub-Saharan Africa. Karlan conclude that there are definite effects from the VSLA on the participant's financial behavior. There is evidence that people are using the share-out money and loans to pay school fees for their children, and there is a slight increase in enrollment in primary school. Ksoll also find that there is an increase in the use of fertilizers and improved seed varieties. This can in turn improve income levels for members. Participants of VSLAs show tendencies to be more willing to use credit, which relates to an increased willingness to participate in entrepreneurial activities. Both Ksoll and Karlan conclude with significant positive effects on communities from participating in VSLAs. However, the communities' ability to mitigate economic shocks remains unchanged. Ownership of livestock also remains constant, which is closely related to the minimal impact on poverty levels.

Ksoll found that there was a majority of women in VSLAs. Studies show that women who participate are more likely to take out loans and start their own businesses. In addition, the income from entrepreneurial businesses tend to increase in treatment groups. This finding leads Karlan to conclude that there is an increase in the empowerment of women related to day-to-day spending decisions, such as spending on food and education. Gugerty (2007) also concludes that an important aspect of these types of programs is that it renders savings illiquid. This allows the member to protect the funds from consumption and demands of household or kin, closely related to the potentially increased power women can attain from being part of a VSLA.

## 3.3. Locus of Control

Locus of control was first introduced by Rotter in 1966. He made a distinction between internal and external control of reinforcement. Internal control refers to the degree to which persons perceive the life events to be contingent on own behavior or personal characteristics (Rotter, 1966). External control refers to if persons perceive events as a result of luck, chance, fate, or powerful others (Rotter, 1966). Recent studies use the term locus of control when referring to internal control (Rotter, 1990).

[4] Literature about VSLA is gathered from Ksoll et al., 2013 and Karlan et al., 2012. Referred to as simply Ksoll and Karlan in the text

Individuals with internal locus of control tend to be more action oriented and motivated (Perry & Morris, 2005) and they believe that achievement is dependent on hard work, determination and planning (Westhead & Wright, 2013). They link effort and outcome, and therefore are expected to put more effort into activities they believe can help them achieve their goals. This is essential for entrepreneurs. Bonnett and Furnham (1991) found that internal locus of control was positively associated with the desire to become an entrepreneur. Furthermore, Shane and Venkataraman (2000) argue that people with more internal locus of control are more likely to exploit opportunities.

VSLAs aim to contribute to control over savings and spending. Commitment to regular saving helps members better manage their personal finances and improves monetary control. The accumulation of funds can also help group members feel that they may impact their life, as they for example are able to make investments. In addition, Cobb-Clark, Kassenboehmer and Sinning (2013) analyzed the link between individuals' locus of control and their savings behavior, and found that individuals with an internal locus of control save more and increase their economic well-being.

## 3.4. Happiness

Happiness lies at the heart of social development and empowerment. It has many definitions within the realm of research, but it is commonly used as a term to measure well-being and satisfaction, or quality of life (Veenhoven, 2011). These factors are the focus of developmental projects worldwide. The overarching goal is often to increase the subjective well-being and quality of life of marginalized people around the world. Development is the process of trying to promote well-being through abundance (Schimmel, 2007). Monetary gain, for example, is a tool to reach the goal of increased well-being as it can provide opportunities. VSLAs are a way of reaching monetary gain, and thereby happiness, for the most vulnerable populations (Gardner & Oswald, 2001; Karlan et al., 2012)

It is disputed how this measure of happiness is influenced by economic growth and development. The most renowned research on the subject is the finding of the Easterlin paradox. The paradox states that average happiness does not increase as countries grow wealthier (Easterlin, 1974). However, newer research has found that this may not always be the case. For example, Veenhoven (2011) performed an analysis across 141 countries over a

20-year period to see which social factors influenced happiness. She found mixed results from her analysis. However, she did find that there is a slight, but consistent and positive correlation between economic growth and happiness. Graham (2005) also found that even though the impact of economic growth on happiness in general was small, the relationship was stronger at the lower end of the income scale.

## 3.5. Trust

Trust can be divided into interpersonal trust and institutional trust. Institutional trust refers to the trust that people have in institutions, as for example banks or lending services (Welter, 2012). Interpersonal trust, on the other hand, refers to the trust that exist between people and is the type of trust we will refer to in this thesis. We are interested in the role that interpersonal trust plays in the relationships between people who are interdependent through VSLAs.

Trust is a factor of social empowerment. An increase in trust can lead to more stable conditions within communities. Studies have found that focusing on trust in the implementation and execution of savings and loan groups improve financial sustainability (Epstein & Yuthas, 2011). Trust stimulates individuals to cooperate. Combining knowledge and skills facilitates learning and development. Personal growth through increased knowledge and skills is empowering for the individual, and has positive effects in the community. Etang, Fielding and Knowles (2010) found that members of savings and loan groups show signs that their trust in others improves through participation. This does not only favor the members of the group, but also other people in their village and people in general. In other words, a VSLA can improve trust within villages, which again can lead to cooperation, improved living conditions and development.

Trust affects the process of becoming an entrepreneur greatly (Ashleigh & Warren, 2015). In an entrepreneurial process, the person is exposed to a high degree of uncertainty and risk. Studies have shown that trust between lenders and entrepreneurs improves performance and increases the chances of success (Ashleigh & Warren, 2015), which in turn increases the chances of the loan being paid back. Repaying loans is especially important in VSLAs since members are both awarding and receiving the loan. Trust among the villagers is important because it increases the chance of accomplishment and potentially willingness to become an

entrepreneur, thereby having a positive effect on both the entrepreneurial individual and the village by increasing capital.

An important aspect of VSLAs is to be sustainable (Karlan et al., 2012). Etang, Fielding and Knowles (2010) assert that trust is a requirement for the success of lending groups. Trust can keep costs low by avoiding the need for constructing costly contracts and sanctions. The model relies instead on the trust between members and their commitment to stay within the lines of the model (Brannen, 2010). Trust between members is also responsible for high repayment performance (Epstein & Yuthas, 2011), which is critical when VSLAs are implemented in very poor areas where the lenders are family, friends and fellow villagers. Epstein and Yuthas (2011) observe that being able to choose group members they trust is decisive. Through trust, the cost of being part of a VSLA is low and this way the model can reach the poorest in rural areas (Brannen, 2010). This is a crucial part of the model for VSLAs (Karlan et al., 2012).

## 3.6. Willingness to Compete

An individual's willingness to compete, or competitiveness, has been extensively researched. It relates to a person's preference when given options to take a safe choice or to compete and potentially increase winnings. These choices are present in everyday life, for example when choosing to play a lottery, to invest money or in employment situations. If a person is more willing to compete, he or she will be more comfortable with being an entrepreneur and compete for customers and income. This trait has been connected to entrepreneurial activity since early 1930s (Bönte & Piegeler, 2012). Entrepreneurial activity requires the individual to compete for the success of their business.

To measure people's willingness to compete researchers often conduct experiments. This involves placing people in a position where they have to make a choice between a safe payment and a more uncertain but potentially larger payment. Berge, Bjorvatn, Tungodden and Pires (2015) found that willingness to compete is an important trait in entrepreneurs as it shapes choices. They also conducted an experiment to find if there was a correlation between the results they found in the lab and actual success in the marketplace. Results showed that individuals who scored high on willingness to compete in the experiment also took competitive choices in the field. Tanzanian small-scale entrepreneurs with a high willingness

to compete show higher profits than their counterparts (Berge et al., 2015). Willingness to compete is the entrepreneurial trait that is most consistently associated with competitive choices and successful outcomes.

There are distinct gender differences within willingness to compete (Gupta et al., 2013). Males are generally more willing to compete, and these findings are consistent in most countries (Bönte & Piegeler, 2012). This is often combined with a higher willingness to take risk and contributes to the fact that there is a higher proportion of men participating in entrepreneurial activities. Academics argue that this difference between genders in willingness to compete is contributing to the gap between males and females in society (Bönte & Piegeler, 2012).

## 3.7. Confidence

Confidence is often viewed as a general construct and does not have an agreed upon definition (Cramer et al., 2009). Self-confidence can be thought of as the belief in own ability to perform, in general or specific situations (Stankov et al., 2014). It is a subjective evaluation of own abilities that influences individual decision-making and behavior (Dimov, 2010). Confidence in others can be understood as one's perception of others' ability to perform.

Empowerment seeks to foster people's confidence (Rowlands, 1997). Impact evaluations of VSLAs and other savings groups have found the programs to be positively associated with self-confidence (Norad, 2007; Brannen, 2010). An increase in the belief in one's abilities can generate action and change (Cramer et al., 2009), while also encouraging initiatives in the community. In addition, an increase in people's confidence in others is beneficial for a community as it can emphasize the value of other villagers' abilities, stimulate better use of human resources available and encourage cooperation. An increase in confidence, in self and others, is therefore an important factor in social empowerment, both for the individual and the community.

