



Radboud
Universiteit
Nijmegen

Constraining or Enabling?

A quantitative research into the effect of an enabling environment on the relation between member-based organizations and poverty reduction.

Maaïke de Vries
S4040953

Master Comparative Politics
Administration and Society
Political Science

Supervisor: dr. A.S. Zaslove
August 2016

Acknowledgements

Poverty, a word of only seven letters with tremendous consequences for people's lives. A word that seems far removed from most who do not suffer from it, but intimidatingly close to those who do. This aspect of poverty had always had my interest. A personal goal was that my research should endorse or change policy in practice and add value to an organization. When the opportunity arose to combine my scientific interest with a matter of policy, I seized the opportunity as soon as possible. This has led to an internship at the Ministry of Foreign Affairs and the development of a thesis. Sometimes it was difficult to combine the two, not only in terms of time but also in terms of applying science to practice. Striving to find a balance, is the best way to describe this period for me.

The Ministry helps a lot of people in need, through their development aid policy. This does not take away however, that even within this humanitarian domain policy investments need to produce results. It was up to me to see if there was any research available that concluded whether or not member-based organizations can have an impact on poverty. My report on this relation, presented at a seminar, was the start of this thesis. During that seminar I argued that the impact of member-based organizations is a 'black box', an unknown factor, and now it is up to this thesis to open up this box and see how it works.

This thesis would not be possible without the support and guidance of several people. First of all I want to thank my supervisor Andrej Zaslove, for his guidance during the writing process. You always provide me with guidance when needed, and always in a motivating way. I also want to thank Alex Lehr for his patience and endless time, for helping with the difficult statistical models. Furthermore I want to thank the Sustainable Economic Development Department of the Ministry of Foreign Affairs, and in particular Johan Veul, not only for the opportunity at an internship, but mostly for their help and effort with this research. Finally I want to thank my friends and family for the support and their provision of fun during my study, especially my parents who form the foundation for everything I do and have achieved.

Maaïke de Vries

Den Haag, August 2016

Abstract

When poor people are member of an organization it will positively affect their income and well-being. With this assumption in mind the Dutch Ministry of Foreign Affairs backs several Dutch organizations in their support of other member-based organizations with the aim of reducing poverty in developing countries. Previous research has not produced clear results regarding the relation between member-based organizations and poverty reduction, as some studies show an effect and some studies do not. This thesis argues that an enabling environment can positively influence the role member-based organizations can have in reducing poverty. With several regression tests and a fixed effects model encompassing 38 countries over a time period ranging from 1995 to 2014, the effect of an enabling environment on the relation between member-based organizations and poverty reduction is assessed. The main result is that there are no effects found of the influence of member-based organizations on poverty reduction, or of contextual factors that impact this relation.

Key words: member-based organizations, poverty reduction, enabling environment, rule of law, freedom of associations, corruption, fixed effects model.

Inhoudsopgave

1. Introduction	5
1.1 Ending poverty by 2030	5
1.2 Research problem	6
1.3 Research question	7
1.4 Relevance	8
1.5 Outline	8
2. Theoretical framework	9
2.1 Role of member-based organizations	9
2.2 Specific mechanism member-based organizations	11
2.2.1 Agricultural cooperatives	11
2.2.2 Labour unions and poverty reduction	13
2.2.3 Employers' organizations and poverty reduction	14
2.3 Limitations member-based organizations	15
2.4 Enabling environment	16
2.4.1 Member-based organizations and enabling environment	17
2.4.2 Definition enabling environment	18
2.4.3 Rule of law	19
2.4.4 Freedom of associations	19
2.4.5 Corruption	20
2.5 Control variables	21
2.5.1 Level of economic growth	21
2.5.2 Income distribution	22
2.5.3 Level of education	22
3. Methodology & Data	24
3.1 Data	24
3.1.1 Dependent variable poverty	24
3.1.2 Independent variable member-based organizations	25
3.1.3 Context variables	26
3.1.4 Control variables	27
3.2 Conceptualization and operationalization	28
3.2.1. Dependent variable poverty	28
3.2.2 Independent variable member-based organizations	29
Operationalization	30
3.2.3 Context variables	31
3.2.4 Control variables	33
3.3.1 OLS regressions	34
3.3.2 Fixed effects model	35
3.4 Case selection	36
4. Analyse	38
4.1 Descriptive statistics	38
4.1.1 Dependent variable	38
4.1.2 Independent variable	39
4.1.3 Interaction variables	40
4.1.4 Control variables	40
4.2. Assumptions	41
4.2.1 OLS assumptions	41
4.2.2 Multicollinearity	42
4.3 Bivariate analysis	42
4.4 OLS regression and context variables	44
4.4.1 Rule of Law	44
4.4.2 Freedom of Associations	47
4.4.3 Corruption	49
4.5 OLS regression and control variables	50
4.5.1 Direct effect control variables	50
4.5.2 Member-based organizations and control variables	51
4.6 Fixed effects model	52

4.6.1 Bivariate analysis	53
4.6.2 Rule of law	53
4.6.3. Freedom of associations	55
4.6. Fixed effects model and control variables	57
4.6.1 Direct effect control variables	57
4.6.2 Member-based organizations and control variables	58
5. Conclusion & Discussion	60
5.1 Conclusion.....	60
5.1.1 Introduction.....	60
5.1.2 Results	61
5.2 Implications and recommendations	62
5.2.1 Theoretical implications	62
5.2.2 Policy implications	63
5.3 Discussion	64
5.4 Final words.....	65
Literature	66
Tables and Figures	72
Appendix	83
Appendix 1 Key features Enabling Environment	83
Appendix 2 White's test OLS regression.....	84
Appendix 3 Normal distribution residuals	85
Appendix 4 Correlation matrix.....	86
Appendix 5 Multicollinearity	87
Appendix 6 OLS Regression Controle Variables on Poverty	88

1. Introduction

1.1 Ending poverty by 2030

Last year the amount of people living in poverty dropped below 10 percent of the global population. This trend is in line with the World Bank Group's first long-term goal of ending poverty in 2030 (World Bank, 2013a). In 2012 there were 902 million people who lived in poverty, 12.8 percent of the world population, compared to 702 million people, 9.6 percent, last year (World Bank, 2015a). The President of the World Bank Group stated: "This is the best story in the world today - these projections show us that we are the first generation in human history that can end extreme poverty" (World Bank, 2015a). He added however that this goal is still rather ambitious. The strong positive economic growth in developing countries can account for the reduction we have seen over the past years, but the currently decreasing economic growth and the increasing amount of poor segment of society living in fragile and conflict states jeopardize achieving this goal (World Bank, 2015a).

The second of the long term goals of the World Bank is to increase the living standard of the poor people in a sustainable manner and to promote the prosperity of the poorest 40 percent of people in developing countries (Cruz, Foster, Quillin and Schellekens, 2015, p. 27). This goal emphasizes the importance that the World Bank gives to inclusive development and growth, as well as to their focus on inequality. It highlights the need for a dimension of prosperity broader than merely peoples' income, including such aspects in the social or political area (Cruz et al., 2015, p. 28). Between 2006 and 2011 the world average income of the poorest 40 percent of the global population grew faster than the average income of the global population. Caution is advised, however, as 18 separate countries have nonetheless seen the income of their poorest 40 percent decline (World Bank, 2013a). With a projection of 700 million people in 2015, the level of extreme poverty remains very high. Poverty has several consequences, such as poor housing and living conditions, unsafe working environment, water and food-related diseases. On 25 September 2015 the world leaders signed a new global agenda, the 2030 Agenda for Sustainable Development, that consist of 17 Sustainable Development Goals (SDG), with as first goal to end poverty in 2030 (UNDP, September 2015). The new SDG build further on the Millennium Development Goals by creating a focus on the origins of poverty and create development for all people (UNDP, September 2015). The consequences, challenges and goals have increased the attention towards poverty reduction.

The Dutch government's development aid policy reflects the above-mentioned goals, based on the idea that sustainable and inclusive growth will be a permanent solution to poverty reduction. By improving the business climate and stimulating entrepreneurship in developing countries, the Dutch Ministry of Foreign Affairs aims to create sustainable inclusive growth. They perceive the private sector development (PSD) to be essential to their policy (Tweede Kamer, 2013-2014a). Private sector development aims to combine aid, trade and investments in order to increase markets for Dutch business, promote inclusive growth and eventually reduce poverty in developing countries (Tweede Kamer 2013-2014a; Tweede Kamer 2013-2014b). The Sustainable Economic Development Department (DDE) of the Ministry of Foreign Affairs focuses on five themes of the

PSD policy in order to improve the business climate: promoting access to markets and sustainable trade, development of the financial sector, development of infrastructure, improving legislation and empowerment of economic institution and the actors within these institutions (Ministry of Foreign Affairs, 2014a, p.6).

Regarding the latter theme, the empowerment of economic institutions and actors, the underlying assumption is that with the collective action of poor people within well-functioning, fast operating and reliable institutions and actors have a positive effect on the business climate in developing countries. When poor people are member of an organization, this will have a positive effect on the income and well-being of them (Ministry of Foreign Affairs, 2014a, p. 3). This assumption is known within the Ministry of Foreign Affairs as the Theory of Change (TOC). With this in mind the Ministry backs several Dutch organizations that support various organizations and associations in developing countries, with policy dialogue and finance. Though the Ministry supports a variety of Dutch organizations in their aim to empower economic institutions in developing countries, this research will focus on member-based organizations supported by DDE, consisting of Agriterra, the Dutch Employers Cooperation Program (DECP) and the Labor Union Co-financing Program (VMP). It is assumed that there is a positive relationship between the empowerment of MO and the reduction of poverty in developing countries.

1.2 Research problem

The assumption of the Ministry that empowering member-based organizations will result in a reduction of poverty, is more complex than was assumed at first. There have been evaluations of the Dutch development aid policy that have concluded that individuals within member-based organizations have benefitted from participation, such as farmers who were able to increase their sales volumes and as such affect their income. However, there have also been cases in which no change had been measured. It is also not always indisputably clear whether an increase in income is a direct effect of membership or of other contextual factors (KIT, April 2015, p. 10).

Not only the evaluations of the Ministry's policies indicate a complex relation between member-based organizations and poverty reduction, scientific literature has produced mixed results as well. According to the World Bank (2002, p. 200) member-based organizations are a tool that can empower poor people and create an opportunity for them to raise themselves out of poverty. Grootaert argues that organizations can affect poverty reduction. He states: "associations and institutions provide an informal framework to organize information sharing, coordination of activities and collective decision making, which can have an impact on development outcome" (Grootaert, 1998, p.3). His case study of Indonesia shows that that a higher number of members and more active participation create a positive effect on income at the household level (1999, p. 63). Contrarily, researchers have addressed the limitations of member-based organization and their effect on poverty reduction, such as the exclusion of the poor people from the decision-making process or in such cases where associations were found to have been controlled by the government (Bernard & Spielman, 2009; ILO, 2003). Also, as Birchall and Simmons (2009) argue, even when working together is the best way to improve people's situation, the costs of setting up or joining an organisation might simply be too high for them to induce the change.

The different conclusions that can be drawn from the relationship between the evaluations and scientific literature can have several internal organizational explanations, as well as external contextual factors such as security, good governance or favourable environment, according to Ragasa and Golan (2012 cited in IOB, 2014, p. 160). The more in-depth evaluation of supported organizations in Tanzania, the Democratic Republic Congo and Madagascar show that it is difficult to definitively conclude that an empowerment of the rural producer organizations have a positive effect on the activities and income of farmers. In general this evaluation shows that the actualization of these organizations is far removed from the initial development goals and an important explanation of this is the impact that external negative factors have proven to have on the organizations. The rural producers' organizations in the Democratic Republic of Congo show that lack of safety, violent conflicts that have ensued between several groups, underdeveloped infrastructure and unstable markets are all factors that have influenced the activities of the organizations there. The interference of government which had artificially kept agricultural prices low in order to avoid political conflict had a similar negative effect on cooperatives in Madagascar and their effort to contribute to development (IOB, 2014, p. 164).

Similarly, Grootaert (1998) underlines the effect of an enabling environment. According to him the scope and effective use and strength of the member-based organizations are determined by the broader political and policy environment. He states: "the latter can encourage or discourage local member-based organizations and provide incentives or disincentives for people to participate" (Grootaert, 1998, p. 19). Also the Ministry's evaluation concludes that the effect that organizations have depends on their context in which they operate (IOB, 2014, p. 160). The concept of an enabling environment can be described as something of a 'black box', as it is not always explicitly defined in scientific literature and policy documents. However, these aforementioned external factors can perhaps explain the variations that exist between the conclusions of different authors and evaluations on the effect that member-based organizations have on poverty reduction.

1.3 Research question

Literature shows that member-based organizations can have a role in reducing poverty. However, case-studies also show that not all cases lead to a measured effect. Some researchers state that an enabling environment is needed in order for member-based organizations to perform their role in reducing poverty. However, the concept of an enabling environment is a black box, as it is unknown what its precise effect is on the relation between member-based organizations and poverty reduction. This leads to the following research question:

Is there an effect of contextual factors on the relationship between member-based organizations and poverty reduction?

In order to answer this question it is important to answer relevant sub-questions first.

- 1) How can member-based organizations play a role in reducing poverty?
- 2) What is the effect of member-based organizations on poverty reduction?
- 3) Which factors constitute an enabling environment?
- 4) What is the effect of contextual factors?

1.4 Relevance

An important question to answer is why it would be relevant to conduct research on the effect that member-based organizations have on poverty reduction and how they are influenced by their context. This research is as scientifically relevant as it is relevant for public policy. Scientific literature has not put forward a single clear definition of what constitutes as an enabling environment. Although many researchers mention an enabling environment as a condition that can influence the effect member-based organizations on poverty, limited research has been done into its exact effect. This thesis aims to provide a more detailed description of what the effect of an enabling environment is. It attempts to open up the 'black box' regarding this seemingly ambiguous term. Furthermore, previous research uses qualitative research methods focusing on in-depth case studies in order to determine the effect of member-based organizations. The aim of this thesis is to sketch a bigger picture of member-based organizations and their effect on poverty, and in what manner it is influenced by context. The quantitative research design with a focus on macro level context variables is unique within the domain of member-based organizations, as many previous researches have made use of qualitative research methods. A major reason for using qualitative techniques has to do with the fact that comprehensive data on member-based organizations is not available to any great extent. However, this thesis aims to make a start in researching member-based organizations in a quantitative way.

Secondly, the thesis has policy-based relevance. This research will give the Ministry a more comprehensive view on the relationship that member-based organizations have with poverty, with all its pros and cons. When policy officers are made aware of the influence that contextual factors have on the effect of collective action organizations, they can pro-actively respond to them and keep them in mind when making policy decisions within this field. That way, when governments determine which countries they want to engage with, be it economically or humanitarian, they can take the context of the member-based organizations into account beforehand.

1.5 Outline

This research will first discuss the theoretical framework with an overview of the literature and the derived hypothesis. Subsequently a methodological framework will provide a description of data, conceptualization, operationalization and the research method. Following this is a description of the results and analyses. Lastly, a conclusion, discussion and recommendations on this subject matter will round off this paper.

2. Theoretical framework

The effect that member-based organizations have on poverty reduction is not as straightforward as it seems. However, researchers do often mention the involvement of an enabling environment in order to obtain a positive effect. The influence these factors have is as yet an indeterminate factor. In order to obtain a clear outline of the influence that member-based organizations have on poverty, this section will first address the question why member-based organizations are suitable for reducing poverty. The following sections will address the question of how the specific member-based organizations contribute to poverty reduction, followed by a description of what an enabling environment entails and what the assumed influence of several contextual factors is on the connection between member-based organizations and poverty reduction.

2.1 Role of member-based organizations

Why are member-based organizations suitable for reducing poverty? There is a debate among researchers, international organizations and non-governmental organizations about the most effective way of reducing poverty. One in five people in developing countries live in conditions of poverty (UN, 2015). The importance placed on reducing this number is increasing and it considered to be one of the biggest challenges human society has faced to date. The importance of reducing poverty is also brought forward in the new UN global agenda, which presents ending poverty as its primary goal (UNDP, 2015). There are many parties that contribute to the alleviation of poverty, such as the United Nations agencies and their United Nations Millennium Development Goals (MDG) of 2000 and their SDG of 2015, The World Bank and its Poverty Reduction Strategic Papers, the International Monetary Fund (IMF), Non-Governmental Organizations (NGO's) and national governments. All these actors have differing perspectives on how and with which instruments to reduce poverty (Wanyama, Develtere and Pollet, 2008). Microfinance programs, for instance, can help people escape poverty by lending them the funds to start or expand their business. Water and sanitation programs can improve access to clean water and sanitation, which can expand agricultural production as women no longer have to spend as much of their time collecting water and can instead generate an income, which will reduce their poverty (World Bank, 2013b).