Confidence is also important for entrepreneurial behavior. A potential entrepreneur both assess market opportunities and own ability to establish and run a business. Dimov (2010) found that persons with confidence in business feasibility and own abilities show higher entrepreneurial activity. Furthermore, in a cross-national study on entrepreneurial activity,

Koellinger, Minniti and Schade (2007) found that confidence in one's own entrepreneurial skills was a major driver for the decision to start a business. Individuals in early stages of the entrepreneurial process were found to be particularly confident (Koellinger et al., 2007). An increase in confidence can therefore be encouraging for entrepreneurial behavior.

Confidence is commonly studied as a relative measure or a comparison, and many researchers study the concept of over- and under-confidence in relation to entrepreneurship. One form of overconfidence is when people believe themselves to be better than others (Moore & Hearly, 2008). This kind of overconfidence is often measured and described as better-than-average (Moore & Hearly, 2008). The better-than-average effect relates to self versus average peer comparisons on behavior and trait dimensions (Alicke & Govorun, 2005). A better-than-average belief can be what encourages people to start a business as one often operate in a competitive environment. Camerer and Lavallo (1999) conducted an experimental entry game and found that overconfidence in relative ability leads to a high rate of business entry. However, people who are overconfident underestimate the quality of their competition. This can help to explain why so many new business fail in the market (Camerer & Lavallo, 1999).

## 3.8. Willingness to Take Risk

Individuals exhibit large variances in willingness to experience risk in their decisions. It is a personal trait that affects a person's willingness to partake in activities where they are exposed to risk, such as being an entrepreneur. Risk refers to the unpredictable nature and potential downside that performance or decisions can present (Block et al., 2015). In other words, risk is the potential for negative consequences that can arise from choices that a person takes.

Entrepreneurs are often associated with risk, as they have to make decisions in risky conditions and uncertain environments (Caliendo et al., 2009). It is an essential trait for entrepreneurs (Block et al., 2015; Koh, 1996). The connection between willingness to take risk and successful entrepreneurial activities has been studied extensively. Willebrands and Lammers (2012) argue that entrepreneurs who are less willing to take risk are likely to accept a lower return on investment in order to experience lower risk. This means that entrepreneurs whose preference is to avoid risk will favor a low and safe income over a potentially higher

but more volatile one. Therefore, a person who is less willing to take risk is less likely to become a successful entrepreneur (Caliendo et al., 2006).

On the other hand, Willebrands and Lammers (2012) also found that success was non-linearly affected by willingness to take risk. Very high or very low preferences will decrease the likelihood that the business will survive, while individuals with the values in the middle will perform better. Entrepreneurs with values too high take unnecessary risks where they are not warranted, and those with willingness too low do not take the needed risk to exploit opportunities. Researchers argue that being in the middle of the spectrum will keep entrepreneurs from becoming gamblers, and keep them aware of the potential negative effects, which again reduce consequences (Willebrands & Lammers, 2012).

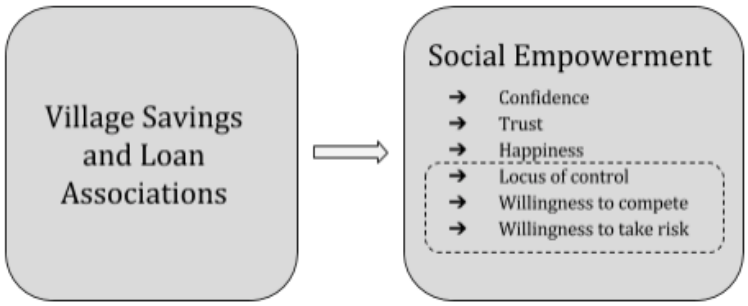
Block, Sandner and Spiegel[5] made a distinction within the effect of willingness to take risk in entrepreneurs, by distinguishing between opportunity and necessity entrepreneurs. Opportunity entrepreneurs are motivated by self-realization, autonomy and creativity, and they take advantage of business opportunities. Necessity entrepreneurs start businesses because they do not have any other option to earn an income, for example due to discrimination in the job market or a downturn in the economy (Williams & Williams, 2014). There are significant differences. Opportunity entrepreneurs are more willing to take risk, as they place higher value on non-monetary returns and are less worried about the consequences of business failure. Contrastingly, necessity entrepreneurs are not pulled in to starting a business by alluring effects, they are pushed in by the need to create income. Therefore, they are more concerned with the monetary gain and less willing to take risk. Taking risk in this scenario can jeopardize their whole livelihood and have severe consequences. The difference between opportunity and necessity entrepreneurs is that necessity entrepreneurs become entrepreneurs out of need, and therefore do not always possess the same characteristics as opportunity entrepreneurs.

## 3.9. Our Expectations

Based on the above-mentioned research of the impacts of VSLAs, we hypothesize that *We Can Manage* will have a positive impact on social empowerment for disabled in rural Uganda. We expect an increase in all of our variables; confidence, trust, happiness, locus of control,

[5] This section about willingness to compete is based largely on Block et al., 2015

willingness to compete, and willingness to take risk. In other words, we expect the average estimates in the treatment group to be higher than the average estimates in the control group.



# 4. Methods

## 4.1. Study design: Randomized Control Trial

An experimental design was used to evaluate the causal effect of the WCM program on the mindset of the participants. Evaluating the impact of an intervention can be done by comparing people who participated in the intervention with similar people who did not participate (Karlan et al., 2012). The experimental design compares a group exposed to the intervention with a similar group acting as a control group. It seeks to answer a counterfactual; what would the outcome have been if the intervention had not taken place. The question can never be answered, but the experimental design aims at imitating this through the method of randomly selecting groups into either treatment or control. This is what characterizes randomized controlled trials (RCT). RCTs are known to be the most rigorous way to identify statistically similar groups of people and are by many development economists seen as the 'gold standard' (Karlan et al., 2012). A successful randomization leads the treatment and control groups to be equal on both observable and unobservable characteristics. Any observed differences in outcome can therefore be attributed to the intervention.

NUDIPU recruited 75 groups to participate in the program. The randomization was done on location level, to minimize uptake of VSLAs in control areas. Such spillovers could bias the estimation of treatment effects (Duflo et al., 2007). 63 unique 'locations' were constructed, clustering groups located close to each other. Each location consisted of more than one group if groups were situated close to each other. The locations were randomly assigned into treatment and control. There are 31 treatment locations, consisting of 35 groups, and 32 control locations, consisting of 40 groups. This method of assignment is called a clustered randomized controlled trial (Karlan et al., 2012). By randomly implementing the VSLA intervention, we eliminated the possibility of non-random program placement (Duflo et al., 2007).

## 4.2. Sample and Participants

The Norwegian Association of Disabled was the initiator of this research, and NUDIPU recruited and trained the participants. Initially, NUDIPU recruited community mobilizers. Each community mobilizer recruited four groups, consisting of 30 members. They were

encouraged to mobilize as many PWDs as possible. Together with local 'disability leaders' they held an awareness meeting in each community. Community members organized themselves and contacted the mobilizer to become part of WCM. These participants constitute the baseline, a total of 1916 individuals. Participants were contacted and interviewed in July 2013. The baseline includes information about socio-economic background, business knowledge, financial practices, and personal characteristics.

NUDIPU's community mobilizers activated treatment groups and implemented VSLAs in the period December 2013 to March 2014. Activation consisted of startup facilitation and training on how to run the group. A short-term follow-up study was conducted in June 2015. We use this dataset in our thesis. The control groups were not activated, but will be after the long-term follow-up study.

For the short-term follow-up study, the participants were separated into two samples. A random selection of participants with children aged fourteen to sixteen were separated into an A-list. This list included 446 participants, 428 were reached. Six had passed away, two were sick and ten were unreachable for reasons such as relocation. The rest of the participants were included in a B-list. This thesis will consider the A-list as our complete sample. By constricting the number of participants, the data collection was more cost and time effective. There were 572 children in the A-list.

Our sample consists of 60 percent disabled persons. These individuals have varying disabilities. Most suffer from physical impairments that limit use of their legs and feet. Others have challenges with the use of their arms or hands, hearing impairments or epilepsy. Individuals with mental disabilities are not included in this study.

The participants are on average forty-six years old, and over 70 percent are living with their spouse or partner. Educational level is low in rural Uganda, 79 percent have only completed primary school or less. When it comes to their financial standing, 73 percent had income from agricultural activity in the past twelve months. This can be seen in connection with employment rates for this period, 64 percent have not been employed (excluding self-employment). Regarding saving attitudes, over 70 percent report that they do not have enough money to save.

As a part of the short-term follow-up study, an in-field lab experiment was conducted. This experiment was performed to measure the treatment effect on the participants' confidence, willingness to compete, and willingness to take risk. The sample was a random selection of the groups in the A-list. Ten groups were chosen, five in the control group, and five in the treatment group. Six persons from each of these groups were randomly selected. A total of 44 participants took part in the experiment (76 percent).

## 4.3. Data Collection and Measurements

### 4.3.1. Survey

A survey was conducted to collect data on happiness, trust and locus of control. Research assistants visited all the villages selected for the study. They asked the participants the survey questions in person (face-to-face). Many participants were illiterate, and this ensured that all participants understood the questions and could answer them. The survey consisted of questions regarding short-term outcomes of the intervention; general happiness, economic happiness, trust and locus of control. The data in the survey is self-reported.

To measure happiness two sub-categories were used; general happiness: "How happy are you with your life in general?" and economic happiness: "How happy are you with your economic situation?" This was done to reveal if the intervention affected one type of happiness more than the other did. Happiness was measured on a Likert-like scale, ranging from 1 to 5, where one is "very unhappy" and five is "very happy". By using a scale from 1 to 5, a neutral option was included not to force the participants to take a stand.

Trust was measured by asking participants "How much do you trust people in your village?" The scale ranged from 1 to 4, where one is "Not at all" and four is "I trust them a lot". An option 5, "Don't know", was also included.

Locus of control was measured by presenting the respondents with two statements; (a) "The things that happen in your life are of your own doing", and (b) "You don't have much control over what happens in life, or in the direction your life is headed". Locus of control was treated as a dummy variable based on whether the respondent agreed with statement (a) or statement (b). This way of measuring locus of control is based on Rotter's (1966) Internal-External scale.

### 4.3.2. In-Field Lab Experiment

A selection of the A-list members were chosen to take part in an in-field lab experiment. A memory game was used to measure confidence, willingness to compete and willingness to take risk. In the first round, participants were shown ten pictures of items for twenty seconds. They were then asked which items they remembered. Before they redid the exercise, they were asked questions to reveal their predispositions.

The first questions were designed to reveal confidence. Participants were asked ”Approximately, how many items do you think other villagers typically managed to remember?” Other villagers refer to people from a similar village. Secondly, they were asked how many items they thought they would remember next round. This gave insight into how the participants ranked their own abilities compared to others, and was used to measure of over- or under-confidence. Answers were measured on a scale from zero to 10, representing the number of items remembered.

Another question was asked before the second round, to reveal willingness to compete. All participants were given a choice between a fixed rate or a competition rate. Fixed rate was 1000 Ush for each item they remembered. Competition rate was 2000 Ush for each right answer, but only if they remember at least as many items as the average in another village. A dummy variable was used.

After the second round, they were asked a third question, considering their willingness to take risk. The participants were presented with the statement: “I am willing to take risks, in general”, and asked how much they agreed. A scale from zero to 10 was used. Zero represented “No, I am completely unwilling to take risks, in general”, and 10 “Yes, I am completely willing to take risks, in general”. After the completion of the experiment, the results were revealed and the participants received their winnings.

## 4.4. Analysis

We measured the intention to treat (ITT) in our analysis. This means that we compared those initially allocated to the treatment group to those initially allocated to the control group, regardless of actual compliance (Deaton, 2010). The outcome of interest (i.e. locus of control,

happiness, trust, willingness to compete, confidence and willingness to take risk) is denoted by $Y_{i0}$ for the control group and $Y_{i1}$ for the treatment group, where *i* represents the different members of the population under study. We investigate whether $Y_i$ is affected by the treatment and are interested in the distribution over *i* of the effects of the treatment. Treatment status is denoted by $T_i$, where $T_i$ = 1 for the treatment group and $T_i$ = 0 for the control group. We only observe $Y_{i0}$ or $Y_{i1}$ as *i* is randomly assigned to either treatment or control. We are particularly interested in the difference in means between the treatment group and the control group, $\bar{Y}_1$ - $\bar{Y}_0$, as this is an estimate of the average treatment effect (Deaton, 2010).

We conducted linear regressions to estimate the treatment effects on the outcome variables. The randomization allowed for a simple estimation strategy (Ksoll et al., 2013). We considered restricted regressions as well as unrestricted regressions where covariates were included.

In its simplest form we estimated the equation

$$\text{(a) } Y_i = \alpha + \beta_1 T_i + \varepsilon_i$$

using ordinary least square (OLS) estimators. Standard errors were clustered at the location level. $\varepsilon$ denotes the error term.

We also performed multiple linear regressions controlling for variables from baseline, which were expected to be of explanatory importance. This was done to reduce standard errors of the estimates and improve the analysis (Duflo et al., 2007). To avoid data mining, the covariates were specified in a pre-analysis plan. The covariates included were disability status, gender, age, wealth index, knowledge index, marital status and a school fees index. All covariates were generated as dummy variables. Disability status indicates if respondents are classified as disabled or not. In the regressions, this is denoted by *pwd*, and takes the value one the person is disabled. The covariate gender is represented as *male* and holds the value one for male and zero for female. To generate the covariate for age, participants were sorted into over and under median age. The covariate is denoted by *age_high* in regressions. Wealth is an index including four values: whether the number of school fees paid and meals per day is over median, if money has been spent on clothes, and if they own a bicycle. These values were

then averaged and given the value one if over median. The index is presented as *wealth_high*. The covariate knowledge is based on literacy and three financial literacy questions. Values were calculated in the same way as wealth, over and under median. Marital status distinguishes between married and unmarried. It is displayed as *married*. The covariate *schoolfees_co* holds the value one if school fees have not been paid for all children in household.

The following regression was conducted when covariates were included:

$$\text{(b) } Y_i = \alpha + \beta_1 T_i + \beta_2 X_i + \varepsilon_i$$

Besides measuring the global impacts of the treatment, we conducted subgroup analysis to reveal how the treatment affects various subgroups. Subgroup analysis is an analytic approach for examining heterogeneity of treatment effect (HTE) (Varadhan & Seeger, 2013). HTE is "the nonrandom, explainable variability in the direction and magnitude of treatment effects for individuals within a population" (Varadhan & Seeger, 2013, p.35). The subgroups for which we studied heterogeneous effects were disability status and gender as we have a particular focus on PWDs and gender in our thesis. These subgroups are denoted by $W_i$. We examined the heterogeneous effects by including an interaction term in the regression:

$$\text{(c) } Y_i = \alpha + \beta_1 T_i + \beta_2 X_i + \beta_3 W_i * T_i + \varepsilon_i$$

Separate regressions were conducted for each of the interaction effects.

## 4.5. Treatment-Control Balance

To assure that the randomization was successful, we examined the treatment-control balance. A successful randomization entails that characteristics are identical.

Table 1: Baseline Characteristics and Balance Check

| **Baseline Characteristics and Balance Check**<br>**Survey sample** | | | |
|---|---|---|---|
| | Mean<br>Control Group | Mean<br>Treatment Group | Difference<br>T-C |
| pwd | 0.596 | 0.586 | -0.001 |
| | | | *(0.048)* |
| male | 0.535 | 0.439 | -0.095** |
| | | | *(0.048)* |
| age_high | 0.504 | 0.495 | -0.009 |
| | | | *(0.049)* |
| knowledge_high | 0.278 | 0.222 | -0.056 |
| | | | *(0.042)* |
| wealth_high | 0.174 | 0.136 | -0.038 |
| | | | *(0.035)* |
| married | 0.757 | 0.748 | -0.009 |
| | | | *(0.042)* |
| schoolfees_co | 0.457 | 0.409 | -0.047 |
| | | | *(0.048)* |
| *Number of observations: 428*<br>**** p<0.01; ** p<0.05; * p<0.1* | | | |

The means for the control and treatment group are similar for all background characteristics. The only exception is gender, where the control group has a higher proportion of males. This led us to conclude that the randomization was successful for the survey sample. Any treatment effects found in the analysis can be attributed to the intervention.

Table 2: Baseline Characteristics and Balance Check

| **Baseline Characteristics and Balance Check**<br>**Experiment sample** | | | |
|---|---|---|---|
| | Mean<br>Control Group | Mean<br>Treatment Group | Difference<br>T-C |
| pwd | 0.524 | 0.478 | -0.046 |
| | | | *(0.154)* |
| male | 0.619 | 0.478 | -0.141 |
| | | | *(0.152)* |
| age_high | 0.857 | 0.478 | -0.379*** |
| | | | *(0.134)* |
| knowledge_high | 0.238 | 0.261 | -0.023 |
| | | | *(0.134)* |
| wealth_high | 0.095 | 0.087 | -0.008 |
| | | | *(0.089)* |
| married | 0.810 | 0.826 | -0.017 |
| | | | *(0.119)* |
| schoolfees_co | 0.476 | 0.348 | -0.128 |
| | | | *(0.151)* |
| *Number of observations: 44*<br>**** p<0.01; ** p<0.05; * p<0.1* | | | |

Also for the experiment sample, the randomization was successful. Age is the only background characteristic where there was a significant difference between the groups. There was a significantly higher proportion of persons above the median age in the control group. However, we do not expect the difference in age to be a concern, and assume any treatment effects to be a result of the intervention itself.

## 4.6. Discussion of Methods

### 4.6.1. Internal and External Validity

Internal validity is whether we can conclude that the measured impacts are caused by the intervention (Duflo et al., 2007). The internal validity of randomized controlled trials is good, as it requires few assumptions to attain unbiased estimates of treatment effects (West et al., 2008). For a given sample size, RCT generally has better statistical power compared to other designs (West et al., 2008). Although, some threats to the causal inferences should be acknowledged.