There is a long-term consensus that when people get together and collectively act, they can achieve equitable growth and reduce poverty. There is substantial research on collective action of individuals within organizations and networks. Marshall states that "collective action can be understood as an action taken by a group of individuals to achieve common interest" (Marshall, 1998 cited in Di Gregorio et al., 2008, p. 7). Another author often cited in the collective action theory is Olson (1965), who argues that individuals can overcome deterring factors through working together and achieve their common interest, under the condition that they work in a stable institutional environment. He states (cited in Breuer et al., 1995) that "collective actors in markets (cartels, trade unions) and in politics (lobby groups) can collaborate to capture rents for their constituent members". (p. 369). Collective action can address the power structure within a country

in two ways: first of all, it can result in economic cooperation between members and form cooperatives for farmers, water and services. Second, acting collectively creates a lobby instrument for members to influence institutional reforms. When individuals act together, they gain bargaining power, which can create pressure on the state to adopt a more pro-poor policy. Not only can the power structure be influenced by the collective action of individuals, it also enables individuals to adopt more advanced technology (Di Gregorio et al., 2008).

Collective action through an organization is often associated with poverty reduction. There is substantial evidence for the hypothesis that an increase in cooperation within a country as a whole improves the national well-being. Cooperation has shown to have an impact on development and several dimensions of well-being (Grootaert & Van Bastelaer, 2002). The World Bank also emphasizes the possibilities that collective action of individuals offer in order to reduce poverty. It states that:

One of the most important and most overlooked development assets is the capacity of poor people to mobilize and organize for collective action. Member-based organizations and networks of poor people have emerged in many places in response to the common needs of a specific group. (World Bank, 2002, p. 200)

The World Bank recognizes member-based organizations to be tools that can empower poor people, enabling them to raise themselves out of poverty (World Bank, 2002, p. 200). Their experience with rural poor people has shown that by organizing into rural producers' organizations, they lift themselves out of poverty and improve their household income. According to the World Bank these member-based organizations are key actors for any development strategy (World Bank, 2002, p. 200). Furthermore, Chen, Jahbvala, Kanbur and Richards (2006) have researched different types of member-based organizations and have identified the determinants for success of these organizations. Their research is founded on the same conviction as the World Bank that member-based organizations can be an instrument for poor people to reduce their poverty.

Figure 1: Conceptual model



This conviction leads to the first hypothesis:

H1: A higher level of member-based organizations will decrease the level of poverty in a country.

Some researchers are concerned by the reverse causality between member-based organizations and poverty reduction (Mwango & Markelova, 2009). They indicate that perhaps “better-off households can have higher demand for associational life, because they have more leisure time and more resources to contribute to a particular group” (Mwango & Markelova, 2009). It can be that when there is less poverty in a country the membership of organizations is higher. However, as Kamstra (2014) argues, people in poor countries need an organizational membership more, because of the comprehensiveness of poverty in their country. Often in poor countries organizations can offer the essential services that the state is unable to provide. Member-based organizations provide resources for their members’ basic needs of life.

There are several types of member-based organization in which individuals can cooperate in order to reduce their poverty. Important to notice is that the organization needs to be concerned with the welfare of the poor. In their member-based framework, Chen et al. (2006) distinguished between labor unions, workers organizations and savings-and credit organizations. Because the Ministry focuses their development aid policy on agricultural cooperatives, labor unions and employers’ organizations the next section is explaining the mechanism of these types of organizations further.

Although several member-based organizations contribute to poverty reduction and play a key part in development (World Bank, 2002, p. 200), all member-based organizations contribute in a different way. The next paragraphs show in what manner member-based organizations can contribute to poverty reduction and how their approaches differ from each other.

2.2 Specific mechanism member-based organizations

2.2.1 Agricultural cooperatives

Cooperatives are “ an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise” (ICA, 2015). This definition of cooperative is a derivative from the ICA’s seven principles. First, cooperatives are based on voluntary and open membership; so all people can join or leave the cooperative. Second, they have democratic member control. The control of the organization lies with their members, who make the decisions and formulate policies based on equal voting rights. Third, members equitably add capital to the cooperative. Fourthly, the cooperative is autonomous. Fifthly, since cooperatives are member-based organizations it is to be expected they provide services to their members. Sixthly, the cooperative can cooperate with other cooperatives because they share the same values. And lastly, cooperatives concern the broader community, because they have been introduced for the benefit of their members (ICA, 2015; Birchall, 2004).

There are several mechanisms agricultural cooperatives can use to reduce the level of poverty. In their research, Wanyama et al. (2008) define three major mechanisms cooperatives can use to contribute to poverty reduction in Africa. The first mechanism is that cooperatives create employment and generate income, by offering direct wage employment or in the self-employment realm. The second major mechanism is the development of human capital, for example health care. The third mechanism Wanyama et al. describe in which way cooperatives contribute to reduce poverty is by ensuring social protection. Cooperatives are increasingly protecting their members and the community for all manner of disasters that can disrupt their lives. According to Wanyama et al. (2008, p. 14) cooperatives are a preferred mechanism for mediating people's access to resources and developing the activities on which their livelihood is based.

In his research Birchall (2003, p. 20) does not only address why cooperatives contribute to poverty reduction, but also defines more specifically how they do so. He uses three notions from the World Bank to analyze this systematically: opportunity, empowerment and security. Opportunity in this context, means 'that poor people have the possibility to raise themselves out of their situation' (Birchall, 2003, p.20). This can be on the demand side and supply side of the notion, as they 'open up markets by organizing supply of inputs and on the other side marketing of outputs' (Birchall, 2003, p. 20). The second notion is empowerment. The World Bank defines this notion as follows: "the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives" (cited in Birchall, 2003, p. 21). Poor people should have control over their invested resources and participate in the decision-making process. Cooperatives can empower powerless individuals by acting collectively. The third notion is security, which is defined as "taking measures to reduce poor people's vulnerability to risk" (Birchall, 2003, p. 23). These risks can affect individual, villages or even entire countries. The contribution of cooperatives in this notion can be divided between individuals or communities. By pooling risk at the broader, cooperative level the risk on individual level will be reduced (Birchall, 2003, p. 23-25).

In developing countries agricultural cooperatives play an important role, because seventy percent of the poor people in the world live in rural areas, where their livelihoods is based on agriculture or agricultural-related activities (World Bank, 2002, p. 200). There are many examples of agricultural cooperatives that have helped farmers to escape poverty, such as the dairy cooperatives in Kenya (Sinja et al., 2006) and the cotton production in Mali (Tefft, 2004). A case study of Rwanda (Verhofstadt & Maertens, 2015) shows that cooperative membership has significantly increased the income of farmers, around the 40% to 45%, and significantly reduces the chance of poverty for farmers by about 10% to 14%. In another case study in Vietnam, Moustier et al (2010) found that farmers' cooperatives increased farmers' profits, compared to the traditional supply chains. Due to the cooperatives, farmers become direct suppliers to supermarkets instead of marketing produce on an individual basis. Additionally, farmers received better prices for their products, as the cooperative enabled them to scale up their production and improve the quality of their products. Many international organizations, governments and researchers perceive agricultural cooperatives as a collective action instrument for development, raise and claim political demands, increasing incomes and reducing rural poverty (World Bank 2007; Wanyama et al., 2008; Bernard & Spielman, 2009; Markelova et al., 2009; Shiferaw et al., 2009; Hanisch, 2016, p. 50; DFID, 2010).

2.2.2 Labour unions and poverty reduction

Another perspective is that, to be member of a union contributes to poverty reduction. Membership of an union have an effect on personal situations, as unions represent their members' interests in management and work to ensure that its members' collective voices are heard during bargaining processes and day-to-day operations at the workplace (Sran, Lynk, Clancy & Fudge, 2013). Sran et al. indicate that the strength of labor unions is their presence at the negotiating table, increasing the wages and creating benefits for workers. Unions also lead to workers' benefits and an increase in wages for non-union members, because union activism in any given country will be a continual check for actors within the social dialogue (Sran et al., 2013). The DFID underlines the positive role of trade unions in development, especially in the context of eliminating poverty (TUC, 2006, p. 3). Unions are directly involved in the production and distribution as democratically accountable institutions, which contribute to the creation of welfare. They play a role in reducing poverty and injustice by promoting human and employment rights. With their effective participation in national policy development and implementation, they can exercise considerable influence over many aspects of public life and welfare. The DFID also recognizes the effect labor unions have on empowering women, improving education and ensuring health and well-being as a basic human right. Also the ILO sees an active role for workers' organizations in their fight to reduce poverty:

The fight against poverty can only be sustained and won if due consideration is given to the presence and strength of institutional arrangements for consultation and negotiation. In other words, it is paramount to intensively and directly involve those affected by ongoing social and economic transformations, i.e. workers and their communities. (ILO, 2003, p. 22)

They continue to state that workers' organizations are seen as a "lasting solution to addressing poverty, stimulating and promoting the productive sectors of the economy and creating jobs" (ILO, 2003, p. 22). They point out that: "poverty must be addressed through employment creation and collective bargaining" (ILO, 2003, p. 22). Collective bargaining can increase wages of the employees of poor people, which can reduce their poverty. In his analysis, Mwamadzingo (ILO, 2003) labels this contribution as the economic role of workers' organizations in reducing poverty. Not just wages can be determined by collective bargaining, but other forms of working conditions as well, which Mwamadzingo defines as the social and human development role of workers' organizations (ILO, 2003, p. 23). Combined, this results in decent working and living conditions.

Workers' organization faced with poverty can undertake three types of action. First of all, they can participate in negotiations in order to encourage social dialogue. Secondly, they can organize specific activities, most often through poverty-related programs, stimulating workers' education and training. The third type of action they can take concerns community interfacing. Workers' organizations do not just represent the interests of their members, but their mandate is broader and extend to their members' families as well (ILO, 2003).

Overall, there are several contributions that workers' organizations make to improve the overall situation of their members. But what is the precise effect of labor unions on poverty? In a quantitative research, Baker (2013) states that there are several factors that can affect the poverty

rates in a country, but the power of unions stands out among them. He notes that “there is a very strong inverse relationship between the percentage of workers who are covered by a union contract and the poverty rate” (Baker, 2013). His regression analysis shows that when there is a the membership of labour unions decreases with 10 percentage the poverty level will be reduced by 0.7 percentage. According to Baker (2013) there could be a lot of differences responsible for the reduction poverty. Nevertheless, the unions were an explicitly explanatory variable in the advancing of various policies that were responsible for reducing poverty.

2.2.3 Employers’ organizations and poverty reduction

For a long time a pessimistic view about the contribution that employers’ organizations have on development prevailed. Most authors did not pay much attention to employers’ organizations and when they did they assumed a negative influence. Olsen (1982), states in ‘The Rise and Decline of Nations’, that business organizations (intermingled with the term employers’ organization) always have distributive objectives and would rather pursue rents than the common or public interest. Later on however, he become less critical and states that these organizations have a very narrow interest (in Doner & Schneider, 2000, p. 280). Nevertheless, this view changed. While not disconfirming the argument made by Olsen, empirical studies do show that under certain conditions employers’ organizations have a positive contribution to the economic performances of developing countries. In some cases the distribution of rents can result in the production of private or even public goods (Doner & Schneider, 2000, p. 263). There is now the perspective that employers’ organization can contribute to poverty reduction.

The ILO (2007) identifies the potential contribution of business associations in three areas; democratic governance, economic efficiency and social equity. In the first area, democratic governance, business organizations are frequently involved in governance-enhancing activities, contributing to well-functioning democracies and good governance, by pressuring policy-makers into strengthening the rule of law, fighting corruption and increasing the accountability of the government. Also, through social dialogue employers’ organizations increase the enterprises productively and improve the workplace practices for the workers.

The second area employers’ organizations can affect is economic efficiency. They can contribute to a sustainable economic development (ILO, 2007; Doner & Schneider, 2000). In their analysis, Doner & Schneider (2000) divided this contribution to economic development in two categories. Firstly, market-supporting; “business associations support the provision of basic public goods that are essential for the operation of market economies, which are the rule of law (including property rights), transparent and effective public administration, and infrastructure” (Doner & Schneider, 2000, p. 263). The first two are provided by the state, so the contribution that the employers’ organizations create is indirect, through executing pressure on the government. And while this indirect contribution is also a factor for the third of the public goods, infrastructure can also be directly affected and even provided by employers’ organizations (Doner & Schneider, 2000, p. 263). The second contribution to economic development is through market-complementing activities; actions by employers’ organization with the attempt to overcome various problems within the market. It involves “the direct coordination among firms to reconcile interdepend

production and investment decisions” (Doner & Schneider, 2000, p. 264-270). The third area in which employers’ organizations can contribute is social equity, which can be through two channels: income distribution and social inclusion (ILO, 2007). A ten case study research of the ILO in 2005 (p. 9) shows that employers’ organizations from across the world have taken a play an important role in gender inequality problems and discrimination in the working domain.

The above-mentioned literature and research has demonstrated the positive contribution employers’ organizations have in a variety of areas. However, what do these contributions actually mean in terms of poverty reduction? Sen and Velde (2007) did a quantitative research on the effect of business organizations on economic growth and poverty reduction. Their analysis, across 19 Sub-Saharan Africa, concludes that there is a direct link between employers’ associations and poverty reduction. It shows that countries with an effective business to state relation have more economic growth and a strong positive impact on pro-poor growth. An effective collaboration between the business sector and the state improves living standards throughout society.

The previous section shows that different types of member-based organizations contribute in a different way to poverty reduction. While they have in common that they promote the interest, provide services and participate in decisions-making process for their members, each type of organization will do this in a different way.

2.3 Limitations member-based organizations

The previous discussion shows that member-based organizations in general and the specific types have been considered by researchers and international organizations to be suitable instruments with which to address poverty. However, some also discuss the limitations of member-based organizations and in their intentions of reducing poverty. There have not only been success stories, but also examples of how low managerial capacity and member participation, weak finances and political interferences have tempered the expectations of organizations (Hanisch, 2016, p. 48; Birchall, 2003). Shiferaw, Hillin and Muricho (2011, p. 477) state that collective action organizations are not infallible and that there are some challenges and limitations accompanied with them. There are some challenges for the organizations’ assets that can hamper successful cooperation. Shirefaw gives the following examples: “basic education, management and entrepreneurial skills, and financial capacity” (Shiferaw et al., 2011, p. 477). The consequence of these contextual challenges is that it can decrease the developmental impact they eventually have (Shiferaw et al., 2011, p. 477).

Regarding the specific member-based organizations, agricultural cooperatives, labour unions and employers’ organizations there are some further specific limitations in their functioning. There have been case studies of agricultural cooperatives that address the failed attempts of collective action of farmers and the challenges they face. In Zimbabwe, groups of farmers have had trouble organizing due to mistrust between themselves. In Chile there were producers’ organizations that had difficulties enforcing the rules among the members, because the social relations between the parties involved were too close (Shirefaw et al., 2011). Also Shirefaw, Hellin and Muricho (2016, p. 115) identify several challenges that agricultural cooperatives face. One of the key challenges is the complexity of the demand and the conflicting nature of stakeholders’

interest, which might not always align with the agribusiness orientations of many farmers. Shirefaw et al. argue that agricultural cooperatives need to balance these conflicting and competing demands. Another challenge is the risks linked to globalization and the increasing influence of external markets. The effectiveness of a cooperative can be limited by increasing influence of transnational agrifood companies and subsidized producers in distant locations (Shirefaw et al., 2016, p. 116).

In their analysis of the contribution of workers' and employers' organizations, the ILO states that not all organizations have the same effect. Some workers' or employers' organization are weak, divided and generally ineffective (2007, p. 173). They have identified three explanatory variables for this variation between organizations. The first variable is freedom of association and collective bargaining. In order for workers' and employers' organizations to flourish and develop, the rights of employers and workers to have the freedom to create and join the organization without any constraints are crucial. According to the ILO (2007) these rights are not only instrumental and necessary for workers' and employers' organizations, but they are also cornerstones of inclusive and democratic societies. The second variable for the effectiveness of an organization is its institutional strength. Research shows that the benefits that make membership valuable for members, the density and balance of the widespread members' interests, determine the level of institutional capacity. Furthermore, a common factor for the failing of organizations is the underrepresentation of workers and employers from smaller organizations, which can negatively influence the institutional strength. A balanced representation is important for creating and maintaining institutional strength. The third variable of influence on the success of workers' and employers' organizations are the external constraints. The ILO identified two key external constraints, namely competitive markets and state discipline. Competitive markets create incentives and opportunities for the organization to increase their welfare-enhancing functions and activities. State discipline can be a "constraint when governments grant organizations selective benefits in return for enhanced economic performance by their members" (ILO, 2007). Governmental initiatives to regulate prices prevent cooperatives to become commercially and financially viable. Not only a government's policies, but also its level of control can reduce an organization his efficiency. Pinto (2010) refers to this development and states that government can utilize cooperatives as political stages and become part of the state policies, which can reduce their original development function.

Another aspect to keep in mind is that the effect of workers' and employers' organization can be limited due to the fact that most of the poor people in developing countries are involved in the informal sector. The contributions that workers' and employers' organizations have are largely based in the formal sector. Similarly, whereas these organizations might have a positive contribution, they may not reach the poor people and reduce their poverty. Additionally, cooperatives may exhibit the middle-class effect, in which the cooperative may have the tendency to attract individuals that are slightly better off, effectively excluding the poorest (Shiferaw et al., 2011; Bernard & Spielman, 2009).

2.4 Enabling environment

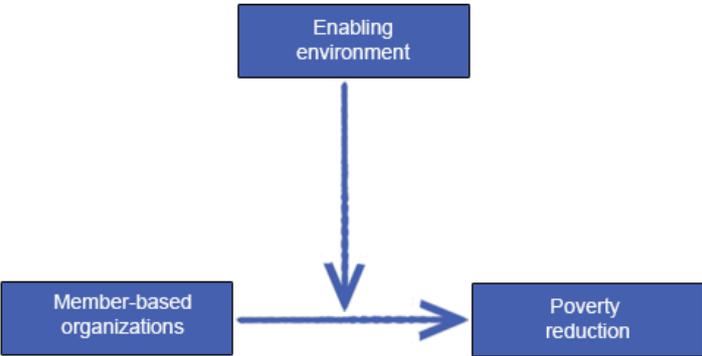
Previous sections show that member-based organizations can have a role in reducing poverty. However, case-studies show that not all cases lead to a measured effect. Often researchers state that an enabling environment is needed in order for member-based organizations to perform their role in reducing poverty.

2.4.1 Member-based organizations and enabling environment

The effect member-based organizations can have depends on the external environment in which they operate (IOB, 2014, p. 160). Though the term is not explicitly defined, researchers often mention the need for an enabling environment for member-based organizations. Shiferaw et al. (2011) state that "the organizational rules and governance systems play a key role in shaping the expectations of members about the overall feasibility and gains from collective action" (p. 482). Markelova et al. (2009) have identified three broad categories as important factors which are likely to affect organizations acting collectively; "the characteristics of the resources, the characteristics of the uses groups and the institutional arrangements plus the external environment" (p. 3). The two aspects most important to member-based organizations are the relation with the markets and with the state. It is difficult to work together with an overshadowing context of state hostility or macroeconomic instability as these factors can undermine the incentive of individuals to cooperate (Markelova et al., 2008, p. 5). The authors also address the role of good governance, through which a good legal and credit system in favor of poor individuals can increase their possibilities and incentives to cooperate. Furthermore, Birchall's research addresses the impact of context on cooperatives and the effect they have on poverty reduction and notices that "the outcomes of cooperative enterprise are affected by culture, the politics, the system of land tenure, level of education and prevailing ethical standards of a country" (Birchall, 2003, p. 11). The argument is made that the external environment is an important aspect when analyzing the role of organizations in poverty reduction. It has an influence on the relationship between member-based organizations and poverty reduction, which can be seen in Figure 2. More precise, member-based organizations need to operate in an enabling environment in order to have a positive effect on poverty reduction.

Brinkerhoff, Smith and Teegen (2007, p. 86) analysed the effect of an enabling environment on the role that non-governmental organizations play in realizing the MDG's. They argue that it is important to be more detailed on an enabling environment, by examining the factors and the effect of the factors on several development domains. For a better understanding, it is important to define enabling environmental factors and describe the expected impact they have on member-based organization and poverty reduction. This will be done in the next section.

Figure 2: Conceptual model including enabling environment



2.4.2 Definition enabling environment

Previous section shows that an enabling environment is important for member-based organizations and their role in poverty reduction. However, the concept of an enabling environment can be classified as a 'black box', which is why it is important to get more insight into this concept. So what is an enabling environment exactly? Brinkerhoff et al. (2007, p. 86) states that "the definitions of the enabling environment are numerous, and range from all-encompassing to narrow". But he continues by saying that a general definition clarifies that "an enabling environment is a set of interrelated conditions, such as legal, bureaucratic, fiscal, informational, political and cultural, that impact on the capacity of development actors to engage in development processes in a sustained and effective manner" (Brinkerhoff et al., 2007, p. 86). In their analyses they categorize the features into five different categories: economic, political, administrative, socio-cultural and resource (see Appendix 1).

According to the World Bank an enabling environment consists of legal, regulatory and policy framework (World Bank, 2003; World Bank 2016a). In their theoretical framework, the World Bank argues that external factors can either assist or hinder civil society in promoting the interest of the poor. The external conditions influence specific enabling factors that are crucial for organizations to have an effect on development. These factors are:

The freedom of citizens to associate, secondly their ability to mobilize financial resources to fulfill the objectives of their organizations, thirdly their ability to formulate, articulate and convey opinion, fourthly their access to information, which is necessary to exercise voice, engage in negotiation and gain access to resources, and lastly the existences of spaces and rules of engagement for negotiations and public debate. (World Bank, 2003)

Literature expresses that there are at least three context factors that are important for member-based organizations, more specifically for the role they can have on poverty.

2.4.3 Rule of law

First, there is the importance of rule of law. As the World Bank states "it is widely believed that well-functioning law and justice institutions and a government bound by the rule of law are important to economic, political and social development" (World Bank, 2015b). It is important because it safeguards equality of citizens and prevent that state institutions cross the rule. The absence of rule of law creates both poverty and impendence poverty reduction (World Bank, 2015b). Several researchers support this, like Grandvoinet (2001, p. 159), who argues that the access to legal information and to the legal system is essential to reducing poverty. It even gives poor people the opportunity to take advantage of economic possibilities.

But rule of law is also important as a contextual factor for member-based organizations. In his definition of an enabling environment Grootaert (1998, p. 19) states that an independent judicial system can influence organizations. An independent judicial system has already been mentioned as one of the elements of an enabling environment by Brinkerhoff's definition (2007, p. 87). In relation to organizations, O' Donnell argues that "rule of law must exist for the functioning of diverse social organizations and for the exercise of vertical societal accountability" (O' Donnell, 2005). He argues that when there is a low level of rule of law poor people can be dispossessed from their rights, because it is harder to claim accountability from the state (O' Donnell, 2005). Strengthening rule of law can mean so much as mobilizing people, in the form of sustainable and viable organizations, so that they can hold the state accountable to deliver, provide and protect over a longer period. This means that a good functioning rule of law allows poor people to protect their rights better and learn to claim accountability from the state, and thrive within organizations over a long term (Khan, 2009). When poor people get better services delivered and their rights guaranteed, it creates the possibility for them to lift themselves out of poverty. This gives rise to the expectation that when a country has a higher level of rule of law, it will have a positive effect on member-based organizations and their effect on poverty. This leads to the following hypothesis:

H2a: The higher the level of rule of law, the lower the level of poverty in a country.

H2b: The effect of member-based organizations on poverty reduction will be higher when a country has a higher level of rule of law.

2.4.4 Freedom of associations

Another factor that is discussed in the literature is freedom of association. The ILO (2011) argues that freedom of association has a positive influence on the development level of a country and that it has contributions in four areas, one of them being poverty reduction. It is necessary to ensure that organizations can contribute to the development process. It enables the organization to participate in the decision-making process, but only if there is the right for representatives to speak freely and advocate on behalf of their members (ILO, 2011, p.3) When this freedom of association is guaranteed, then 'membership organizations can provide an effective and

independent vehicle for voicing and representing the interest of their members' (ILO, 2011, p. 3). Freedom of association is an important contextual factor for member-based organizations. Freedom of association is one of the core rights written down in the Universal Declaration of Human Rights, which enables "people to form, join and participate in non-governmental organizations, associations or groups" (Puddington, 2008). When these rights are not safeguarded in a country, then people cannot freely join or create member-based organizations with any guaranteed effect. This assumes that when a country safeguards the freedom of association, member-based organization can exist and function, enabling them to play a part in poverty reduction.

H3a: The higher the level of freedom of association, the lower the level of poverty in a country.

H3b: The effect of member-based organizations on poverty reduction will be higher when a country has a higher level of freedom of association and expression.

2.4.5 Corruption

Corruption can directly affect poverty. The research of Gupta, Davoodi and Alonso-Terme (1998, p. 18) concludes that higher rates in corruption correspond with lower income growth of the poor people, thus rising corruption increase poverty. They argue further that when corruption increases, the poverty level increase as well because of the lower availability of services to poor segment of society. Gupta argues even that when policies are implemented that reduce the level of corruption in a country, it can be assumed that the level of poverty is also decreasing (Gupta et al., 2000, p.22-23). Also the World Bank (2001, p. 102) states that in attacking poverty, corruption – even petty corruption – has dramatic consequences. The burden of petty corruption disadvantages poor people disproportionately.

Corruption is also an important contextual factor for member-based organizations. Transparent government, the second element Grootaert (1998) identifies as an influence on organizations in his definition of an enabling environment, includes the level of corruption. This is also mentioned in the research of Brinkerhoff (2007, p. 87), as an administrative factor instead of a political factor, influencing organizations and their effect on development. Corruption can be an explanatory variable for the dynamics of group formation, as Dunanova mentions (2007, p. 457). In her research into business organizations she argues that this can happen in two ways: first, she argues that corruption can, perhaps counterintuitively, increase the overall incentive to form organizations. By joining organizations people might be better able to resist corruption, for example by stimulating the sharing of information about confronting corruption, developing legal protection mechanisms and making it easier to report corruption (Dunanova, 2007, p. 443-44). Contrarily she states that the existence of corruption can also decrease the incentive to form business organizations, not only because corruption through personal channels can be a substitute for other means of problem solving, but business organizations are an easier target for regulation by corrupt officials than individuals (Dunanova, 2007, p. 443). This assumes that corruption decreases the incentive for group formations, and thus decrease the level of organizational membership. Duvanova claims that "if the formation of business associations depends on the legislative and institutional environment in which they operate, the extent of administrative corruption should have an effect on the levels of organizational membership" (Duvanova, 2007, p.

443). Since corruption disadvantages poor people disproportionately (World Bank, 2001, p. 102), the assumption arises that corruption leads poor people toward a disincentive rather than an incentive to organize themselves. Member-based organizations cannot play a role in the reduction of poverty when people do not organize themselves to form them. This means that a higher level of corruption would hamper the role that member-based organization can play in the reduction of poverty. This section leads to the following two hypotheses.

H4a: The lower the level of corruption, the lower the level of poverty in a country.

H4b: The effect of member-based organizations on poverty reduction will be higher when a country has a lower level of corruption.

There are however other factors that correlate with poverty reduction, independent from member-based organizations. These variables are control variables, which are important even though they are not the focus of this research, as they do correlate with or affect the independent variable (Allison, 1999 p. 50). In the next section the control variables are discussed that may have an effect on poverty reduction.

2.5 Control variables

2.5.1 Level of economic growth

In scientific literature there is a consensus that economic growth is an important determinant for poverty reduction, as poor people benefit from economic growth and suffer from economic contraction, according to Ravallion (2001, p. 1812). He shows that there is a relation between economic growth and poverty reduction, meaning that when the economic growth rates are on the rise, the poverty rates decline. This relationship also works the other way around. Dollar and Kraay (2002) have the same conclusion, as their study has shown that when income increase with one percentage the income of the poor segment also increase with one percentage. Lübker, Smith and Weeks (2002) argue however that there are some flaws in this research, questioning the soundness of the theoretical equations and finding inconsistency in the testing, but the positive correlation between economic growth and poverty reduction remains. Nevertheless, the research of Ravallion (2001) shows a large variation between different countries and how poor people benefit from the growth and the perceived impact. The DFID argues that "growth itself is not a sufficient condition for poverty reduction: appropriate governance structures are required to ensure that growth is pro-poor" (DFID, 2013, p. 5). Generally, however, it can be assumed that a higher level of economic growth will have a positive effect on poverty reduction.

2.5.2 Income distribution

Besides the overall income of a country and its inhabitants, the level of income inequality can also be a determinant for the level of poverty in a country (Ravaillon, 1997; 2001). When there is a high level of income inequality in a country, economic growth is less beneficial for the poorest people in a country. Ravallion (2001, p. 1812) argues that economic growth can have both winners and losers and that initial inequalities are important in explaining the differences. These inequalities implicate what the allocation to the poor of the economic growth. He argues that the level of income inequality can hamper pro-poor growth, in which the poor are expected to gain a high share of the advantages of economic growth (p. 1809). The expectation is that a lower level of income inequality will have positive effect on the poverty level.

2.5.3 Level of education

According to the World Bank (2016c) education is strongly related to poverty. They confirm that "education is a powerful driver of development and is one of the strongest instruments for reducing poverty and improving health, gender equality, peace, and stability" (World Bank, 2016c). In their attempt to end global poverty by 2030, the World Bank focus their poverty reduction strategy on free and equal access to education for all children, because education can teach them essential skills needed to work, and help raise themselves out of poverty (World Bank, 2016c). Research indicates a relation between education and income (World Bank, 2006). In his research into poverty reduction in the Middle East and North Africa Region, Iqbal Farrukh (2006) confirms the findings of the World Bank, noting that there was no exception in any of his cases. A detailed analysis shows that the level of poverty is higher within a household with illiterate persons and that this level steadily decrease when the education level increase. His case study of Egypt showed that an individual's chance of being poor declined from 24 percent for uneducated people to just 2 percent for people that went to university. It can be expected that a higher level of education will reduce the poverty level in a country, and will positively affect the relationship between member-based organizations and poverty reduction.

Overall, member-based organizations can be an instrument for poor people to escape poverty. This leads to the expectation that rising amounts of people aligned with a member-based organization positively affect the poverty rates in a country. However, the effect member-based organizations have depends on the specific context in which they operate. It can be expected that a higher level of rule of law and freedom of association, along with a lower level of corruption in a country will result in member-based organizations with a higher effectiveness against poverty. Therefore, these are the elements that will form the foundation for the hypotheses of this research. An overview of the hypotheses can be seen in Table 1.

Table 1: Overview hypotheses

Hypothesis	Description
H1	The higher the level of member-based organizations is, the lower the level of poverty in country is.
Enabling environment	
H2a	A higher level of rule of law, the lower the level of poverty in a country.
H2b	The effect of member-based organizations on poverty reduction will be higher when a country has a higher level of the rule of law.
H3a	The higher the level of freedom of association is, the lower the level of poverty in a country.
H3b	The effect of member-based organizations on poverty reduction will be higher when a country has a higher level of freedom of association and expression.
H4a	The lower the level of corruption, the lower the level of poverty in a country.
H4b	The effect of member-based organizations on poverty reduction will be higher when a country has a lower level of corruption.

3. Methodology & Data

This chapter explains the methodology and data used in order to answer the research question: Is there an effect of contextual factors on the relationship between member-based organizations and poverty reduction in developing countries? The review of the datasets that have been used is followed by the operationalization of the variables. After that the research design is discussed, and a separate section will elaborate on the missing cases in this research.

3.1 Data

It is important to review the databases from which these indicators are retrieved. In this section the data used for the purposes of this research will be analyzed further, such as sample size, representativeness, reliability, and missing values. For this research several datasets are used from different sources, which all are discussed separately. Since this thesis also includes an analysis over time the dataset is constructed over a time period of 1995-2014. First to be outlined is a review of the data used for the dependent variable, followed by the data for the independent variable and finally the same for the control variables.

3.1.1 Dependent variable poverty

The dependent variable in this research is poverty. This variable is measured by using an indicator from the World Bank, The World Development Indicators. The World Bank has poverty data collected with the use of more than one thousand household surveys across 131 developing countries, and 21 high-income countries for the indicator. At the time of this research, the data has measurements ranging from 1985 until 2015, from a broad scale of countries. These are collected from "analytical reports, national poverty monitoring programs, and from the World Bank's Development Research Group" (World Bank, 2016d). For the measurements of 2012, over two million randomly sampled households were interviewed. The data on poverty of the World Bank is representative of the populace across the countries (World Bank, 2016e).

This dataset of the World Bank is used, because it is the most comprehensive dataset over a longer time period. Other databases are not yet as extensive, such as the Multidimensional Poverty Index of the United Nations Development Reports, which was first published in 2010 (UNDP, 2016), or are not as suitable, such as the Organization for Economic Co-operation and Development's poverty dataset, which includes only the members of its organization, which are mostly advanced countries (OECD, 2016a). However, some criticize the dataset of the World Bank for the use of surveys, which could be inadequate regarding the consistency in which they are performed. Apart from that, the indicator does not have complete measurements for every single country for every year in the period 1995 until 2014. Nevertheless, at the moment this database is still the most comprehensive framework over time that includes developing countries.