Attrition is a potential threat to the internal validity and refers to the failure to collect outcome data from individuals who were part of the original sample (Duflo et al., 2007). Since we were able to reach 96 percent of the A-list sample, we do not consider attrition to be a threat. Seventy six percent of the experiment sample was reached. This can also be considered reasonable, even though the number of observations in this sample is limited. Missing data only occurs in A-list, in very few instances, and effort to address these has not been made.

External validity is the extent to which the results from the study can be generalized to other similar contexts (Duflo et al., 2007). The fact that the evaluation is conducted on a specific sample can limit the ability to generalize findings. Since we purposely included many PWDs in our sample, and as there was self-selection into the groups, the sample may not be representative for the rural population of Uganda. We can not generalize our results to all parts of Uganda (i.e. urban areas), Africa or the World. However, due to the broad nature of our sample we believe that similar short-term results will be found if the program is implemented in other rural areas, with focus on disabled in the sub-Saharan region.

### 4.6.2. Data collection

The choice of method and design requires serious consideration, as there are advantages and disadvantages with all approaches. Using a survey gives researchers the opportunity to reach large groups of people with cost and time restrictions. A large sample also provides good statistical significance in findings, improving the external validity of the study[6]. On the contrary, surveys are often criticized for being too general and inflexible. They leave little room for follow-up questions and complex answers. For example, when participants were asked about trust in other villagers, the research assistants did not have the opportunity to ask why someone might not trust their neighbours. The present study, however, purposely use general and fixed questions to be able to reach a large sample within budget restrictions.

Using in-field lab experiments enables control over surroundings and variables. This helps to ensure internal validity. The participants' actual behavior can be observed, instead of their self-reported preferences. In our case, using an in-field lab experiment let research assistants observe, for example, participants actual willingness to compete. Instead of asking how they rate themselves on a scale, they had to make a choice where the monetary reward depended

[6] This section on data collection is largely based on Ghauri & Grønhaug, 2010

on the choice. On the other hand, lab experiments have been criticized for placing the participants in artificial situations, which may negatively affect the external validity.

A weakness for most research methods, including surveys and in-field lab experiments, is that they are exposed to human error. Findings and results are often unprotected from bias and recording mistakes. Experienced, local research assistants were recruited to avoid this as much as possible. In addition, our findings are based on simple scales and dummy variables, leaving little room for misinterpretation.

Research assistants collected the data by asking participants the questions in person. This may influence the answers given and thereby our results. The lack of anonymity can influence the participants' answers. They might adjust their answers to keep from offending others or feeling exposed. This adjustment may limit honesty. In addition, the interviewer can influence how the questions are understood by tone of voice and phrasing. Their appearance and even gender can influence the participants. However, it was necessary to ask the questions in person to reach our sample as many are uneducated and illiterate.

### 4.6.3. Measurements

Many of our variables are measured using one item only, potentially threatening the validity of our analysis. Most are however based on established scales where the validity and reliability have been tested and recognized by researchers. Abdel-Khalek (2006) also found that for measuring happiness, using several or one item is expected to give similar results. Due to the number of variables and scope of the impact study, it was advantageous to use single items to keep within time and budget constraints.

# 5. Findings

## 5.1. Locus of Control

Locus of control is measured by a dummy variable. The participants were presented with two statements; (a) "The things that happen in your life are of your own doing", and (b) "You don't have much control over what happens in life, or in the direction your life is headed". Value 1 represents agreement with statement (a). The findings are presented in the table below.

Table 3: Treatment effect in Locus of Control

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | locuscontrol | locuscontrol | locuscontrol | locuscontrol |
| treatment | 0.090 | 0.100 | 0.143** | 0.021 |
| | (0.070) | (0.070) | (0.072) | (0.083) |
| treatment*nonpwd | | | -0.104 | |
| | | | (0.083) | |
| treatment*male | | | | 0.167** |
| | | | | (0.073) |
| pwd | | 0.040 | -0.009 | 0.043 |
| | | (0.045) | (0.060) | (0.045) |
| male | | 0.040 | 0.041 | -0.035 |
| | | (0.045) | (0.044) | (0.051) |
| age_high | | 0.019 | 0.018 | 0.015 |
| | | (0.050) | (0.050) | (0.050) |
| wealth_high | | 0.053 | 0.052 | 0.066 |
| | | (0.065) | (0.065) | (0.063) |
| knowledge_high | | 0.026 | 0.026 | 0.027 |
| | | (0.064) | (0.064) | (0.063) |
| married | | 0.032 | 0.035 | 0.023 |
| | | (0.054) | (0.054) | (0.055) |
| schoolfees_co | | 0.061 | 0.060 | 0.055 |
| | | (0.049) | (0.050) | (0.049) |
| treatment+interaction | | | 0.039 | 0.188** |
| | | | (0.093) | (0.072) |
| _cons | 0.504*** | 0.382*** | 0.409*** | 0.428*** |
| | (0.047) | (0.081) | (0.088) | (0.086) |
| *N* | 425 | 425 | 425 | 425 |

*All columns in this table report locus of control. The variable is regressed on treatment using OLS estimates. Covariates are controlled for in column (2), (3) and (4). Column (3) is testing the interaction effect between treatment and disability status (non-pwd), as well as a combined interaction effect. Column (4) does the same for the effect of gender on the results. Standard errors are clustered at location level. Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01.*

The regressions in table 3 report locus of control. Column (1) and (2) show no significant changes in participants' locus of control, though indicating a positive treatment effect. When adding interaction effects in column (3) and (4), significant changes are observed. Locus of control has a significant positive treatment effect for persons with disabilities and males.

## 5.2. Happiness

To measure happiness we asked the participants two different questions. First about their general happiness: "How happy are you with your life in general?" Then about their economic situation: "How happy are you with your economic situation?" The answers range from "very unhappy" (1) to "very happy" (5). The results are presented in the table below.

Table 4: Treatment effect in General Happiness

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | happygen | happygen | happygen | happygen |
| treatment | -0.135 | -0.154 | -0.069 | -0.163 |
| | (0.179) | (0.180) | (0.217) | (0.201) |
| treatment*nonpwd | | | -0.207 | |
| | | | (0.245) | |
| treatment*male | | | | 0.018 |
| | | | | (0.228) |
| pwd | | -0.088 | -0.184 | -0.088 |
| | | (0.119) | (0.147) | (0.120) |
| male | | -0.036 | -0.033 | -0.044 |
| | | (0.113) | (0.114) | (0.153) |
| age_high | | -0.240** | -0.241** | -0.240** |
| | | (0.109) | (0.110) | (0.111) |
| knowledge_high | | -0.048 | -0.049 | -0.048 |
| | | (0.133) | (0.132) | (0.133) |
| wealth_high | | -0.007 | -0.009 | -0.006 |
| | | (0.183) | (0.184) | (0.189) |
| married | | 0.198 | 0.204 | 0.197 |
| | | (0.138) | (0.137) | (0.139) |
| schoolfees_co | | -0.236* | -0.237* | -0.237* |
| | | (0.135) | (0.136) | (0.136) |
| treatment+interaction | | | -0.276 | -0.145 |
| | | | (0.214) | (0.225) |
| _cons | 4.039*** | 4.205*** | 4.257*** | 4.210*** |
| | (0.113) | (0.154) | (0.161) | (0.161) |
| *N* | 428 | 428 | 428 | 428 |

*All columns in this table represent general happiness. The variable is regressed on treatment using OLS estimates. Covariates are controlled for in column (2), (3) and (4). Column (3) is testing the interaction effect between treatment and disability status (non-pwd), as well as a combined interaction effect. Column (4) does the same for the effect of*

*gender on the results. Standard errors are clustered at location level. Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01.*

All columns in table 4 show general happiness. There are no significant results.

Table 5: Treatment effect in Economic Happiness

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | happyeco | happyeco | happyeco | happyeco |
| treatment | 0.129 | 0.135 | 0.170 | 0.321 |
| | (0.168) | (0.174) | (0.175) | (0.209) |
| treatment*nonpwd | | | -0.085 | |
| | | | (0.236) | |
| treatment*male | | | | -0.392* |
| | | | | (0.227) |
| pwd | | -0.037 | -0.076 | -0.044 |
| | | (0.123) | (0.167) | (0.123) |
| male | | -0.055 | -0.054 | 0.121 |
| | | (0.124) | (0.125) | (0.170) |
| age_high | | -0.203* | -0.204* | -0.196* |
| | | (0.104) | (0.104) | (0.104) |
| knowledge_high | | 0.157 | 0.156 | 0.155 |
| | | (0.143) | (0.144) | (0.145) |
| wealth_high | | 0.133 | 0.132 | 0.104 |
| | | (0.147) | (0.148) | (0.148) |
| married | | 0.101 | 0.104 | 0.122 |
| | | (0.143) | (0.143) | (0.143) |
| schoolfees_co | | -0.034 | -0.034 | -0.021 |
| | | (0.125) | (0.126) | (0.125) |
| treatment+interaction | | | 0.084 | -0.071 |
| | | | (0.250) | (0.207) |
| _cons | 3.361*** | 3.387*** | 3.408*** | 3.278*** |
| | (0.107) | (0.206) | (0.222) | (0.226) |
| *N* | 428 | 428 | 428 | 428 |

*All columns in this table represent economic happiness. The variable is regressed on treatment using OLS estimates. Covariates are controlled for in column (2), (3) and (4). Column (3) is testing the interaction effect between treatment and disability status (non-pwd), as well as a combined interaction effect. Column (4) does the same for the effect of gender on the results. Standard errors are clustered at location level. Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01.*

Table 5 presents economic happiness. The regressions show no significant treatment effect.