To anticipate these missing values within this database and to create the possibility to include as many observations of the other variables, this research will create a second dataset of

poverty which is based on the dataset of the World Bank, but uses the statistical technique of linear interpolations to compensate for the missing values. Poverty is a phenomenon that develops over time that has been specifically targeted by one of the World Bank's long-term goals (World Bank, 2013a). Since it changes with small percentages per step¹, linear interpolation can be useful. For each linearly interpolated value a plot has been made in order to determine if the result was linear in value. In the cases that it did, any missing values were given a value based on the linear increase or decrease. Only in a few cases did the plots not show a linear result on the whole period from 1995-2014, but rather showed a tendency that made it reasonable to expect whether the line was decreasing or increasing on a smaller period of time. In such cases where it was not reasonable to observe whether the results were linearly increasing or decreasing, the missing data points were not given a value. This is the reason that the linear interpolated data sets still hold a number of missing cases. Important to keep in mind here is that member-based organization was the leading factor in the decision to create linear interpolated data. With the original dataset there were not many cases that presented values for both poverty and member-based organizations. This is a small bias, however since the technique of linear interpolation has accounted for those missing data points that were beyond reasonable doubt, it should not bias the results of the research.

3.1.2 Independent variable member-based organizations

For the independent variable of member-based organization, the data of the World Value Survey (WVS) is used. The WVS applies a minimum sample criterion of 1000 within a country and it's selected from the entire population of 18 years and older. According to the World Value Survey, stratified random sampling ensures a representative national sample. When they have gathered a representative national sample of people, the interviews are held within a previously determined time frame with uniformly structured questionnaires (WVS, 2016a). The World Value Survey has had six waves in total: 1981-1984, 1990-1994, 1995-1998, 1999-2004, 2005-2009, 2010-2014 (WVS, 2016b). Since the first two waves do not include a great amount of countries and lack consistence in their setup, this thesis uses the last four waves. Thus it includes the waves of 1995-1998, 1999-2004, 2005-2009, and 2010-2014. These waves have observations of 61 countries. In a period of four or five years, one measurement moment is selected. Using the Integrated Value Survey of GESIS from the Leibniz Institute for the Social Science (GESIS, 2014), it is possible to determine in which year the World Value Survey took their measurements.

There are some considerations, since the surveys are not performed every year and the countries included in the studies are not always consistent, resulting in a lot of missing cases. Nevertheless, this is the only database that permits cross-country comparison, since thousands of individuals over the world conduct a survey containing the question whether or not they are member of an organization. Because the aim of this study is to do a cross-national research containing exactly that data, this dataset is suitable.

¹ The histogram of the poverty estimated on the original dataset shows these small percentages, since there is a high frequency around the zero. (see Figure 3.1. in Chapter 4).

3.1.3 Context variables

The first context variable is *rule of law*. This variable is retrieved from the World Wide Governance Indicators, which are based on four different data sources; “surveys of households and firms, commercial business information providers, non-governmental organizations and public sector organizations” (Kaufmann, Kraay & Mastruzzi, 2010). Rule of law is one of the six aggregated indexes and is based on hundreds of variables on the individual level stemming from a comprehensive range of data sources. The sample size for each of the countries is representative and is updated every year (Kaufmann, Kraay & Mastruzzi, 2010). Within the period 1995-2014 there are no measurements on this variable from the years 1995, 1997, 1999 and 2001, but over the whole period enough cases can be found (World Bank, 2016f). There is another database that can be used for examining rule of law, The World Justice Project. This database provides observations from 102 countries around the globe (WJP, 2016). Still, the World Wide Governance Indicators of the World Bank is used as the main source, because The World Justice Project has observation starting from 2012, which give not the opportunity to analyze the effect of rule of law over a time period longer than three years. Considering this, The World Wide Governance Indicators of the World Bank is more preferable.

The second context variable is *freedom of association* for which this thesis uses the dataset from the Freedom House Index. Freedom House has an annual measurement, held since 1973. It has ratings regarding associational and organizational rights for 195 countries (Freedom House, 2016a), which makes it a comprehensive database on the subject political and civil freedom. Each year a team of analysts prepares draft reports and scores based on multiple sources, for example new articles or academic analyses. These proposed scores are discussed in an annual meeting and the final scores represent the consensus among analysts. For this research it measures perfectly how and to what extent laws and rights are implemented by the government, rather than simply noting whether they exist or not. In this way, it gives a good indication of the level of freedom of association (Freedom House, 2016b). However, there are some considerations. This index can hold a collective subjective bias of the analysts, although Freedom House states that their procedures in order to score a country on the scales are reliable. Another consideration is that there are only measurements on the sub-scores from 2006, which decreases the observations tremendously².

The last context variable is *corruption*. In this thesis it is measured using data from the Corruption Perception Index. These are measurements from 1995 till 2015 including over 114 countries (Transparency International, 2016b). The Corruption Perception Index is composited from different corruption indicators. Since these different sources use different scales, the data needs to be standardized before it can be transformed into one CPI score. This thesis uses only data from 2012 onward, as the CPI had undergone a change in methodology. Transparency International (2012) state that previous editions of the index are not comparable over time anymore. The World Bank’s World Development Indications also has an index for corruption, starting from 2005 (*CPIA transparency, accountability, and corruption in the public sector rating*), which measured to which extent executive functions and branches can be held accountable (World Bank, 2016g). The World

² Beforehand the descriptives and models were estimated with this index in order to determine if there were enough cases. This was found positive

Bank a far narrower concept of corruption than the Corruption Perception, which measures “how corrupt a country’s public sector is perceived to be” (World Bank, 2016g). This is more suitable for this thesis as the aim is to estimate the effect of corruption on member-based organizations and poverty, instead of the public sector. Another advantage of the CPI compared to the data of the World Bank is that the latter has more missing values, even if for the former only the measurement form 2012 are included.

3.1.4 Control variables

The first control variable is *income inequality*, which is examined with the use of the World Development Indicators from the World Bank. This data is collected by the World Bank Development Group, and is collected with the use of household surveys. It consists of more than one thousand household surveys spread across 131 developing countries, and 21 high income countries (World Bank, 2016h). These surveys are obtained from government statistical agencies and the local departments of the World Bank. Whenever the original data were available they estimated the income shares per quintile. Otherwise, the researchers used the best available grouped data. The World Bank did adjust the income inequality data for household size, which makes the measurement more consistent. The World Bank underlines the difficulties of comparing the income inequality indicator across countries or across longer periods of time within the same country. However, the World Bank states that the data is adjusted in order to ensure that it is comparable across countries over time (World Bank, 2016h). The comprehensive amount of observations makes this a preferable dataset for this thesis.

The second control variable is *economic growth*, for which the World Development Indicators database is used in order to estimate its effect. This indicator is derived from the same database as the variable poverty. As mentioned previously, this database enables cross-national comparison, since there are many countries included. The World Bank uses their own World Bank National Accounts data and the OECD National Accounts data for this variable. There are a few missing values, but not to such an extent that it affects the variable directly. The accuracy of the World Bank in constructing this variable and its large sample size, make this variable representative (World Bank, 2016i), however the World Bank acknowledges that there are some limitations accompanying this dataset. First, it is possible that the indicator Gross National Income underestimates the effect of the lower-income economies, since those economies rely on informal activities to a greater extent. Secondly, it does not reflect the inequalities in income distribution. The latter limitation does not apply to the purposes of this research, since income inequality is one of the control variables (World Bank, 2016i). The first limitation however is important to keep in mind, as this was also one of limitations concerning member-based organizations, which had to keep in mind that it is hard to reach poor people in the informal sectors.

The third control variable is education, the data for which is also obtained from the World Development Indicators from the World Bank. They receive this data from UNESCO Institute for Statistics. (World Bank, 2016j). This institute uses household surveys from Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) (UIS, 2016). They use multiple sources for constructing this variable in order to be as representative as possible. When there are fewer than 25 instances for a given observation, they give the observation no score (UIS, 2016). A criticism on this index is that it is based on annual school surveys, which do not indicate

to what extent children actually attend school or how many children drop out of school. Despite that, this database is consistent in their measurements, so there are not many missing cases. Although there are no observations for Brazil, there is another database available to fill the gap. The OECD has a dataset on education, including only the 45 OECD countries and partner-countries (OECD, 2016b). Overall, in order to measure education the World Development Indicators are preferable.

3.2 Conceptualization and operationalization

3.2.1. Dependent variable poverty

Conceptualization

It is important to have a clear definition of poverty and to understand as a researcher what poverty means, as there is not one ubiquitous definition of the concept. In order to know what poverty is, consider who is asking the question and who is answering it. Hanisch (2016, p. 54) gives an overview of the existing categories and indicators within the literature. He also states that there are five different perspectives on poverty. The *resource concepts*; where poverty is conceptualized as absolute poverty, based on human needs by means of an absolute minimum of income, often having one US Dollar per day as benchmark (Ravallion, Chen & Sangraula, 2009). Next, the *capability approach*, retrieved from Sen (1993), which defines poverty based on people's capabilities. These first two categories Hanisch (2016) depicts are in line with the clusters used by the United Nations Development Program, but the rest differ. The next category he describes is the *core dimensions approach*, a framework from the Development Assistance Committee of the Economic Co-operation and Development that identifies the fundamental aspects of poverty, such as the sociocultural dimension. The following category, the *perspective of the poor*, is proposed by the World Bank and includes three origins of poverty as emphasized by the poor themselves (World Bank, 2001). The last category specifies the *multiple dimensions of deprivation*, from the Oxford Department of International Development in collaboration with UNDP, including three categories of human deprivation; health, education and living standards (Alkire and Santos, 2010). Similar to the proposition made by Hanisch, the United Nations Development Program (UNDP) has clustered the perspectives into similar five categories (UNDP, 2006). Important to note is that some researchers use the term pro-poor, insinuating a situation in which, relatively speaking, poor people benefit more than others (Deolalikar, Brillantes, Gaiha, Permia and Racelis, 2002, p. 8). It can be said, that the dimensions and perspectives on poverty have widened.

Operationalization

In this research poverty is operationalized using an indicator from the World Bank Index. The World Bank uses two different thresholds in measuring poverty. They have the national poverty line, which bases the national estimation on population-weighted subgroups gathered from household surveys (World Bank, 2016k). The difference between the national and global poverty lines, is that the global poverty line defines poverty on monetary values, and the national poverty as the concept defined by the countries themselves, such as specific circumstances and institutions

(Gentilini & Summer, 2012, p. 7). According to the World Bank the national poverty line reflects whether “the person’s minimum nutritional, clothing and shelter needs cannot be met in that country” (World Bank, 2015k). They see the concept of poverty as being locally defined. Gentilini and Summer (2012, p.7) state that “national poverty has a high potential to capture the state of poverty, because they are based on locally defined poverty”.

The global poverty line, defined by the World Bank, is “the percentage of the population that is living on less than \$1.90 a day, based on the international prices set in the year 2011” (World Bank, 2016k). According to the World Bank a global poverty line has an advantage in that the “national and local poverty lines show a higher purchasing power in rich countries, since more generous standards are used than in poor countries” (World Bank, 2016k). Another important aspect of the global poverty line is that it gives researchers the possibility to analyze poverty across countries. The different price standards in the countries are factored out, because the percentages of a given population living on less than \$1.90 a day is benchmarked by international prices and not by local prices. Since this research is cross-national the global poverty line is chosen.

The indicator that uses the global poverty line as starting point, the ‘poverty headcount ration at \$1.90 a day,’ is the percentage of the population living on less than \$1.90 a day at the international prices set in 2011 (World Bank, 2016k). These prices are also known as the Purchasing Power Parity rates, or PPP rates. This indicator measures on an interval scale from 0 to 100 percent, with a higher score on the scale denoting a higher amount of the population living on less than \$1.90 a day. Because the measurement has changed in 2015, in order to update the international prices the World Bank have superimposed the new prices over the estimates of previous years. This enables users of the data to examine the developments in poverty reduction in the world over the last 25 years (World bank, 2015l).

3.2.2 Independent variable member-based organizations

Conceptualization

This research focuses on the institutional terrain of member-based organization. These organizations are defined as “those where the members elect their leaders and which operate on democratic principles that hold the elected officers accountable to the general membership” by Chen et al (2006, .p 3). The authors distinguish between member-based organizations and member-based organizations of the poor, where the latter means “that the vast majority of members are poor, although some non-poor persons may also be members” (Chen, et al., 2006, p. 3). Member-based organizations share a commitment to change the circumstances of their members with less prospect through collective action. Member-based organizations are defined as:

Organizations that members control and partially or fully finance and whose membership exhibits the following characteristics: they have joined on a voluntary basis, they have agreed to work collectively to achieve objectives, they have agreed upon and engage in their own decisions-making process, they provide financial contribution as a condition of membership. (Chen, et al., 2006, p. 5)

Member-based organizations vary in their structure from other non-governmental organizations. This is in two ways. First in their democratic governance structure, because their leaders are elected (*internal accountability*), and second their leaders represent their community (*external legitimacy*) (Chen, et al., 2006, p. 3). The form that member-based organizations take can range from trade unions, cooperatives, self-help group, employers' organizations, etc., whether legally registered or not.

In order to avoid the opportunity to include a wide-ranging type of rural organizations, and claim the representation of millions of members, Thorp, Stewart and Heyer (2005, p. 909) have defined a functional approach of organizations. These can be market failures groups, such as producer associations, credit and savings groups or producer-owned processors pursuing economic objectives, claims groups with the primary focus of advancing its members' claims to power and/or resources, and empowerment groups, who seek to raise awareness about social demands and organize a political voice for its members. Still Chen et al. (2006, p. 3) state that member-based organizations can be defined by the fact that they share to have a commitment to collectively change the conditions of their members for the better.

Operationalization

This research uses the World Values Survey as an indicator for member-based organizations. This indicator uses data from a questionnaire regarding voluntary civil organizations³. The construction of independent variable consists of several choices. First of all, since this research focuses on three member-based organizations – agricultural cooperatives, labor unions and employers' organizations – only the categories of labor unions and professional associations are included. These different categories have to be constructed into one independent variable. The original data is based on percentages of the total number of respondents, which is representative for the population of the country. In several waves of surveys a difference is made between active membership and inactive membership (WVS, 2016b). This research uses both percentages, as it examines the relationship between member-based organization and poverty, rather than the level of activeness of the members. The average percentages of the numbers of labor unions and professional organizations are combined because of the high correlation between both⁴. Eventually, the resulting level of member-based organizations is measured on an interval scale of 0 to 100 percent, with 0 corresponding with a low level of member-based organizations in a country and 100 with a high level of member-based organizations.

It is important to note is that since there is a shortage of available data on member-based organizations, this research uses the membership measurement of the World Value Survey as a proxy with which to measure the level of member-based organizations. The individual respondents are asked whether they are member of several organizations, such as professional organizations or labor unions. The measurement is thus based on data gathered from an individual level, giving a

³ The categories are: "(1) church or religious organization, (2) sport or recreational organization, (3) art, music or educational organization, (4) labor union, (5) political party, (6) environmental organizations, (7) professional association, (8) humanitarian or charitable organization, (9) consumer organization, (10) self-help group, mutual aid group, (11) other organization. The respondents are asked whether they are active members, inactive members or have no membership per type of organization". (WVS, 2016b)

⁴ The Pearson coefficient is 0.730, which means that there is a strong relationship between both variables, and that a change in one variable strongly correlates with the other variable. This coefficient is significant with a p-value < 0.01.

good insight into the strength of member-based organizations in a country. As noted, the indicator from the World Value Survey is the best proxy available to measure member-based organizations in a country. Its samples are representative for the population (WVS, 2016a), and can be relied upon to give an accurate indication of how strong the member-based organizations are at country level, and hence the level of member-based organizations in a country.

3.2.3 Context variables

Rule of law

The first context variable is rule of law. The most complete and internationally accepted definition is that of the United Nations, who define rule of law as followed:

'It refers to a principle of governance in which all persons, institutions and entities, public and private, including the State itself, are accountable to laws that are publicly promulgated, equally enforced and independently adjudicated, and which are consistent with international human rights norms and standards. It requires [...] procedural and legal transparency.' (UN, 2011, p. V)

According to the World Bank there are multiple definitions for rule of law, depending on whether the emphasis lies on formal characteristics, substantive outcome or functional considerations. They commonly share "a formally independent and impartial judiciary, laws that are public, the absence of laws that apply only of particular individuals or classes, the absence of retroactive laws, and provisions for judicial review of government action" (World Bank, 2016b).

In this research rule of law is operationalized with an indicator of the World Wide Governance Index from the World Bank, which measures "the extent to which agents have confidence in and abide by the rules of their society, contract enforcement, police and courts, as well as their society's likelihood of crime and violence" (Rule of Law: Estimates) (World Bank, 2016m). Their estimation grants a country a score on the aggregated indicator, as measured on an interval scale from -2.5 to 2.5, with higher values on the scale corresponding with a better rule of law (World Bank, 2016m). This thesis uses this index, as it measures how people perceive rule of law, ergo how they experience it in daily practices, rather than measuring whether or not countries comply with their rule of law formally on paper. The World Wide Governance Index gives an actual representation of the performance of rule of law in daily practice.

Freedom of associations

Freedom of association is defined by many organizations. It is one of the core rights written down in the Universal Declaration of Human Rights, and also in various United Nations covenants. Several international organizations such as the ILO and Organizations for Security and Cooperation in European (OSCE) have also embedded this right in their agreements (Puddington, 2008). In 1999 the UN General Assembly (article 5) adopted a resolution where they defined freedom of association by claiming that:

Everyone has the right, individually and in associations with others, at the national and international levels (a) to meet or assemble peacefully, (b) to form, join and participate in non-governmental organizations, associations or groups, (c) to communicate with non-governmental or intergovernmental organizations” (UN, 1998)

Within this research this variable is operationalized with the index produced by Freedom House, utilizing the sub-score of associational and organizations rights. This sub-score contains three questions⁵ (Freedom House, 2016b). It is operationalized in this way, because this sub-score measures the freedom to organize that citizens have in a country. This is perceived as an essential foundation for member-based organizations (ILO, 2007, p.173). The measurement has an interval scale ranging from 0 to 12 points, with 0 as low associational and organizational freedom, and 12 as high associational and organizational freedom (Freedom House, 2016b). Important to note is that the data from this sub-score are only available from 2006 onwards. However, the 8 years’ worth of values for each country give a good indication of the level of associational and organizational rights and how they develop.

Corruption

The last context variable is corruption. The most often used definition of corruption is “the abuse of entrusted power for private gain”. It can be distinguished into grand, petty and policy corruption, depending on the scope and sector (Transparency International, 2016b). According to Shah (2006) there are four different forms of corruption. First, there is petty, administrative or bureaucratic corruption, where “individual public officials abuse their office in return for personal considerations” (Shah, 2006, p.4). The second form is grand corruption, where “a vast amount of public resources by state officials constitutes grand corruption” (Shah, 2006, p.4). The third form is state or regulatory capture and influence peddling. This means that private actors and public officials conspire to commit fraudulent acts. The fourth type is patronage/paternalism under the guise of being a ‘team player’, where officials is misused in order to provide support to clients.

This research measures corruption with the Corruption Perceptions Index (CPI) of Transparency International. This index scores countries based on how corrupt their public sector is perceived to be. There are measurements from 1995 till 2015 of over 114 countries. The scores are measured on an interval scale ranging from 0 – 100 points, in which countries scoring 0 are perceived as highly corrupt and 100 as being very clean from corruption (Transparency International, 2016a). Corruption is operationalized with this index since it use a broader concept, with is more accurate when used as a context factor.

As mentioned previously Transparency International has changed their methodology in the year 2012. In the years before 2012 they scored countries relative to other countries, but from 2012 onward they used the raw scores (Transparency International, 2012). The switch to raw data eliminated the possibility to convert this variable to a dummy variable. Consequently, this research only uses the Corruption Perception Index measurements from 2012 onwards, but these

⁵ The questions are: “(1) Is there freedom of assembly, demonstration, and open public discussion? (2) Is there freedom for nongovernmental organizations? (3) Are there free trade unions and peasant organizations or equivalents, and is there effective collective bargaining, or are there free professional and other private organizations?” (Freedom House, 2016b).

measurements do give a good indication of the level of corruption in a country. However this makes it hard to estimate this variable over time.

3.2.4 Control variables

The first control variable is income inequality. This research uses the GINI index of the World Bank, World Development Indicators, to operationalize this variable. The GINI index measures: "the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution" (World Bank, 2016h). It is measured on an interval scale from 0 to 100 points, with 0 indicating perfect equality and 100 being perfect inequality. The GINI coefficient has been measured in 248 countries and territories over 248 countries (World Bank, 2016h).

The second variable is economic growth, measured using an indicator from the World Development Indicators of the World Bank. The Gross National Income (GNI) Annual Growth indicator is used in this analysis. This indicates the annual percentages of growth of a country's Gross National Income. The GNI is measured as: "the sum of values added by all resident producers plus the product taxes that had not been included in the valuation of output, plus the net receipts of primary income" (World Bank, 2016i). It is measured on an interval scale ranging from 0 to 100 percent. However the estimation of output including net earnings of primary income from abroad is not included. There are measurements from 1981 to 2015, over 248 countries and territories (World Bank, 2016i).

The third variable is education. In order to measure this there an indicator from the World Bank's World Development Indicators is used; Net Enrollment Rate Primary Both Sexes, which indicates the ratio of a population's children enrolled in school after reaching their official school age. These children can later on participate in secondary education (World Bank, 2016j). The number is constructed by dividing the number of students that have reach the official school age and are registered in a primary school by the population of the age group eligible for primary education. This rate is multiplied by 100, so this variable can be measured on a 0 to 100 points interval scale, with 0 as indicating a low rate of education and 100 a high rate. There are measurements ranging from 1962 to 2015 (World Bank, 2016j).

All the control variables are measured with an indicator from the World Bank's World Development Indicators as this database includes over 248 countries and covers the complete period on which this research focuses.

3.3 Research design

This thesis uses a quantitative research design with a focus on macro level, which is unique within the domain of member-based organization. Since many previous researches have been done with more in-depth cases studies. As aforementioned the aim is to sketch a bigger picture of member-based organizations and their effect on poverty, and what the influence of context is on this effect. In order to perform a quantitative research several different statistical techniques are used. In this section these techniques will be discussed along with the justification for using these models. The analysis in the next chapter is constructed step by step.

3.3.1 OLS regressions

First, the data will undergo a bivariate analysis in order to determine the relationship between the dependent variable, poverty reduction, and the independent variable member-based organizations. This will be the analysis that tests the first hypothesis (H1). After this the context variables are analyzed. This will be done with the use of an Ordinary Least Square (OLS) regression, which produces 'always the best set of linear predictions for a given set of data' (Allison, 1999, p. 13). For each of the context variables, rule of law, freedom of association, and corruption, the OLS regression is calculated. This kind of regression method is preferable since the expected effects are assumed to be linear. Another reason is that it gives a good insight in the relationship of each separate independent variable with the dependent variable (Allison, 1999).

First the context variables are estimated as direct effects on poverty, in order to test the hypotheses H2a, H3a and H4a. After that the context hypothesis are examined, testing the context variables as interaction variables, with the aim to estimate the effect of context variables on the relationship between member-based organizations and poverty reduction. An interaction variable can estimate the amount with which the effect of the independent variable can increase or decrease (Allison, 1999, p. 167). These regressions are used in order to test the context hypotheses (H2b, H3b and H4b). However, an OLS regression is based on several assumptions that need to be tested first: linearity, mean independence, homoscedasticity, uncorrelated disturbances and normal distribution (Allison, 1999, p. 122-123). These assumptions will be attempted to be proven in the next chapter, before the linear regressions are tested. The following section recalculates the bivariate analyses and OLS regression with the control variables income inequality, economic growth and education included in its parameters. Note that caution is advised when adding these variables, as it is possible that they eliminate too many cases for there to be a significant amount left on which to test the observations.

All the OLS regression models will be checked on their 'robustness', a check to see how the regression coefficient behaves when the regression specification is adjusted, or by omitting and removing coefficients. If the coefficients do not change by any significant amount, this is often seen as evidence that the coefficient can be interpreted as a true causal effect (White & Lu, 2010, p.1). The robustness is checked using two mathematical instruments, the White test for heteroscedasticity and the robust standard errors. As Stock and Watson (2006, p. 326) state, when 'a regression error is heteroscedastic its standard errors are not a reliable basis for the hypothesis test and confidence intervals'. The author's advice is to use the robust standard errors in order to solve this problem. To put it differently, when a regression model shows heteroscedasticity, but the variance of your error is independent from the covariates, there is no need to use the robust standard errors, as these will turn out similar to the standard errors. It can however be used as an extra check. The same cannot be said for OLS regression, however. An OLS regression assumes that the variance of the errors is constant, which is called homoscedasticity, but it can occur that the errors do not have this constant variance, thus are heteroscedastic. This can be a problem in the conclusions that are drawn from the models. There is the possibility that the OLS standard errors will be underestimated, where the robust standard errors will be higher. This will be true whenever the variance of the errors is higher, so when x is farther from the mean. Another way

around this problem can be present in cases where the variance of the errors supposed to be lower, meaning that the standard errors of the OLS regression are larger than the robust standard errors. Whether or not the OLS regression models are heteroscedastic can be examined with a White's test⁶, and for each model the robust standard errors can then be estimated. With these steps this research will evaluate whether or not the models are robust. After the OLS regression the models will be extended further.

3.3.2 Fixed effects model

Poverty is a phenomenon that is best analyzed over a longer period of time rather than within a one-year period. This perspective is also manifested in the goal and framework of the World Bank, which aims to end poverty by the end of the year 2030 (World Bank, 2015a). An OLS regression is an appropriate analysis to examine poverty over time, where the choice of the model with which to analyze developments over time depends on the type of data that is used. The type of data within this research can be classified as panel data. The data is cross sectional and takes place over time, as the data points are grouped per country, containing observations over a longer period of time – between 1995 and 2014. With panel data there are two models that can be used, the fixed-effects model or the random-effects model. The random effects model is suitable when differences across entities, in this case the different countries, influence the dependent variable poverty reduction (Torres-Reyna, 2007). However, it is not expected that differences across countries have an influence on poverty reduction over time or in general, which is why a fixed-effects model is more suitable as it examines the variables' changes within an entity. It allows to research variables across time, but not across entities. Variables within an entity determine the outcome, and the characteristics and changes within these are unique to each entity and should not be superimposed on other entities (Torres-Reyna, 2007). Applying these values to this research domain implies that the context variables of a given country can affect the relationship between member-based organizations and poverty reduction in the same country, but do not directly correlate with the variables of the other countries. To put it differently, this thesis estimates the change of variables within a country, but not across all the countries included in the study. It creates the possibility to research the influence of the context variables that are assumed to have an effect on the relation between member-based organizations and poverty reduction within a separate country over time, which is why this research uses the fixed-effect model. Not only is this model preferred theoretically, but the statistical testing done in this research finds the fixed effects model to be the most suitable. This statistical test in question, the Hausman test, examines whether or not the unique errors correlate with the regressors. The null hypothesis for this thesis was that they do not correlate, which would indicate that a random effects model was preferable for the purposes of this research, whereas the alternative hypothesis was that they do correlate, indicating a preference for a fixed effect model (Torres-Reyna, 2007). The Hausman-test showed a P-value of 0.0001, which means that the fixed effect model can be used.

⁶ A White's test with a p-values of <0.01, <0.05, <0.1 means that H0 is accepted, which entails that the model is homoscedastic. An overview of the outcomes of the tests for what these outcomes mean for each model can be found in Appendix 2.

The hypotheses will be tested again, over time using the fixed effects model. First the model will include only the variables member-based organizations and poverty reduction. This model estimates the effect of member-based organizations on poverty over time (H1). After that, each of the context variables will be tested as a direct effect on poverty in order to test hypotheses H2a, H3a and H4a. And after that, the interaction variable is tested as an effect on the relation between member-based organizations and poverty. This makes it possible to estimate the effect of the context variables on this relation over time (H2b, H3b and H4). And finally, the control variables are integrated into the model. Again, caution is necessary on account of the possibly limited amount of cases available due to the restrictions of all of the variables.

All the separate fixed effects models are tested for their 'robustness'⁷, in order to check if the coefficients can be classified as true causal effects. As mentioned earlier, the data is grouped per country, with each country's data including observations over time, which classifies it as panel data. With this kind of data, the statistical problem of the standard errors being underestimated can arise, as the regressions assume that the random parts of the observed outcome are treated as independent and are identically distributed within a cluster. But within clustered data some dependency exists between observations in the same cluster. These underestimations can lead towards a false rejection of the null hypothesis (Esarey & Menger, 2006). The models are all recalculated using the robust standard errors, which will alter the White 'sandwich estimator' that makes allowances for the dependence between observations inside a cluster (Esary & Menger, 2006). This check makes it possible to determine whether or not the models are robust and prevent false acceptance of the hypothesis.

3.4 Case selection

The aim of this study is to include as many countries from all over the world in order to increase the insight about the influence that contextual factors have on member-based organizations and poverty reduction. From the onset this study included 61 countries, a value determined by the independent variable, member-based organizations. Some of these had to be excluded however, due to missing variables. Whenever countries had no values for both the independent variable and the dependent variable, they were excluded from the research. The next criteria that was imposed on the data, was that there needed to be at least two observations on the independent variable. As explained in the data section, there is a small bias due to the fact that the case selection was founded on the independent variable member-based organizations. The dependent variable poverty also had to have at least two observations, with a second data set of the variable of poverty had been constructed with the use of linear interpolations in order to increase the number of cases that could be included in this research. After these selection steps, 38 countries⁸ remained that could be included in this research. Initially the prevalence of data on member-based organization had meant that the database also included wealthy countries, but since they had no observations on the poverty variable - since there was no percentage of the population living on less than \$1.90 a day,

⁷ This will be done with the same regression command in STATA, but then with `vce(cluster clustvar)` behind the command. Within in this research the cluster variable is countries.

⁸ Albania, Argentina, Armenia, Azerbaijan, Bangladesh, Belarus, Brazil, Bulgaria, China, Chile, Colombia, Estonia, Georgia, Ghana, Hungary, India, Jordan, Kyrgyz Republic, Macedonia, Malaysia, Mexico, Moldova, Morocco, Nigeria, Peru, Philippines, Poland, Romania, Russian Federation, Rwanda, Slovenia, South Africa, Thailand, Turkey, Ukraine, Uruguay, Venezuela, Vietnam

these countries were excluded from the list. Again, caution is advised concerning the amount of valid cases used in the analysis, which is why each model will list the exact amount of cases that could be used in its calculations.

4. Analyse

4.1 Descriptive statistics

This section discusses the most important descriptive statistics of the variables. First the dependent variable will be analyzed, followed by the independent variable and the context variables. Finally, are the control variables discussed. The descriptive statistics of all the variables are presented in Table 2.

[Table 2 here]

4.1.1 Dependent variable

The dependent variable measures the level of the population living on less than \$1.90 a day, based on the international prices (PPP) in 2011. The descriptive statistics are showed in Table 2. This variable has initially been measured using data without linear interpolations, followed by a measurement with the use of linear interpolations. The mean of the original – without linear interpolations – is 8,484 percent, which indicates that on average 8.484 percent of the population of the countries concerned survives on less than \$1.90 a day based on the international prices (PPP) in 2011. This variable has a high standard deviation of 12.382, thus the measured data is spread in quite a wide area from the mean. The lowest value is 0.001 percent and the highest value is 77 percent. Without the linear interpolations, the amount of cases missing from the equation is 438 compared to 378 valid cases. Figure 3.1 shows that the poverty variable does not have a normal distribution, but a tendency towards the right of the graph.

[Figure 3.1 here]

As Allison (1999, p. 154) argues, it is possible to use a variable with a non-normal distribution in research. He proposed several techniques, one of them being to confirm dependent variable. The most common transformation of the dependent variable is to take its logarithm. Although a logarithm solves the problem of non-normal distribution of the variable, the transformation alters the relationship between the dependent and independent variables. The linear model measures the effect of x on y in absolute change, but the logarithmic model “says that the effect of changing the X variable by one unit is to produce a certain percentage change in Y” (Allison, 1999, p. 154). Due to the fact that the variable poverty does not show a normal distribution, this research uses the logarithm of the variable. After transforming the variable, the distribution of the variable is more normally distributed, as seen in Figure 3.2.

[Figure 3.2 here]

The poverty variable with linear interpolations has a mean of 11.579, which means that on average 11.579 percent of the population in the countries concerned, has to survive on less than

\$1.90 a day, based on the international prices (PPP) in 2011. The high standard deviation indicates that values on this variable do not tend to be close to the mean. Similar to the original results without linear interpolations, the minimum value of the percentage of population living on less than \$1.90 a day is 0.001 percent and the maximum 77 percent (Rwanda in the year 2000). With the linear interpolations the valid cases is in total 438 cases. This goes to show that this variable does not have a normal distribution, as can be seen in Figure 3.3.

[Figure 3.3 here]

Since poverty is the dependent variable, and the aim of this research is to measure an effect on that variable, this widespread distribution can hamper the accuracy of the outcome. In order to control this, this research also uses the logarithm of the variable poverty based on linear interpolated data. The new distribution can be seen in Figure 3.4, and shows a near to perfect distribution.