## 5.3. Trust

To measure trust we asked the participants "How much do you trust people in your village?" The answers ranged from "Not at all" (1) to "I trust them a lot" (4). The results are presented in the table below.

Table 6: Treatment effect in Trust

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | trust | trust | trust | trust |
| treatment | -0.009 | -0.007 | -0.159 | 0.162 |
| | (0.087) | (0.088) | (0.111) | (0.124) |
| treatment*nonpwd | | | 0.370** | |
| | | | (0.147) | |
| treatment*male | | | | -0.358** |
| | | | | (0.141) |
| pwd | | -0.042 | 0.131 | -0.049 |
| | | (0.073) | (0.103) | (0.072) |
| male | | 0.099 | 0.093 | 0.260** |
| | | (0.087) | (0.084) | (0.107) |
| age_high | | 0.056 | 0.059 | 0.062 |
| | | (0.071) | (0.070) | (0.069) |
| knowledge_high | | -0.162 | -0.159 | -0.164 |
| | | (0.107) | (0.105) | (0.106) |
| wealth_high | | -0.007 | -0.003 | -0.034 |
| | | (0.120) | (0.121) | (0.117) |
| married | | 0.125 | 0.114 | 0.144 |
| | | (0.086) | (0.087) | (0.088) |
| schoolfees_co | | 0.012 | 0.012 | 0.022 |
| | | (0.076) | (0.076) | (0.075) |
| treatment+interaction | | | 0.211* | -0.195** |
| | | | (0.118) | (0.098) |
| _cons | 3.493*** | 3.384*** | 3.289*** | 3.286*** |
| | (0.058) | (0.113) | (0.118) | (0.130) |
| *N* | 425 | 425 | 425 | 425 |

*All columns in this table report trust in fellow villagers, on a scale from one to four. The variable is regressed on treatment using OLS estimates. Covariates are controlled for in column (2), (3) and (4). Column (3) is testing the interaction effect between treatment and disability status (non-pwd), as well as a combined interaction effect. Column (4) does the same for the effect of gender on the results. Standard errors are clustered at location level. Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01.*

The results in table 6 present the treatment effect on trust. Column (1) and (2) show no significant effect of treatment for trust. Column (3) and (4), with the inclusion of interaction effects, show a negative effect for males and PWDs (significant only for males), while the

effect is positive for non-disabled and females (significant for non-disabled). In sum, the evidence of the effect of WCM on trust is mixed.

## 5.4. Willingness to Compete

A dummy variable was used to identify participants' willingness to compete. The dummy has the value 1 if the participant chose the competition rate in the memory game, and 0 if the participant chose fixed rate. The results are presented in the table below.

Table 7: Treatment effect in Willingness to Compete

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | compete | compete | compete | compete |
| treatment | 0.211 | 0.096 | 0.244** | -0.048 |
| | (0.162) | (0.117) | (0.082) | (0.201) |
| treatment*nonpwd | | | -0.306* | |
| | | | (0.145) | |
| treatment*male | | | | 0.265 |
| | | | | (0.285) |
| pwd | | -0.212* | -0.367*** | -0.203* |
| | | (0.096) | (0.107) | (0.099) |
| male | | -0.017 | -0.010 | -0.162 |
| | | (0.181) | (0.173) | (0.299) |
| age_high | | -0.326** | -0.336** | -0.312** |
| | | (0.107) | (0.106) | (0.104) |
| knowledge_high | | 0.318** | 0.299** | 0.307** |
| | | (0.106) | (0.111) | (0.106) |
| wealth_high | | 0.011 | -0.039 | -0.045 |
| | | (0.344) | (0.378) | (0.325) |
| married | | -0.063 | -0.034 | -0.041 |
| | | (0.159) | (0.160) | (0.180) |
| schoolfees_co | | 0.202 | 0.191 | 0.194 |
| | | (0.138) | (0.136) | (0.130) |
| treatment+interaction | | | -0.062 | 0.217 |
| | | | (0.171) | (0.163) |
| _cons | 0.571*** | 0.850*** | 0.927*** | 0.918*** |
| | (0.131) | (0.217) | (0.204) | (0.231) |
| *N* | 44 | 44 | 44 | 44 |

*All columns in this table report willingness to compete. The variable is regressed on treatment using OLS estimates. Covariates are controlled for in column (2), (3) and (4). Column (3) is testing the interaction effect between treatment and disability status (non-pwd), as well as a combined interaction effect. Column (4) does the same for the effect of gender on the results. Standard errors are clustered at location level. Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01.*

Table 7 presents participants' willingness to compete. Column (1) and (2) show no significant treatment effect. Column (3) shows a significant positive treatment effect for persons with disabilities. There is no significant effect for non-disabled. Column (4) shows no significant difference in treatment effect for males and females in willingness to compete.

## 5.5. Confidence

There are two different measures of confidence from the experiment. From these we can derive three different measures; confidence in self, confidence in others and overconfidence (better-than-average). Firstly, the participants were asked how they thought they would perform in the memory game, measured from 0 to 10. Second, they were asked how they think their fellow villagers had performed on the same test. Overconfidence is measured by finding how much more they thought they would remember than other villagers. The tables are presented below.

Table 8: Treatment effect in Self-confidence

| | (1) confidenceself | (2) confidenceself | (3) confidenceself | (4) confidenceself |
|---|---|---|---|---|
| treatment | -0.037 | -0.161 | 0.646 | -0.704 |
| | (0.837) | (0.765) | (0.779) | (1.293) |
| treatment*nonpwd | | | -1.669* | |
| | | | (0.857) | |
| treatment*male | | | | 1.006 |
| | | | | (1.420) |
| pwd | | -0.504 | -1.352 | -0.471 |
| | | (0.576) | (0.851) | (0.512) |
| male | | -0.673 | -0.636 | -1.226 |
| | | (0.750) | (0.715) | (0.957) |
| age_high | | -0.125 | -0.180 | -0.072 |
| | | (0.685) | (0.698) | (0.672) |
| wealth_high | | 2.542*** | 2.268*** | 2.331*** |
| | | (0.640) | (0.637) | (0.695) |
| knowledge_high | | 1.277 | 1.173 | 1.235 |
| | | (0.756) | (0.737) | (0.693) |
| married | | 1.199 | 1.357 | 1.281 |
| | | (1.050) | (0.970) | (1.046) |
| schoolfees_co | | 0.539 | 0.481 | 0.508 |
| | | (0.710) | (0.741) | (0.731) |
| treatment+interaction | | | -1.024 | 0.302 |
| | | | (1.055) | (0.737) |
| _cons | 7.429*** | 6.442*** | 6.861*** | 6.700*** |
| | (0.532) | (1.207) | (1.191) | (1.375) |
| *N* | 44 | 44 | 44 | 44 |

*All columns in this table report the participants' self-confidence. The variable is regressed on treatment using OLS estimates. Covariates are controlled for in column (2), (3) and (4). Column (3) is testing the interaction effect between treatment and disability status (non-pwd), as well as a combined interaction effect. Column (4) does the same for the effect of gender on the results. Standard errors are clustered at location level. Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01.*

Table 8 shows results for self-confidence. There are no statistically significant treatment effects. Column (3) shows suggestive evidence on the interaction effect, indicating a difference between PWDs and non-disabled. However, as there are no significant treatment effects we can not conclude that the intervention has effect on self-confidence.

Table 9: Treatment effect in Confidence Others

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | confidenceothers | confidenceothers | confidenceothers | confidenceothers |
| treatment | 2.000*** | 2.006** | 2.458** | 2.221** |
| | (0.581) | (0.697) | (0.984) | (0.694) |
| treatmentnonpwd | | | -0.935 | |
| | | | (1.079) | |
| treatmentmale | | | | -0.397 |
| | | | | (1.193) |
| pwd | | 0.553 | 0.077 | 0.540 |
| | | (0.548) | (0.302) | (0.560) |
| male | | -0.502 | -0.482 | -0.284 |
| | | (0.602) | (0.605) | (0.871) |
| age_high | | -0.019 | -0.050 | -0.040 |
| | | (0.637) | (0.553) | (0.714) |
| wealth_high | | -0.617 | -0.770 | -0.533 |
| | | (1.351) | (1.423) | (1.418) |
| knowledge_high | | 0.287 | 0.229 | 0.304 |
| | | (0.533) | (0.577) | (0.538) |
| married | | -1.477 | -1.389 | -1.510 |
| | | (1.190) | (1.293) | (1.206) |
| schoolfees_co | | 0.359 | 0.327 | 0.371 |
| | | (0.485) | (0.485) | (0.512) |
| treatment+interaction | | | 1.523 | 1.824 |
| | | | (0.712) | (1.085) |
| _cons | 4.000*** | 5.053*** | 5.288*** | 4.951*** |
| | (0.259) | (1.136) | (0.901) | (1.121) |
| *N* | 44 | 44 | 44 | 44 |

*All columns in this table report the participants' confidence in others. The variable is regressed on treatment using OLS estimates. Covariates are controlled for in column (2), (3) and (4). Column (3) is testing the interaction effect between treatment and disability status (non-pwd), as well as a combined interaction effect. Column (4) does the same for the effect of gender on the results. Standard errors are clustered at location level. Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01.*

Table 9 presents confidence in others. The results in column (2) show a significant treatment effect on the confidence participants have in other villagers. Column (3) and (4) show no significant differences between the genders and disability status. However, there is indication of stronger treatment effect for PWDs and females.