[Figure 3.4 here]

4.1.2 Independent variable

The independent variable – membership of the member-based organization – is a proxy to measure the level of member-based organizations on macro-level. The descriptive statistics for this variable are shown in Table 2. As can be seen, the mean for this variable measures 13,184 with a standard deviation of 12,694. This tells us that on average the level of membership of member-based organizations in the countries is 13,18 percent. The high standard deviation indicates that the values on this variable do not tend to be close to the mean. The minimum level of member-based organizations in a country is 0,7 percent and the highest percent measured is 99,6 (Armenia in the year 1997). This measurement indicates that of the samples taken in Armenia almost everyone in the year 1997 had been a member with a labor union or professional organization, so the measured level for member-based organization was high. The missing cases for this variable number 714, which means that amount of valid cases is 102. As already explained in Chapter 3, these missing cases influence several other methodological steps. However, there is also an argument that says that it is still possible to analyze the effect this variable has on poverty reduction. The distribution of the variable has a skewness tendency towards the left, as shown in Figure 3.5.

[Figure 3.5 here]

Although it is preferable within regression analyses for all variables to have a perfectly normal distribution, particularly when there is a small sample size, in order to guarantee that confidence intervals and p-value to be accurate, Allison (1999, p. 131) states that not all variables need to have a normal distribution. Rather, he advises to be more conservative with the use and interpretation of p-values when researching small sample sizes. Within this mind, this research

includes the original variable of member-based organization and is more conservative with the p-values⁹.

4.1.3 Interaction variables

The first interaction variable is *rule of law*, which has been depicted on a scale ranging from -2.5 to 2.5, with 2.5 being a better rule of law in a country. As Table 2 shows, the mean of this variable is -0.246, meaning that countries average a score of -0.246 on rule of law. Remarkably, the average lies below 0. The standard deviation of this variable is 0.664, with a minimum score on rule of law of -1.890, which is the value of Venezuela in 2014 and the maximum score is 1.427, which is the case for Chile in 2014. The amount of missing cases, 208, is limited with this variable, since there are 608 observations of countries included in this research. Looking at the distribution of this variable, it can be classified as a normal distribution.

The second interaction variable is *freedom of association*, this variable is measured on a scale from 0 to 12, with 0 representing low associational and organizational freedom, and 12 as high associational and organizational freedom. As can be seen in Table 2, the mean score of this variable is 7.606, which indicates that countries score an average of 7.61 point on a 0-12 scale. It has a standard deviation of 3.294. The lowest score is 0, measured in Belarus in the year 2006, 2007 and 2008. The highest score is 12, scored by multiple countries. This variable has 343 cases, and 471 missing cases. Regarding the distribution, this variable cannot be classified as having a normal distribution, but is skewed to the right¹⁰.

The third interaction variable is *corruption*, which is measured aforementioned as a proxy with rule of law. To keep in mind, corruption is measured on a scale from 0 – 100, so countries with 0 are perceived to be highly corrupt and 100 to be very clean from corruption. As Table 2 shows, the mean score of this variable is 41, which indicates that on average countries score 41 points on the scale of 0-100 on corruption. The standard deviation of this variable is 12.970. The minimum score of corruption is 19, which is measured in Venezuela in 2012 and 2014, and the highest score is 73, measured in Chile in 2014. This variable has many missing cases, due to the methodological switch of Transparency International (2012). There are 701 missing cases and 115 valid cases.

4.1.4 Control variables

The first control variable is *income inequality*, which is measured on a scale from 0 to 100, with 0 indicating perfect equality and 100 implies perfect inequality. As can be seen in Table 2 the mean

⁹ It has been considered to convert the member-based organization variable to a logarithm. However, when estimating the model with the original variable and the logarithmic variable, it turns out that the strength of the model decreases with the logarithm of member-based organizations from 0.048% to 0.022% and the standard errors are lower in the models with the original variable. These outcomes have led to the decision favouring the original variable.

¹⁰ For the variable freedom of association the logarithmic distribution of the variable had been estimated, but it turned out not to be more normally distributed. The distribution was even more non-normal, which has led towards the decision to use the original variable.

of this variable is 39.822, which signifies that on average countries score of 39.822 on a scale from 0 – 100. The standard deviation of income inequality is 9.768, with a normal distribution. The lowest score is 16.23 and the highest 68. There are 408 valid cases, equaling the 408 missing cases. The second variable is *economic growth*, measured on a percentage scale from 0 to 100. The mean of the countries is 4.595 percent, showing that on average the countries have an economic growth of 4.595 percent. The standard deviation is 5.042 and the variable is normally distributed. The minimum result is -15.858 and the highest growth is 36.381. This variable has 714 valid cases and 102 missing cases. The third variable, *education*, is measured on a 0-100 scale. The mean of this variable is 90.860, which indicated that the countries score on average 90.860 percentages on a 0-100 scale. The standard deviation is 7.503. The minimum percentage is 59.447, which is measured in Ghana in the year 2001. The maximum percentage is 100, which is measured in Argentina in 1997. Regarding to the distribution of the variable education, it is skewed to the right.¹¹

4.2. Assumptions

4.2.1 OLS assumptions

An OLS regression is based on several assumptions that need to be tested first: normal distribution, homoscedasticity, uncorrelated disturbances, linearity and mean independence, in accordance with the work of Allison (1999, p. 122-123). These assumptions will be discussed in this section. First, there is the normality assumption. The previous section has mentioned that all variables are tested for their normal distribution, and when a variable is not normally distributed it is transformed into a logarithmic variable in order to anticipate its deviation. Furthermore, as Appendix 3 shows, the distribution term U that is used can also be classified as normal. The second assumption is homoscedasticity, which means that the random noise is always the same per variable (Allison, 1999, p. 126). As explained in the previous chapter, each model will be tested on homoscedasticity. The same accounts for the third assumption, that of uncorrelated disturbance, which is tested using the robust function for the OLS regressions and the cluster robust function for the fixed effects models. The fourth assumption is that of mean independence, which suggests that the independent variables are unrelated to the random disturbance U. Violations of this assumption can occur when independent variables are omitted, reverse causation exists, or measurements errors present themselves in the data of independent variables. Allison (1999, p. 125) states that a violation of this assumption is always possible when using non-experimental data, and that the only thing a researcher can do is include all independent variables in the dataset. This research therefore includes all variables that, based on the theoretical expectations, can have an influence on poverty reduction. The last assumption that needs to be checked is the linear relation. Non-linear relations can be included in the OLS regression, but the researchers would need to transform the independent variables in order to compensate for the non-linearity. This transformation has been done in the previous section.

¹¹ Also for the variable education the logarithmic distribution of the variable had been estimated, but it turned out not to be more normally distributed. Within this analyses the original variable is used.

4.2.2 Multicollinearity

There is one other important assumption, multicollinearity. When a multiple regression is used to examine a phenomenon, the possibility of the problem of multicollinearity occurs. Multicollinearity appears when the independent variables correlate too strongly with each other. This makes it difficult to estimate which of the independent variables explains the variation of the dependent variable. Multicollinearity can influence the outcomes and the derived conclusions. In order to check if the independent variables in this research correlate, a correlation matrix is performed after which the tolerance and VIF-values are estimated. For the variables to be designated independent of each other, the correlation between them cannot be higher than 0.8, the tolerance values cannot be lower than 0.40 and the VIF cannot be higher than 2.50 (Allison, 1999, p. 141). The results of the correlation matrix are presented in Appendix 4, and the results of the VIF and tolerance values in Appendix 5.

The correlation matrix shows that there might be too much correlation between rule of law and corruption. The value between the two is 0.775, which is near the limit of 0.8. Further examination with a correlation regression between only rule of law and corruption, yields a value of 0.925. The results of the multicollinearity test are in line with this finding, as it shows that corruption and rule of law do not meet the criteria for independence. Corruption has a VIF value of 2.95 and a tolerance value of 0.339. The same goes for rule of law, with a VIF value of 2.60 and a tolerance value of 0.385. These tests show that these two variables correlate too strongly with each other. This means that a change in corruption can imbue the same change in rule of law and vice versa. Therefore, this thesis uses rule of law as a proxy for corruption. By doing this, the models are more accurate, and since the high correlation (0.925) it creates the possibility to interpret the results of rule of law equally to the results of corruption. Another consideration is that the usable cases including data on rule of law are more comprehensive, numbering 608, compared to the 115 cases with data on corruption. When the variable corruption is not included in the correlation test, the VIF and tolerance values are all below the cutoff point. Important to keep in mind while analyzing the results is that, as formulated in the theoretical framework, the logic of how the effect establishes itself differs between the two variables. Rule of law is expected to have an effect due to the fact that it can enable people in organizations to hold executive powers accountable, while corruption is expected to have the effect of hampering people to organize at all. The other variables, member-based organizations and freedom of associations, meet the criteria perfectly.

In the following sections of this chapter the expectations that are formulated in the theoretical framework, the different kind of models are discussed and the outcomes which will be linked to the expectations.

4.3 Bivariate analysis

This section will elaborate on the bivariate model that consists of the variable member-based organizations and poverty reduction. The data will first be analyzed without linear interpolations

and subsequently with linear interpolations. The results of this bivariate analysis can be found in Table 3.

[Table 3 here]

Member-based organizations are expected to have a positive effect on poverty, so the assumption is that a higher level of member-based organizations equals a lower level of poverty in a country (H1). Important to keep in mind is that the expectation requires a negative coefficient. The first bivariate analysis will be on the data without linear interpolations, so Model 1 will consist of 50 cases. As Table 3 shows the coefficient¹² $\log 0,003$, which is a change in 0,316 percent. This means that an increase in member-based organizations with one unit has an increase in 0,316 percent in poverty. Put it differently, when the percentage of member-based organizations will increase with one unit, the percentage of the population that is living on less than \$1,90 a day at the international prices in 2011 increases with 1,226 per cent. It is remarkable that a positive effect is found, which means that member-based organizations have a negative effect on poverty, since a higher percentage of the population is living on less than \$1.90 a day. This coefficient is however with a p-value 0.964 thus not even close to significant. Model 3 in Table 3 shows that by using the robust function the standard errors are estimated lower, but leads not to different conclusions. This means that within these cases there is not a significant effect between member-based organizations and poverty found, so no support of the expected effect (H1).

The effect of member-based organizations on poverty is also tested on data with linear interpolations, presented in Model 3, which is based on 75 cases. As Table 3 shows the coefficient is $\log 0.037$, which is a change in 3.824 percent. This means that when the member-based level increases with one unit it results in an increase of 3.824 percent in poverty. To put it more succinctly, when the level of member-based organizations increases with one percent, the percentage of the population living on less than \$1.90 a day increases with 3.824 percent. This is identical to the non-linear interpolated data. However, the difference is that the regression on the linear interpolated based data shows a significant coefficient, which is not in line with the expectations of this thesis' first hypothesis. However, are the results robust? The White's test shows no sign of heteroscedasticity in the model, but when the model is executed again using the robust function the effect of member-based organizations estimated on the linear interpolated data is even more significant with a p-value < 0.05. This can be seen in Model 4 in Table 3. Overall, member-based organizations have an effect on poverty, but it turns out that the effect on poverty is not positive but negative.

¹² The log-coefficients in the research are transformed with the following function in order to convert them into percentage changes: $100(e^b - 1)$, with B as the log coefficient. The coefficients presented in the tables are based on the logarithmic scale, but in the analyses they are transformed.

4.4 OLS regression and context variables

The following section will analyze the context variables rule of law, corruption and freedom of associations. These variables are initially estimated as a direct effect and after that as an indirect effect, an interaction variable. For both the direct effect and the indirect effect, the analysis will be executed on the original data but another analysis will focus on the linear-interpolated data. Lastly, robustness checks will be performed on both models with the direct and the interaction variables.

4.4.1 Rule of Law

In this section the effect of the first context variable rule of law is examined. First as a direct effect and then as an interaction effect. Since rule of law is a proxy for corruption the results will also be linked to the effect corruption might have on poverty and on the relationship between member-based organizations and poverty (as formulated in the hypotheses H4a and H4b).

Direct effect rule of law

First the models will be performed on the original data, without linear interpolations, a set of 46 cases. The expectation is that rule of law has a positive effect on poverty, similar to the expected inverted relation of member-based organizations, meaning that when rule of law increases the poverty level will decrease. The results are presented in Table 4.

[Table 4 here]

As can be seen in Table 4 rule of law a direct effect on the poverty level in a country. Estimated without linear interpolations, rule of law has a log-coefficient of -1.593, which entails that when rule of law increases with one unit on the scale of -2.5 to 2.5 poverty, the percentage of population that lives below the poverty line decreases by 79.784 percent. This effect is even larger, when analysing the data with linear interpolations, showing a log-coefficient of -1.704, which entails a decrease in poverty of 81.804 percent per unit of rule of law. These effects are significant, with a p-value <0.01. This supports the expectation of hypothesis H2a.

Following these results, member-based organizations can now be included in the model. First, the models are estimated using the original data. As Model 2 in Table 4 shows, the effect of rule of law has a direct effect on poverty. The coefficient of rule of law is log-1.240, signifying a change of -71.071 percent. This means that an increase in rule of law by one unit on the -2.5 to 2.5 point scale leads to a decrease in poverty of 71.071 percent. This coefficient is significant, bearing a p-value <0.01. It is expected that for member-based organizations a similarly negative relationship will be found. Model 2 shows that the coefficient for member-based organizations is log0.016, which is a change of 1.597 percent. This means that an increase of one unit of member-based organizations actually increases the percentage of population living below the poverty line by 1.597 percent. The coefficient is not significant however, so no effect can be found in this model.

Furthermore, the model can be classified as robust. The White's test shows no signs of uncertainty within these estimates, since the outcome of the test leads towards rejecting the hypothesis for heteroscedasticity. This is in line with Model 3 in Table 4, which shows that there is a small difference in the standard errors and the robust standard errors. The standard errors are estimated to be higher than the robust standard errors. The effect of rule of law on poverty shows an even more significant effect with the robust function, but there are no noticeable differences for member-based organizations.

When the models are extracted from the data with linear interpolations, there are slightly different outcomes. The OLS regression, in which member-based organizations as well as rule of law are included, is now based on 63 cases. The same results as the previous data are expected, which would be that rule of law has a positive effect on poverty. An increase in rule of law is expected to decrease poverty. The results of this analysis are also presented in Table 4.

Estimated without linear interpolations, Model 1 shows a log-coefficient of -1.704 for rule of law, which entails that when rule of law increases with one unit on a scale of -2,5 to 2.5 poverty decrease with 81.805 percent. This effect is significant, with a p-value <0.01. As can be seen in Model 2, member-based organizations have a significant effect on poverty. The coefficient in this case is positive, where it was expected to be negative. The log-coefficient of 0.054 means that an increase of one percentage unit in member-based organizations, increases the percentage of the population living under the poverty line of \$1.90 a day, by 5.506 percent. Compared to the non-linear interpolated data, the estimated increase in poverty is higher. When looking at rule of law, Model 2 shows a log-coefficient of -1,608, which means a change of -79.977 percent. This signifies that when the rule of law increases with one unit on a -2.5 to 2.5 scale, the percentage of people living on \$1.90 a day or less decreases by 79.977 percent. This effect can be labeled significant, with a p-value of less than 0.001. The White's test does not yield concerns about the estimates, as it concludes that the model is homoscedastic. When the model is executed again using the robust function, a small difference in the robust standard errors of member-based organizations emerges, but the standard errors for rule of law remain the same (see Model 5). Renewed estimation produces no other conclusions, so the results can be classified as robust.

Interaction effect rule of law

The rule of law context variable shall now be tested as an interaction effect, which can decrease or increase the effect of the independent variable (Allison, 1999, p. 166). As formulated in hypothesis 2b, the expectation is that the effect of member-based organizations on poverty reduction will be higher when a country has a higher level of the rule of law. The assumption is that there is negative relationship between member-based organizations and poverty, and that this relationship will increase along with the level of rule of law. In other words, when the level of member-based organizations increases the level of poverty will decrease, even more so when the level of rule of law in a country increases. First, the models will be executed using the original data set, without linear interpolations, which consists of 46 cases. Following that it will be performed on the linear interpolated data set that contains 63 cases.

As Table 4 Model 4 shows, the coefficient of member-based organizations as an interaction effect has turned out to be positive, which was not expected. The table has a log-coefficient of 0.019, which means that when the level of member-based organizations increases with one unit, the poverty level increases as well, with 1.990 percent. The coefficient is smaller than that of the model in which rule of law had been treated as a direct effect. The interaction variable shows a positive coefficient, of log0.0183, which means a change in percentage of 1.851. However, this effect is not statically significant. Therefore, while an increase in rule of law does have a positive effect on the relationship between member-based organizations and poverty, the effect is not even close to significant. As to the robustness of these estimations, the White's test shows no heteroscedasticity, and the standard robust errors in Model 5 shows no large differences for the majority of the included variables. Only the level of rule of law as a direct variable has robust standard errors that are lower than estimated when compared with the standard errors and can be deemed significant, with a p-value $<0,1$.

When the models are performed on the data with linear interpolated data, some differences show up in the estimates. The effect of member-based organizations is significant with a p-value <0.1 . Its log-coefficient, as Table 4 Model 4 displays is 0.055, which means a change in percentage of 5,658 percent. When member-based organizations increase with one unit percentage, then the level of people living on less than \$1.90 a day increase with 5.658 percent. This data also shows a positive coefficient for the interaction variable at 2.377 percent change, but this is not significant. Once the model is estimated with the robust standard error function however, the effect of member-based organization on poverty is significant, having a p-value of less than 0.01. Furthermore, it can be said that the standard error to be estimated higher when compared to the robust standard error. The White's test also turns out positive, showing that heteroscedasticity does not bias the model. However, these differences have no consequences to the conclusions extracted from the results of the models.

To sum up, rule of law has a direct effect on poverty, both on the non-linear interpolated data and on the linear interpolated data with a significant p-value <0.01 . When the level of rule of law increases the level of poverty decreases, which is in line with hypothesis 2a. Only on the linear-interpolated data, an effect of member-based organizations on poverty is found. Although this effect was expected to be negative, a significant positive effect was found. It turns out that where member-based organizations increase in the level of poverty, the percentage of population living below the poverty line of \$1.90 a day increases.

The expectations formulated in hypothesis 2b, that rule of law has a positive effect on the relationship of member-based organizations on the level of poverty, are not supported by the data found in the models. As discovered in the linear interpolated data, there is a significant effect of member-based organizations on the level of poverty, when the interaction variable is included. However, this effect is also not what was expected. Furthermore, there is no evidence shown by the models that rule of law has an effect on this relation, thus the interaction variable in this instance is not significant.

Since rule of law is a proxy for the effect of corruption the results also indicate that corruption has a direct effect on the reduction of poverty (H4a). When corruption increases by one unit on a scale of 0 to 100, with 0 as being highly corrupt, the level of poverty decreases. It also

shows that the effect of corruption on the relationship between member-based organizations and poverty is not supported by the data (H4b).

4.4.2 Freedom of Associations

In this section the effect of the second context variable, freedom of associations will be examined. Similar to the previous variable, it is first analyzed as a direct effect and then as an interaction effect. The results of the different models are presented in Table 5.

[Table 5 here]

Direct effect freedom of association

This analysis starts by estimating the effect of freedom of association on the data without linear-interpolations. First the effect on poverty is estimated in order to get a good insight of what the effect of freedom of associations on the dependent variable is. It is to be expected that when freedom of association increases the level of poverty decreases (H3a). As can be seen in Model 1, freedom of associations has a statistically significant direct effect on the level poverty. The coefficient is negative, log -0.180, which means that when the level of freedom of associations goes up one unit on the 0-12 scale, the percentage of population living under the poverty line decreases with 17.935 percent.

When the variable member-based organizations is included in the model, the effect changes. The amount of cases included also changes, dropping from 167 cases to 31 cases. Both for freedom of association as well as for member-based organizations no significant effect is found. Similar to the previous subject, this model shows a positive coefficient for member-based organizations, and not the expected negative coefficient. A negative coefficient is found for freedom of associations, which is in line with the expectation that when freedom of association increases the level of poverty decreases. The tests performed for the robustness of the model give no reasons for reevaluating the conclusions. As Model 3 shows there is hardly any difference between the robust standard errors and the standard errors, and the White's test also shows homoscedasticity in the model.

Dissimilar effects are found when the models are executed on the data with linear interpolations. A model that includes 42 cases. The direct effect of freedom of association on the level of poverty is still significant, but when the member-based organizations variable is included, differences appear. The effect that member-based organizations have on the level of poverty is significant, with a positive log-coefficient of 0.082 and a p-value<0.05. This means that when member-based organizations increases with one percentage unit, the percentage of the population living below the poverty line of \$1.90 a day increases by 8.497 percent. The effect of freedom of association in this multiple OLS regression is not significant. Regarding the robustness of the models, the White's test finds no heteroscedacity in this model. But, when this model is tested with the robust function, the results are different. The standard errors in the OLS regression estimation are too high, while the robust standard errors are lower, which can be seen in Model 3 in Table 5. The consequences of these lower estimations are that in this model member-based organizations

are even more significant, showing the lowest p-value of 0.01. Similarly to the non-robust regression, the positive coefficient had not been expected. The effect of freedom of association is now significant at a p-value of 0.1 with a log-coefficient of -0.178, which is a change of -16,301 percent. This means that when freedom of association increases with one unit on the scale of 0-12, the percentage of the population that lives off of \$1.90 a day at the international prices of 2011 decreases by 16,301 percent. This effect is in line with the expectation

Interaction effect freedom of association

Next, this context variable is tested as an interaction effect. As formulated in hypothesis 3b, the decreasing effect of member-based organizations on the level of poverty is expected to be greater when a country has a higher level of freedom of association. This expectation assumes that there is negative relationship between member-based organizations and poverty, and that this relationship will increase with an increasing level of freedom of association. First the models will be executed on the original data set, without linear interpolations, which consist of 31 cases. After this it will be performed on the linear interpolated data that contain 42 cases.

To begin the models are estimated on the original data. As can be seen in Table 5 Model 4 no significant effects are found for member-based organizations. The interaction variable freedom of association has a positive log-coefficient of 0.023, which means that when the level of freedom of association increase with one unit, it will result in an increase of 2.327 percent on the effect member-based organizations have on the level of poverty. This positive effect meets expectations, but since the results are not significant it cannot be stated with certainty. The results are robust, since the White's test shows that the model is homoscedastic and when the model is estimated again using the robust function the standard errors are slightly lower. This does however not lead to other conclusions. The p-values are closer to significant, especially for member-based organizations, but still not statistically significant.

When the models are tested on the data with linear-interpolations, the results differ slightly. The log-coefficient of the interaction variable freedom of associations is now negative, at -0.154, meaning that when the level of freedom of association increases with one unit it has a negative effect of -14.284 percent on the effect that member-based organizations have on the level of poverty. But again not estimated significant. Similar to the previous models the coefficient of member-based organizations still defies expectation, returning a negative number, but these effects are not certain as none of the estimations are statistically significant. There are no signs that the estimations are biased, since the White's test refutes that and although the robust standard errors are estimated lower for the robust function than the standard errors in the OLS regression, it does not lead to different conclusions.

Overall, the results show that freedom of association has a significant direct effect on poverty, both in the linear and non-linear interpolated data. This supports the hypothesis of hypothesis 3a. Multiple regression tests with both member-based organization and freedom of association estimated on both datasets find a significant effect of member-based organizations on the level of poverty. The results show that member-based organizations increase the level of poverty. After

estimating the robust model, a significant effect of freedom of association on the level of poverty is found, as expected.

Looking at the expectation of hypothesis 3b, which assumes the level of freedom of association to positively affect the relationship between member-based organizations and the level of poverty, the results do not support the theory. Member-based organizations are shown to have a positive effect on the level of poverty instead the expected negative effect, albeit not significant. No significant evidence is found that the level of freedom of association has an influence on the relationship between the level of member-based organization and the level of poverty.

4.4.3 Corruption

In this section the effect of corruption, the third contextual variable, will be examined. As already mentioned in Chapter 3, the variables corruption and rule of law have too much correlation with each other, which is why corruption alone cannot be analyzed with the same setup as the other variables. The effect of rule of law is a proxy for the effect that corruption has on the relationship between member-based organizations and poverty reduction. This section will only analyze the direct effect of corruption, because it can give some interesting results. The model includes corruption as an independent variable and is based on the data with linear interpolations that consists of 29 cases. The same regression is performed on the data with linear interpolations which includes 34 cases. After that member-based organizations are included which consequently decreases the amount of cases. There are not enough cases to include the variable member-based organizations¹³ to yield any decent statistical outcome. For the other analyses the need for some caution arises with regard to interpretations and conclusions, since the amount of viable cases is low for statistical analysis. Table 6 shows the results of the models, first as a direct effect and second including the variable of member-based organizations, performed on the original data as well as on the data with linear interpolations.

[Table 6 here]

As Model 1 and Model 2 in Table 6 show, corruption has a direct effect on poverty reduction. On the original data with linear interpolations, a significant effect of corruption on poverty reduction is found with a log-coefficient of -0.055, which entails a change of -9.905 percent. When corruption increases with one unit on a scale from 0-100, with 0 being highly corrupt, the level of poverty decreases with -9.905 percent, so the percentage of population living below the poverty line of \$1.90 a day decreases by 9.905 percent. When this effect is estimated on the data with linear interpolations the effect is smaller. With a log-coefficient of -0.046 there is a change of -4.463 in the level of poverty. To put it differently, when corruption increases with one unit on the scale of 0-100, a change of -4.463 percent occurs that decreases the level of poverty, meaning the amount of the population living on less than \$1.90 a day.

Although the current data set does not allow for an estimation of the effect of corruption on the relationship of member-based organizations and poverty (H3), this section does conclude that there is a direct negative correlation between corruption and poverty.

¹³ Without linear interpolations there are 5 cases and with the linear interpolations 10 cases. Although the limited amount of cases and not included in this section, the model are performed and can be seen in Appendix 6.

4.5 OLS regression and control variables

There are other factors that correlate with poverty reduction. These variables are what we have designated as the control variables which, though they are not the focus of this research, are important factors to take into account as they have an effect on or correlate with the independent variable (Allison, 1999, p. 50). By adding control variables to the models it is possible to avoid bias in the analysis. This section introduces the control variables economic growth, income inequality and education into the equation. First the control variables are estimated as direct effects on poverty, after which they are included in the model with the other variables member-based organizations and poverty. Subsequently rule of law and freedom of association will be included. Caution is advised for this section as well, as it is important to keep in mind that the effects are extracted from a small number of cases, which must be taken into account when interpreting the results.

4.5.1 Direct effect control variables

It is expected that a higher level of economic growth, a lower level of income inequality and a higher level of education will have a positive effect on the level of poverty in a given country. To be exact, income inequality is expected to have a positive coefficient on the scale of poverty, so that a lower level of income inequality would coincide with a lower level of poverty. Furthermore, it is expected that there is a negative coefficient for economic growth and education, as higher levels of economic growth and education are predicted to decrease the level of poverty, meaning the percentage of population living below the poverty line of \$1.90 a day. The results are presented in Table 7.

[Table 7 here]

As the results of Table 7 shows, all the effect of the control variables on poverty reduction are significant. We notice that income inequality has a direct effect on poverty, with a log-coefficient of 0.113, which means that when income inequality increases with one unit on a scale of 0-100, with 0 signifying perfect equality and 100 perfect inequality, the level of poverty increases by 11.963 percent. When this effect is estimated on the data with linear interpolation, which consists of 361 cases instead of the 357 cases without interpolations, the effect is smaller, at 11.851 percent. These effects are in line with the expectation, since it indicated that a higher level of income inequality equals a higher level of poverty, thus inversely a lower level of income inequality equals a lower level of poverty.

Second, economic growth has a significant log-coefficient of 0.053, which results in an increase of 5.443 percent. Thus an increase in economic growth of one unit on a scale of 100 percent will increase the poverty level by 5.443 percent. The coefficient based on data with linear interpolation is bigger, with 8.220 percent increase in poverty per one unit increase in economic growth. The original data consist of 356 cases and 426 cases with linear interpolation. The results

are not in line with the expectation, since it was expected that when rises in the level of economic growth would decrease the level of poverty.

Thirdly, the effect of education is estimated. Model 6 in Table 7 shows a log-coefficient of -0.068, which entails a change in percentage of -7,037. Thus, when the level of education increase with one unit on the scale of 0 to 100, it decreases the percentage of the population living on less than \$1.90 a day by 7.037 percent. This effect is -6.480 when estimated of the linear-interpolated data, which consists of 273 cases instead of the 251 cases of the non-linear data set. This is in line with the expectation; an increase in the level of education equals a decrease in the level of poverty.

4.5.2 Member-based organizations and control variables

Now the effect of the control variables will be included with the models that involve member-based organizations. First the effect of the control variable will be included with the model incorporating only member-based organizations and poverty (H1). Secondly, the effect of rule of law will be estimated, as a direct effect as well as an indirect effect (H2a), using both the data with and without the linear interpolations (H2b). The same then goes for the variable freedom of association, which will be analysed thereafter. The results of the estimated models can be seen in Table 8.

[Table 8 here]

Member-based organizations

As can be seen in Table 7, member-based organizations have a negative coefficient of -0.023 when controlled for income inequality, economic growth and education. This mean that when member-based organizations increases with one unit the percentage of population that is living on less than \$1.90 a day decreases with 2.274 percent. This effect is smaller when it is estimated on the data with linear interpolations, hence with 2.371 percent, but both effects are not significant. The effect of income inequality in and of itself is significant, having been shown to link to the level of poverty in a country. But these results do not support the expectation of hypothesis 1 that member-based organizations have an effect on poverty reduction, even when controlled for with the control variables.

Rule of law

As explained earlier, there is direct effect of rule of law on poverty. By adding control variables this relationship remains statistically significant. As Model 3 in Table 7 shows, based on the data without linear interpolations the rule of law has a log-coefficient of -1.134, which means that an increase in rule of law by one unit on the scale of -2.5 to 2.5 coincides with a coefficient in the level of poverty of -67.830 percent, so the percentage of population living below the poverty line of \$1.90 a day decreases with 67.830 percent. This is significant, with a p-value of less than 0.05. When the control variables are included, based on the data with linear interpolations the result yields a log-coefficient of -1.141, which means an effect of -68.05. Thus, when rule of law increases by one unit on the scale of -2.5 to 2.5 the percentage of population living on less than

\$1.90 a day decreases by 68.05 percent. This effect is also significant, with a p-value of less than 0.05. These results show that the expectation formulated in hypothesis H2a even hold when the effect is controlled for income inequality, economic growth and education.

When looking at the interaction effect as formulated in hypothesis H2b, there are no different results between formulas including control variables and those without. The expectations that rule of law has a positive effect on the relationship between member-based organizations and the level of poverty remain unsupported by the results after the inclusion of control variables. Since rule of law is used as a proxy for corruption the results are also considered for corruption. There is no support found for hypothesis (H4a and H4b) even when controlled for income inequality, economic growth and education.

Freedom of associations

The effects of freedom of associations turn out different after adding control variables to the model. Previous models with linear interpolated data show that freedom of association has a direct significant effect on poverty. The expectation was to find a negative relationship but instead a positive correlation was found. The effect of freedom of association on the relation between member-based organizations and poverty had not been proven to be statistically significant. By adding the control variables, no significant effects were found. Even the significant direct effect of freedom of association on the level of poverty has lost its significance. With the control variables, the model does not support the hypothesis 3a and 3b, which expects that freedom of association has an influence on the effect that member-based organizations have on poverty.

In previous sections the effect of member-based organizations has been tested with an OLS regression, which does not take into account the fact that these observations were taken over time. The following sections will use methods that do incorporate the temporal factor.

4.6 Fixed effects model

Poverty is a phenomenon that develops over time. That is why this research analyzes the effect of member-based organizations on poverty over time with the use of a fixed effects model. The structure regarding this model is almost the same as that of OLS regression. First the bivariate regression between member-based organizations and poverty is estimated. After that the context variables are included, first as a direct effect and then as an interaction effect. Subsequently the control variables are included. Each model is estimated on the data without linear interpolations and on the data with linear interpolations. Subsequently, each model is checked for cluster robust inference in order to determine whether the standard errors are under or overestimated. This is a check to see if the conclusions that are retrieved from the models are robust.

4.6.1 Bivariate analysis

In this section the effects of member-based organizations and poverty over time are discussed. It is to be expected that a higher level of member-based organizations has a positive effect on the level of poverty in a country over time (H1). The results of this analysis can be seen in Table 9.

[Table 9 here]

When member-based organizations are estimated over time no significant effect on poverty is found. Earlier, this chapter mentioned a significant positive effect of member-based organizations on poverty reduction gathered from the data with linear interpolations. This effect disappears however, when the effect is analyzed over time. This accounts both for the models estimated on the data with linear interpolations (75 cases) as well as those without linear interpolations (50 cases). Remarkable to note and can be seen in Model 1 is that, although it is not significant, a negative log-coefficient of -0.023 appears on the original data, which means a change of a 2.274 percentage decrease in the population living below poverty line, per one percentage unit increase in member-based organizations. However, when estimated on the data with linear interpolation there is a positive coefficient of 69.363 percent increase. Nevertheless both coefficients are not statistically significant, so it cannot be stated with confidence that there is any effect. With the robust function check the errors return lower, but make no difference for the conclusion. Model 2 shows that the p-values are lower, especially for the data with linear interpolations, but not to any significant effect. The expectations formulated in Chapter 2 have not been met by the results, yielding no significant evidence that supports the expectations that member-based organizations have a positive effect on the level of poverty over time (H1).