Table 10: Treatment effect in Overconfidence (better-than-average)

| | (1) DiffConfidence | (2) DiffConfidence | (3) DiffConfidence | (4) DiffConfidence |
|---|---|---|---|---|
| treatment | -2.037 | -2.167 | -1.812 | -2.925** |
| | (1.218) | (1.277) | (1.357) | (1.262) |
| treatment*nonpwd | | | -0.734 | |
| | | | (0.959) | |
| treatment*male | | | | 1.403 |
| | | | | (0.881) |
| pwd | | -1.056 | -1.430 | -1.011* |
| | | (0.642) | (1.010) | (0.504) |
| male | | -0.170 | -0.154 | -0.942 |
| | | (0.967) | (0.953) | (0.902) |
| age_high | | -0.106 | -0.130 | -0.032 |
| | | (0.818) | (0.854) | (0.816) |
| wealth_high | | 3.159* | 3.038* | 2.864 |
| | | (1.615) | (1.649) | (1.574) |
| knowledge_high | | 0.990 | 0.944 | 0.931 |
| | | (1.014) | (1.018) | (0.942) |
| married | | 2.676 | 2.746 | 2.791 |
| | | (2.030) | (2.065) | (2.027) |
| schoolfees_co | | 0.180 | 0.155 | 0.137 |
| | | (0.786) | (0.796) | (0.775) |
| treatment+interaction | | | -2.546 | -1.522 |
| | | | (1.455) | (1.424) |
| _cons | 3.429*** | 1.389 | 1.573 | 1.749 |
| | (0.432) | (1.796) | (1.774) | (1.943) |
| *N* | 44 | 44 | 44 | 44 |

*All columns in this table report the participants' overconfidence. The variable is regressed on treatment using OLS estimates. Covariates are controlled for in column (2), (3) and (4). Column (3) is testing the interaction effect between treatment and disability status (non-pwd), as well as a combined interaction effect. Column (4) does the same for the effect of gender on the results. Standard errors are clustered at location level. Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01.*

Table 10 presents results for overconfidence. There is no treatment effect for the sample as a whole. There is a negative treatment effect when interactions are included in regression (4), significant only for females. This shows that females' overconfidence has declined.

## 5.6. Willingness to Take Risk

To measure the participants willingness to take risk participants were asked to respond to the statement "I am willing to take risks, in general" on a scale ranging from 0 to 10. Zero reflects "No, I am completely unwilling to take risk, in general", and ten "Yes, I am completely willing to take risks, in general". The results are presented in the table below.

Table 11: Treatment effect in Willingness to take risk

| | (1) risk | (2) risk | (3) risk | (4) risk |
|---|---|---|---|---|
| treatment | 0.319 | 0.475 | 1.141 | -0.193 |
| | (0.871) | (0.798) | (0.656) | (1.705) |
| treatment*nonpwd | | | -1.378 | |
| | | | (1.596) | |
| treatment*male | | | | 1.237 |
| | | | | (2.015) |
| pwd | | -0.187 | -0.888 | -0.147 |
| | | (0.826) | (0.752) | (0.840) |
| male | | -1.114 | -1.083 | -1.794 |
| | | (1.001) | (0.987) | (1.863) |
| age_high | | 0.828 | 0.782 | 0.893 |
| | | (0.933) | (0.859) | (0.927) |
| knowledge_high | | 2.172** | 2.086** | 2.120** |
| | | (0.750) | (0.699) | (0.782) |
| wealth_high | | 0.355 | 0.129 | 0.095 |
| | | (1.378) | (1.655) | (1.368) |
| married | | 1.455 | 1.585 | 1.556 |
| | | (0.902) | (0.871) | (1.039) |
| schoolfees_co | | 0.613 | 0.565 | 0.575 |
| | | (0.862) | (0.922) | (0.928) |
| treatment+interaction | | | -0.237 | 1.043 |
| | | | (1.509) | (0.686) |
| _cons | 6.333*** | 4.391** | 4.737*** | 4.708** |
| | (0.581) | (1.571) | (1.456) | (1.753) |
| *N* | 44 | 44 | 44 | 44 |

*All columns in this table report willingness to take risk. The variable is regressed on treatment using OLS estimates. Covariates are controlled for in column (2), (3) and (4). Column (3) is testing the interaction effect between treatment and disability status (non-pwd), as well as a combined interaction effect. Column (4) does the same for the effect of gender on the results. Standard errors are clustered at location level. Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01.*

Table 11 show participants' willingness to take risk. There is no significant treatment effect. Column (3) and (4) indicate a small increase in willingness to take risk for males and PWDs, though not statistically significant.

## 5.7. Discussion of Results

### 5.7.1. Locus of Control

Locus of control, or the feeling of control over what happens in life, is important for empowerment. Our findings suggest a positive effect of *We Can Manage* on the participants' locus of control. The result is not significant for the population as a whole, but looking at persons with and without disabilities separately, we find that persons with disabilities experience a significant increase in locus of control. This indicates an empowerment of this vulnerable group. The finding is in line with our expectations that participation in VSLAs contribute to control over finances and one's general feeling of control. Empowering people, and especially disabled, in rural areas is the main objective of *We Can Manage*. PWDs believing in a causal relationship between own behavior and outcome can lead them to take action to improve their situation, for example by taking a more active role in the community. This can lead to an improvement of their own well-being and social empowerment, as well as contribute to the community.

The analysis reveals that *We Can Manage* leads to increased locus of control for PWDs and males. Locus of control is an important entrepreneurial trait, and has been found to be positively associated with the desire to become an entrepreneur (Cromie, 2000; Bonnett & Furnham, 1991). The belief that one can influence the success of a potential business is seen as a prerequisite for entrepreneurs. Persons with locus of control are generally action oriented, which is needed to establish a business (Cromie, 2000). A positive treatment effect can therefore stimulate entrepreneurial activity. In addition, *We Can Manage* facilitates accumulation of funds that can enable potential entrepreneurs to make the necessary investments. Since WCM has a positive treatment effect on PWDs and males, it may also positively affect their entrepreneurial behaviour. World Health Organization and World Bank (2011) recommend promoting self-employment aimed at PWDs to combat poverty in developing countries. Improving PWDs' locus of control, through VSLAs and thereby their chances of self-employment can contribute to fighting poverty.

### 5.7.2. Happiness

Happiness and well-being is the cornerstone of social empowerment. Happiness is measured to examine how *We Can Manage* affects well-being and quality of life of the participants. In a

way, economic empowerment and encouragement to save is used as a tool to improve happiness. However, we found no statistically significant treatment effects in our data, for general or economic happiness. This fits with the Easterlin paradox that economic development not necessarily will lead to an increase in happiness (Easterlin, 1974). Newer research argue that this not necessarily needs to be the case. It remains to be seen whether WCM has long term effect on happiness. A possible explanation is that economic impacts of the program may take time to emerge.

Prior studies have shown that the effect of economic development on happiness is stronger at the lower end of the income scale. We do not see this trend, but hypothesize that this is because participants are already placed quite high on the happiness-scale, even without the implementation of the WCM project. This leaves little room for improvement and it is therefore not surprising that our results are limited.

### 5.7.3. Trust

Knowles (2010) found a tendency that members of savings and loan groups increase their trust in others through participation. Our findings do not show any significant treatment effect on trust for the population as a whole. This can be explained by the negative treatment effect for both PWDs and males. Males in the treatment group have significantly lower trust in their fellow villagers, than the control group. We can see the same tendencies for persons with disabilities. There is suggestive evidence that persons without disabilities have a positive treatment effect. This finding contrasts our expectations of increased trust for all subgroups as a result of the *We Can Manage* program. An influencing factor for these findings can be that our data is short-term, and we expect that in the long-term the results will be different.

Our study looks at how interpersonal trust, the trust that exists between people, is affected by the intervention. Persons with disabilities have a significantly lower treatment effect than non-disabled, but the overall treatment effect on PWDs is only suggestive. The difference in treatment effect may result from disabled initially being isolated but now coming together in groups. They could be exposed to discrimination in these groups which may lead them to be less trusting. WCM seeks in the long term to increase tolerance and respect for disabled and thereby mutual trust.