4.6.2 Rule of law

In this section the effect of the first context variable, rule of law, will be examined over time. First as a direct effect and then as an interaction effect.

Direct effect rule of law

Rule of law will be calculated as a direct effect on both the data with and without linear interpolations. The expectation is the same as with the previous data without the temporal factor, assuming that a higher level of rule of law, in a multiple regression without data on member-based organization, will decrease the poverty level (H2a). Again, the same expectation holds for data including member-based organizations in the model. The results of the direct effects of rule of law on poverty are presented in Table 10.

[Table 10 here]

The direct effect of rule of law on poverty alters completely when estimated over time. As has been mentioned previously, the OLS regression shows a significant negative coefficient of rule of law on poverty. As Model 1 and 2 in Table 10 show, there is no significant effect of rule of law on poverty when estimated over time. This does not differ between the data sets without linear interpolations, which consists of 313 cases, and with linear interpolations, which consists of 357 cases. Contrary to non-temporal results, a positive coefficient is found for this relationship. So the hypothesis H2b that rule of law has a direct effect on poverty even over time is not supported by the results. Since rule of law is a proxy for corruption these results also indicates that there is no support for the hypothesis 4a, that a lower level of corruption will lead towards a lower level of poverty.

When the direct effect of rule of law is estimated again but including member-based organizations, no differences can be found. Rule of law has a negative log-coefficient -0.786, which means that when rule of law increases by one unit on a scale of -2.5 to 2.5 the poverty level decreases by 54.420 percent. This is based on the original data with 46 cases. Using the linear-interpolated data, which consist of 63 cases, slightly reduces this effect to -52.990. The level of member-based organizations has an effect of log-coefficient -0.027, so that an increase of one unit in member-based organizations results in a decrease in the percentages of population that lives below the poverty line of 2.669 percent. This decline is 2.224 percent based on the linear interpolated data. However, the effects in Model 2 cannot be stated with certainty since they are not statistically significant. When rule of law is not estimated over time it has significant direct effect. The cluster robust function in Model 3 shows that the standard errors were underestimated, since the robust standard errors are estimated higher. However since this correction do not lead to different conclusions, no significant effect is found.

Interaction effect rule of law

Next, the effect of rule of law is tested as an interaction variable over time. The expectation formulated in hypothesis 2b, is that the effect of member-based organizations on poverty reduction will be higher when a country has a higher level of rule of law. This assumes to find an inverse relationship between member-based organizations and poverty, and that this relationship will increase with an increasing level of rule of law, meaning that rule of law would prove to have a positive coefficient on the relationship. Again, the interaction variable is first estimated on the data without linear interpolations, consisting of 46 cases, and subsequently on the data with linear interpolations, consisting of 63 cases.

When estimated on the original data (Model 4), a negative log-coefficient, -0.029, is found which means that when member-based organizations increase with one unit the percentage of people that is living below the poverty line will decrease by 2.917 percent. The interaction variable rule of law imposes a log-coefficient of -0.034 on this relationship, which means that when the level of rule of law increases with one unit on the scale of -2.5 to 2.5 this will decrease the effect member-based organizations have on poverty by 3.453 percent. As with previous models of the variable, these results do not return any significant numbers, so no evidence is found in this data that confirms rule of law to have an effect on the relationship between member-based organizations and poverty. This is not different when the model is estimated with the cluster robust

function, which only finds that the standard errors were underestimated except in case of the interaction variable rule of law (Model 5). These underestimations do not lead to a different conclusion.

As for the estimations on the data with linear interpolations (Model 4), the log-coefficient of member-based organizations is slightly smaller, at -0.028, indicating a decrease of 2.750 percent in poverty level when the level of member-based organizations increases by one unit. The effect of rule of law on this relationship also returns smaller results with -2.532 percent, meaning that if rule of law increases by one unit on the scale of -2.5 to 2.5 the effect that member-based organization has on poverty decreases by 2.532 percent. Just like in the graph using the data without linear interpolations, no significant effects are found, which shows no support for the expectations. Since rule of law is used as a proxy for corruption these results also indicates that there is no support for hypothesis 4b, that a lower level of corruption will lead to an increase the effect member-based organizations have on poverty. The models can be classified as being robust, since the robust functions presented in Model 5 do not lead to another conclusion. Only that the standard errors are underestimated except for the interaction variable rule of law.

To sum this section up, the data returns no significant effect that rule of law has on the level of poverty in a country over time. The expectation was to find a negative effect, that when rule of law increases the level of poverty decreases, but this expectation formulated in hypothesis 2a is not supported by the results. The same goes for the interaction variable, where again no significant effect can be found. The expectation of hypothesis 2b, that rule of law has a positive effect on the relationship of member-based organizations on the level of poverty, when calculated over time is not supported by the models. The results are also applicable for corruption, since rule of law is used as a proxy for corruption. This means that there is no direct effect and indirect measured for corruption (H4a and H4b).

4.6.3. Freedom of associations

In this section the effect of the second context variable, freedom of associations, will be examined over time. First as a direct effect and then as an interaction effect on the relationship between member-based organizations and poverty. All the effects are estimated on both the data set without linear interpolations which consist of 31 cases and the data set with linear interpolations consisting of 42 cases.

Direct effect freedom of associations

The freedom of association variable is calculated as a direct effect on the data with linear interpolations (191 cases) and the data without linear interpolations (167 cases), after which the variable of member-based organization is included in the regression. The addition of a temporal factor does not alter the expectations of the model; that a higher level of rule of law, in a multiple regression calculation without member-based organization, should coincide with a decrease in the

poverty level. The results of the direct effects of freedom of associations are presented in Table 11.

[Table 11 here]

The only significant effect is found in the fixed effects regression on the linear interpolated data. This differs from the results of the OLS regression, which finds significant effects for freedom of associations on both the data sets with and without linear interpolations. Model 1 in Table 11 shows a significant log-coefficient of 0.128, signifying a change of 13,655 percent. This denotes that when the level of freedom of association raises by one unit on the scale from 0 to 10, the percentage of population living below the poverty line increases by 13.655 percent. This effect is not in line with the expectation.

Using the data without linear interpolations, the effect of freedom of association is still not significant when the variable of member-based organizations is included. As can be seen in Table 11 the effect of freedom of associations is still not in line with the expectations, as it has a positive log-coefficient of 0.079, representing an increase of 8.220 percent. This effect cannot be stated with certainty as it is not proven to be significant. The same goes for the variable member-based organizations which yield a negative effect of 12.015 percent. The cluster-robust function in Model 2 shows that the standard errors had been over-estimated, but although the cluster robust errors are smaller, they do not lead to any other conclusion since no significant effect is found.

When estimated on the data with linear interpolations (Model 2), a log-coefficient of 0.086 is found, suggesting an increase in the level of poverty of 8.981 percent per one unit increase of freedom of association. However, this effect is not statistically significant, just as it had been when member-based organizations was not included. Although member-based organizations remain without significant results, it is important to notice that the coefficient does in fact change from a negative towards a positive number. One unit increase in member-based organizations now equals an increase in the percentage of population living below the poverty line of 4.812 percent. Once the models are estimated again using the cluster robust function, the errors are lower (Model 3). Even so, these lower robust standard errors do not lead to different conclusions.

Interaction effect freedom of associations

Following, the effect of freedom of association is tested as an interaction variable over time. This effect is estimated on both the linear interpolated data (31 cases) and the non-linear interpolated data (42 cases). The expectations are that the effect of member-based organizations on poverty reduction will be higher when a country has a higher level of freedom of associations. This assumes to find an inverse correlation between member-based organizations and poverty, and for this relationship to increase along with the level of freedom of associations, meaning that the variable freedom of association would have a positive coefficient the relationship between member-based organization and poverty (H3b).

Estimated on the original data, a negative coefficient is found for the interaction variable freedom of association, as can be seen in Model 4 in Table 11. It is a log-coefficient of -0.127, which means that when the level of freedom of association increases by one unit on a scale from 0 to 10, the effect that member-based organizations have on the level of poverty decreases by

11.927 percent. The same holds true for the coefficient of member-based organizations, for which a negative coefficient was expected, but is presented with a positive number in the model. However, the effects are not statistically significant, which means that the model reveals no data supporting the hypothesis.

When estimated on the linear interpolated data a smaller effect of the interaction variable of 1.490 appears, meaning that when freedom of associations increase by one unit on a scale of 0 to 10, a positive effect of 1.490 percent is observed on the effect that member-based organizations have on the level of poverty. As this model estimates, member-based organizations have an effect of 11.739 on poverty, so when member-based organizations increase with one percentage unit, the amount of the population living on less than \$1.90 a day decreases by 11.739 percent. However, this effect is not significant. Regarding the robustness of this model, it can be seen in Model 5 that the standard errors for all variables were over-estimated, as the cluster robust standard errors are considerably lower. Although the results that stem from the model without the robust function do not lead towards other conclusion, both models seem to justify a rejection of the original hypothesis.

To sum this section up, the data shows a direct significant effect for freedom of associations, when estimated on the data with linear interpolations. These results support hypothesis 3a, even over time. For the interaction variable no significant effect can be found. The expectation of hypothesis 3b, that freedom of association has a positive effect on the relationship of member-based organizations on the level of poverty, when calculated over time is not supported by the models.

4.6. Fixed effects model and control variables

As mentioned with the OLS regression, three control variables are expected to have an influence on the level of poverty in a country. In this section the control variable are initially tested as a direct effect on poverty, after which the variable of member-based organizations is included, followed ultimately by the effects of rule of law and freedom of associations. All regressions are estimated over time.

4.6.1 Direct effect control variables

The expectations remain the same for the control variables when estimated over time. Thus, the expectation remains that the results will show a positive coefficient for income inequality, so that a lower level of income inequality would mean a lower level of poverty. For the variables economic growth and education the expectation is that data will show negative coefficients, the assumption being that a higher level of economic growth and a higher level of educations would lead to a lower level of poverty. The results are presented in Table 12.

[Table 12 here]

Noticeably, income inequality has a significant effect in both data sets. On the original dataset, consisting of 357 cases, it shows an effect of 16.999, which means that when income inequality

increases by one unit on the scale from 0 to 100 – with 0 being perfect equality – the percentage of people living on less than \$1.90 a day increases by 16.999 percent. When estimated on the linear-interpolated data with 361 cases, this effect is smaller – namely 16.532 percent. This is in line with the expectation. The effect of economic growth has a negative coefficient when estimated over time, whereas the OLS regression had found a positive coefficient. A change of -0.696 is found using the original data set, with linear interpolations yielding a change of -0.797 percent. The latter means that when the level of increases with one unit on a scale of 0 to 100 the level of poverty decreases by 0.797 percent. The data sets consist of 356 cases without linear interpolations, and 416 cases with linear interpolation. However, the effect of economic growth on poverty over time does not result in a significant outcome. The OLS regression in previous section was in shrill contrast to these results and no support is found for the expectation that economic growth has an influence on poverty over time. Education has a significant effect on poverty. On the data without linear interpolation, that consist of 251 cases, an effect is found of -6.574 percent, which means that when education increases with one unit on a scale of 0 to 100 the level of poverty decreases over time with -6.574 percent. The number is slightly smaller, -6.387 percent, when estimated on the data set with linear interpolation, which contains 273 cases. This is in line with the expectation.

In the following section, the effect of the control variables will be tested with the inclusion of the variable member-based organizations in the model. This inclusion happens methodically; first the effect of member-based organizations on poverty (H1) is tested with the inclusion of the control variable. After that the effect of rule of law will be estimated as both a direct effect and an indirect effect when controlled by the three control variables (H2a and H2b). It is not possible to control the effect of freedom of associations as a direct effect or interaction variable superimposed on the control variable in the fixed effects model, as there are not enough observations available in the dataset¹⁴ that match the criteria. This means that is not possible to test hypothesis 3, which states that an increase in the level of freedom of association also increases the effect that member-based organizations have on the level of poverty, when controlled for income inequality, economic growth and education. The results of the models are presented in Table 13.

[Table 13 here]

4.6.2 Member-based organizations and control variables

Member-based organizations

As can be seen in Table 13 no significant effect is found between member-based organizations and poverty, even when this effect is controlled for income inequality, economic growth and education. The coefficient of member-based organizations is negative and shows a change of -8.881 percent in the level of poverty per unit increase of member-based organizations. The effect economic growth and education have on poverty are significant. This is estimated on the original data, which

¹⁴ The shortage of observations concerns as well as the original dataset as the dataset with linear interpolations.

consists of 36 cases for this model. When estimated on the linear-interpolated data, the effect of member-based organizations on poverty is smaller, at -6.667, but this number is not significant. This model does present significant effects of the levels of economic growth and education, though the numbers are slightly smaller than those calculated using the original data. Nevertheless, economic growth and education, regardless of their significance do not lead to any different conclusion about the effect that member-based organizations have on poverty over time. This means that there is no support for the expectation that when the level of member-based organizations increases, the level of poverty decreases over time even when it is controlled for income inequality, economic growth and education (H1).

Rule of law

No differences appear after the first context variable, rule of law, is included. Model 2 in Table 13 shows for the direct effect a positive coefficient of 20.604 percent change in poverty when rule of law increases by one unit on a scale from -2.5 to 2.5. Member-based organizations show a positive coefficient of 9.0 percent change to the level of poverty. When estimated on the linear interpolated data, the effect of rule of law is even larger, with an estimated 46.521 percent change to the level of poverty. Member-based organizations show a negative coefficient of -0.399 percent on this relation. However, neither effect on neither datasets are statistically significant, which means that ultimately no support for hypothesis H2b is found within these cases. Nevertheless, the effects of economic growth and education are significant so those control variables can be said to have an effect on poverty.

The interaction variable rule of law in Model 3 shows a coefficient of 6.930 percent change, which means that when the level of rule of law increase with one unit on the scale of -2.5 to 2.5 the effect member-based organizations have on poverty increases by 6.930 percent. This effect is even higher, at 8.546 percent, when calculated using the data with linear interpolations. However, these effects are not significant. The same accounts for the effect of member-based organizations, which affects the original data by 1.816 percent and the linear-interpolated data by 2.429 percent. No statistically significant result is found for any of these factors. The effects of economic growth and education, though in themselves statically significant, do not alter the conclusion about the effect that rule of law has on poverty nor on the effect it has on the relationship between member-based organizations and poverty. This model does not support the expectation that a higher level of rule of law will increase the effect that member-based organizations have on poverty over time (H2b) when controlled for income inequality, economic growth and education. Since rule of law is used as a proxy for corruption the results entails also that there is no support found for the hypothesis 4a and 4b, when controlled for income inequality, economic growth and education.

5. Conclusion & Discussion

This research gives an overview of the effect of member-based organizations on poverty, and what the influence of contextual factors is on this effect. This chapter will conclude and discuss the research.

5.1 Conclusion

This section starts with a short review on this research. After that the central research question will be answered and are there several recommendation formulated for the Ministry of Foreign Affairs.

5.1.1 Introduction

Several researchers state that member-based organizations can empower poor people and create the opportunity to raise themselves out of their poverty (World Bank, 2002; Grootaert, 1998; Ministry of Foreign Affairs, 2014a; Ministry of Foreign Affairs, 2014a). However, there are researchers that address the limitations of member-based organizations in their poverty alleviating function (Bernard & Spielman, 2009; ILO, 2003). The different conclusions around this relationship can depend on the external environment in which the member-based organizations operate (Grootaert, 1998, IOB, 2014). Nonetheless, what is classified as an enabling environment is something of a 'black box', as it not always explicitly defined in scientific literature or policy documents. An enabling environment can be an important factor regarding the different conclusions concerning the effect of member-based organizations on poverty. In order to examine this the following research question was formulated:

Is there an effect of contextual factors on the relationship between member-based organizations and poverty reduction?

Several steps have been undertaken in order to answer this question, the first one being to define the contextual factors. There are several definitions of an enabling environment, but the overall scientific consensus says that there are at least three context factors important for member-based organizations, more specifically for the effect they can have on poverty.

The first of the acknowledged factors of an enabling environment, rule of law, is often associated with poverty reduction (World Bank, 2016c; Grandvoinnet, 2001), but it must also exist in order for organizations to function properly and to hold actors accountable (O' Donnell, 2005; Khan 2009). Through member-based organizations, poor people can hold the state accountable for guaranteeing their rights and providing public services. This can increase poor people's chances