Males have a significant negative treatment effect, while females show a slight positive effect. Hence, treated males experience a lower level of trust due to the intervention. This finding contrasts theory and our expectations. They may not have been in a situation where they have to trust others when it comes to money before joining the VSLA group. A possible explanation for the difference in treatment effect is that females usually have less autonomy and have to be more trusting toward others (e.g. their husband) in their daily life than men. More research is needed to explain the difference between males and females.

### 5.7.4. Willingness to Compete

We looked at how WCM influences the participants' willingness to compete. If participants choose to become entrepreneurs, they are exposed to a competitive environment. In the analysis, we found that collectively the participants exhibit no significant change in their willingness to compete. However, when we look at PWDs separately there is a significant positive treatment effects. This can be connected to their vulnerable position in the community, making an intervention more effective for this group.

Berge, Bjorvatn, Pires and Tungodden (2015) argue that a higher willingness to compete correlates with competitive choices in the marketplace and entrepreneurial success. Following their argument, we infer that the treatment has a positive influence on PWDs and their entrepreneurial behavior. This group is often discriminated against and excluded from other income creating activities, and can through VSLAs be stimulated into becoming successful entrepreneurs. This can potentially improve their livelihood. Willingness to compete is especially important for necessity entrepreneurs as they are more dependent on their potential income. Success in the marketplace is therefore crucial.

Previous studies on willingness to compete find large gender differences. Males are generally more willing to compete (Gupta et al., 2013). However, as we study the impacts of WCM, our focus has been on whether there are gender differences in treatment effects when it comes to willingness to compete. We find no differences between males and females.

### 5.7.5. Confidence

This thesis examines if the implementation of *We Can Manage* increases the confidence for participants. We find that self-confidence stays unchanged, as there is no significant treatment effect.

There is a significant positive change in the confidence participants exhibit towards other villagers. This can result from participants interacting more with each other and becoming aware of the skills and abilities of their fellow villagers. Through WCM they are placed in a situation where they are familiarized with each other. They also observe that all group members are capable of paying back loans and working towards a common goal. This increases the belief they have in each other. We infer that through the VSLAs, other villagers are no longer perceived as strangers, but rather friends or potential business-partners. It is therefore natural that their confidence in each other will shift in a positive direction.

Overconfidence is commonly measured when studying confidence. This is the difference between what participants think others are capable of and how they think they will do themselves. There are no statistically significant findings for this variable for the whole group. However, the results imply that participants have experienced a decrease in overconfidence. This finding could be misunderstood by assuming that self-confidence has decreased. The decrease in overconfidence is caused by an increased belief in others, not a decrease in self-confidence. Overconfidence encourages entrepreneurial activity, one could thus expect lower entrepreneurial activity. Camerer and Lavallo (1999) argue that overconfidence can lead to an underestimation of other's ability. Reduced overconfidence by increased belief in others' abilities can contribute to a more realistic perception of one's competition.

WCM seems to affect both genders' self-confidence similarly. For confidence in others, and thereby overconfidence, there is a significant treatment effect for females. One can hypothesize that this change for females comes from the recognition of their fellow villagers' abilities. The VSLA becomes an arena where females interact with other villagers and observe their abilities and skills. Through participation, both leadership and financial skills are demonstrated. Females may not be as involved in a financial world as men, so their introduction through WCM can therefore have a more substantial impact on how they perceive others.

The findings do not coincide with our initial expectations, that VSLAs would increase confidence for PWDs. Though the intervention did not increase their self-confidence, it increased their confidence in others. As confidence is a major part of social empowerment (Rowlands, 1997; GSDRC, 2015), an increase in confidence in others can potentially have a large impact for the communities and the lives of participants.

### 5.7.6. Willingness to take Risk

We looked at how the participants' willingness to take risk was affected by the intervention. We find that VSLAs have little effect on willingness to take risk. Even when looking at PWDs separately there is no evident treatment effect. The same results are present when the sample is divided by gender.

The participants in WCM live in severe poverty. Even though an intervention might have a positive effect on their quality of life, it is not surprising that willingness to take risk remains unchanged. They are still dependent on keeping the money they earn, and can not afford to risk losing it. This does however not mean that group members will not become entrepreneurs. In their situation, it is most relevant to become necessity entrepreneurs and these entrepreneurs are not as dependent on being willing to take risk. They are forced into a situation where they have to take risk in order to make an income, but their monetary focus will keep them from taking high-risk decisions (Block et al., 2015). They are willing to accept a lower return on their investment in order to reduce risk since they are dependent on their income to survive.

### 5.7.7. A Broader Picture

Due to the explorative nature of this research, there are limited results. This does not mean however, that VSLAs can not have the desired effect. This thesis analyses data from the short-term follow-up study and it is important to keep in mind that things may look different in the long term.

All the variables of social empowerment we have looked at in this thesis, entrepreneurial and not, are interconnected. One example is willingness to compete and locus of control moving in the same direction. These traits increase significantly for PWDs and there is a natural

connection between them. When people feel more in control they are more willing to compete as they are the influencing power on the result of the competition. When participants feel they are in control they become more willing to partake, given that they are confident in their ability to perform.

Locus of control is related to the confidence participants show in other villagers. Both increase significantly for PWDs. More confidence in others may lead to more cooperation towards a common goal which can make participants feel less threatened by others. When they have more confidence in others, they may feel that others will not discriminate or undermine their feeling of control, and that they are the main influence over their lives.

In our sample, the participants are more willing to compete after being members of a VSLA, even though their confidence in other villagers has increased. In other words, they think that others will perform better in a competition, but they are still willing to compete against them. This is a more puzzling finding, but still shows positive aspects of the treatment effect.

Confidence and trust is also related. There are no significant findings for trust in this study, but there are significant treatment effects for confidence in others. It is reasonable to believe that as participants' confidence in others increase, it will positively impact their trust over time. This finding gives hope for the long-term data collection and future research.

# 6. Conclusion

This thesis has examined the impact of the VSLA implementation project *We Can Manage*, in rural Uganda. Specifically, we have investigated the impact on social empowerment and entrepreneurial traits; confidence, trust and happiness, locus of control, willingness to compete and willingness to take risk.

We found that WCM had a positive effect on how PWDs perceive others' abilities. There is a significant increase in their confidence in other villagers. VSLA members interact weekly, and they become aware of each other's abilities. This way, other villagers are no longer strangers discriminating against them, but rather friends and potential business-partners. For the two other social empowerment variables, trust and happiness, we did not find significant treatment effects. We believe this is because participants, regardless of whether they are in treatment or control group, reported high levels of happiness and trust initially.

Entrepreneurial traits were studied due to their importance in creating a way out of poverty. We found that the disabled members in treatment groups show a significant increase in their willingness to compete. This relates to an increased likelihood of becoming an entrepreneur. There was little effect on participants' willingness to take risk. This is likely because they are still in a very vulnerable financial situation, and thus hesitating to take risk. Locus of control, however, shows significant results. Persons with disabilities show an increase in their feeling of influence over their lives. The same results are present for males. Participants' control over personal finances, combined with an accumulation of savings, give them a sense of control.

In addition to evaluating the impact of the *We Can Manage* program, the study sheds light on the effects of village savings and loan associations for persons with disabilities. It is, to our knowledge, the first project aimed at PWDs. The study therefore makes an important contribution to existing research on VSLAs.

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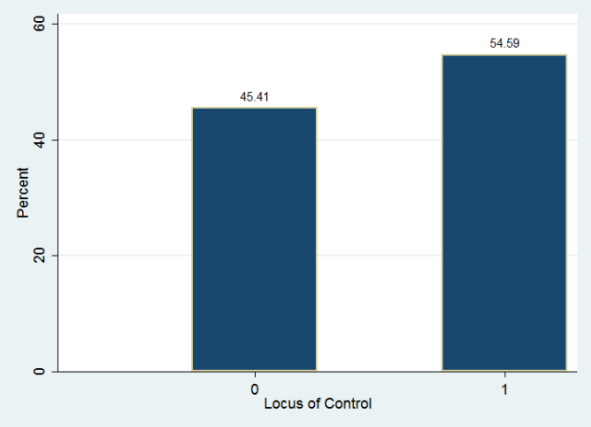
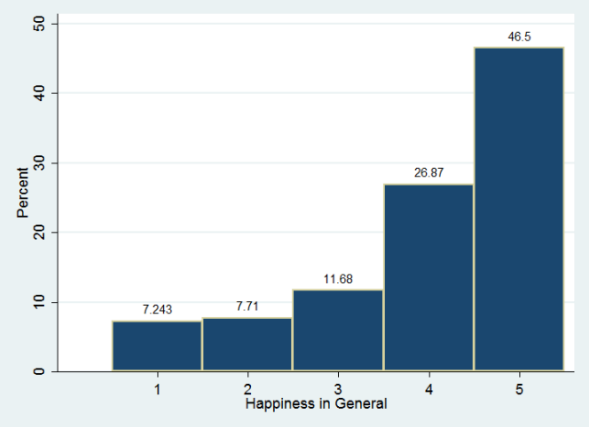
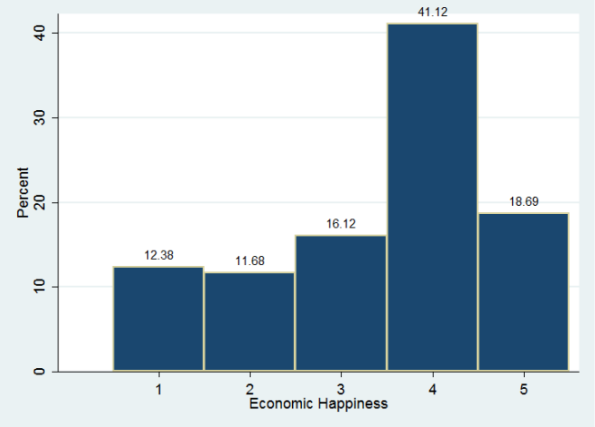
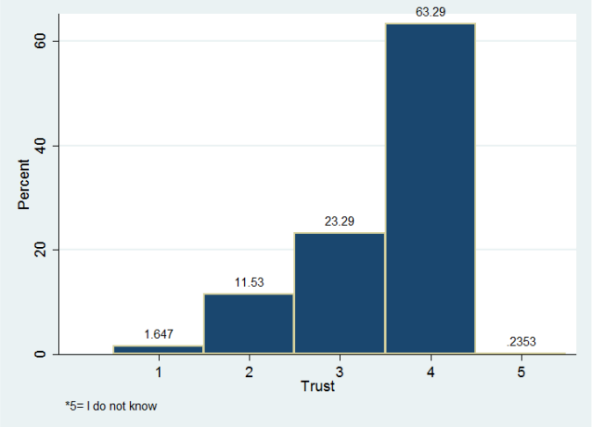
# 8. Appendix

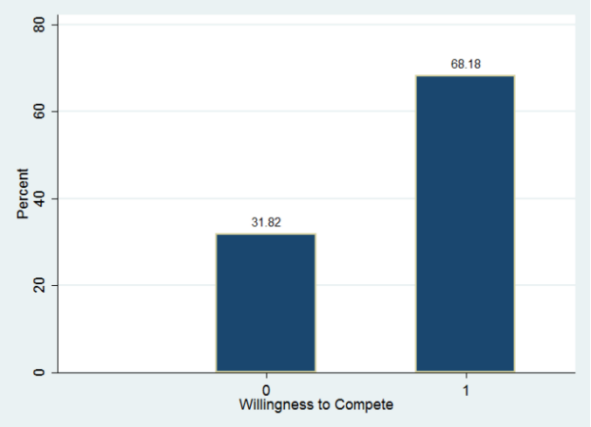
## 8.1. Distribution of answers in data

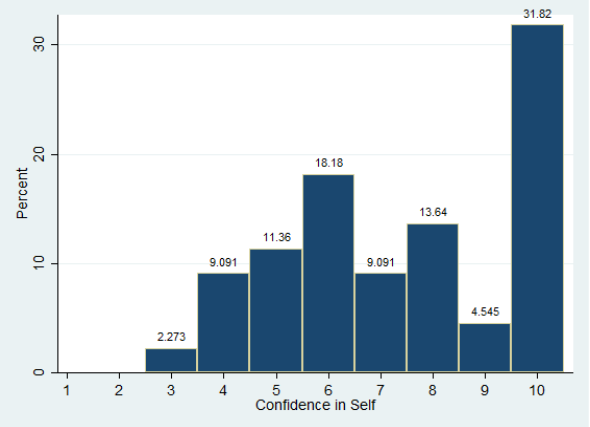


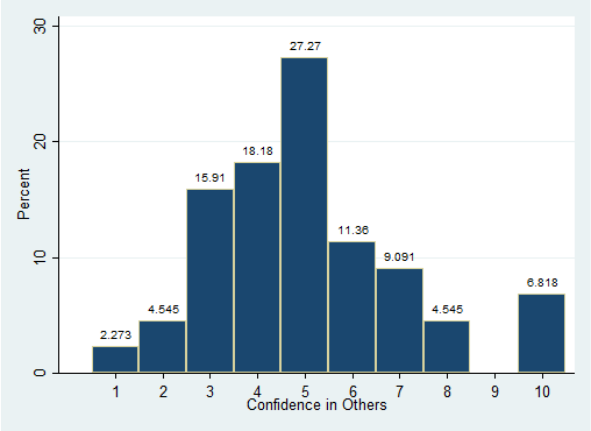

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30
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18.18
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6.818
1
2
3
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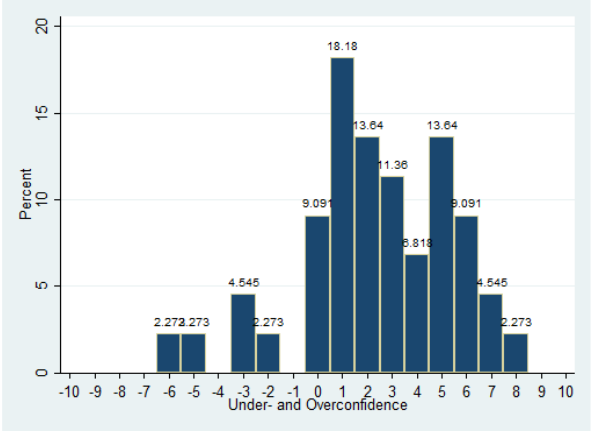
7
8
9
10
Confidence in Others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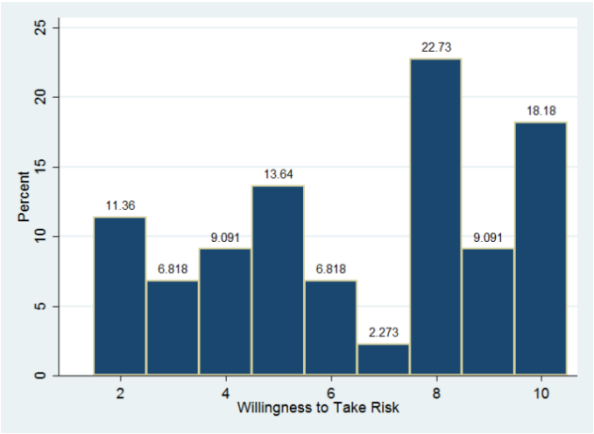
Under- and Overconfidence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4
6
8
10
Willingness to Take Risk

## 8.2. Survey

A. Background information

Surgroid:

Group name:

Name of participant:

Gender of participant:

Age:

B. Happiness

How happy are you with your life in general? (Circle the answer given)

1=very unhappy,

2=somewhat unhappy,

3=neither happy or unhappy,

4=somewhat happy,

5=very happy

How happy are you with your economic situation (Circle the answer given)

1=very unhappy,

2=somewhat unhappy,

3=neither happy or unhappy,

4=somewhat happy,

5=very happy

C. Trust

How much do you trust people in your village? (Circle the answer given)

1=Not at all

2=Just a little

3=I trust them somewhat

4=I trust them a lot

5=Don’t know

D. Locus of control

Which statement do you agree most with? (Circle the answer given)

STATEMENT A: The things that happen in your life are of your own doing.

STATEMENT B: You don't have much control over what happens in life, or in the direction your life is headed.

E. School fees

For how many children do you pay school fees?

## 8.3. Experiment

Confidence

We have here pictures of 10 items. We will let you watch the items for 20 seconds. Your task is to remember as many of them as possible. Are you ready? (For blind person: “we will read the names of the items out loud”)

(Reveal the images for exactly 20 seconds.)

After 20 seconds: Please tell us how many items you remember: we will give you 1 minute to do so.

(RA notes down number of correct answers but does not reveal this to the participant)

Number of items remembered:

This was a trial round. Now, we play for real, using a picture with 10 new items, and where you can earn money according to how well you perform.

We played the same game with people from a village like yours here in Manafwa. Approximately, how many items do you think these villagers typically managed to remember?

I think the villagers typically remembered (0-10)

Now think about how many items you think you will remember in the next round of the game:

I think I will remember (0-10)

Willingness to compete

Before we start the game, we will give you a choice. You can either get 1000 Ush for each item you remember (FIXED RATE) or you can get 2000 Ush for each item you remember, but only if you remember at least as many as the average from the village. If you remember fewer items, you get nothing (COMPETITION RATE).

To give you an example: If you choose the competition rate, and remember 3 items, and the villagers remembered 5, you get nothing. If you had chosen the fixed rate, you would have received 3 000 Ush. On the other hand, if you choose the competition rate and remember 6 items, you would receive 12 000 Ush, while if you had chosen the fixed rate, only 6 000 Us.

Do you understand? Which one do you choose? (tick off the chosen rate)

Fixed rate Competition rate

(Reveal the images for exactly 15 seconds.)

Number of items remembered:

(RA notes down number of correct answers but does not yet reveal this to the participant)

We will soon tell you how well you performed in this game and pay you the money according to your chosen rate and your performance. But before that, we will ask you one final question:

Risk (un-incentivized)

Consider the following statement:

"I am willing to take risks, in general."

Do you agree with this statement? Tick one from 0 to 10, where 0 is "No, I am completely unwilling to take risks, in general" and 10 is "Yes, I am completely willing to take risks, in general".

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |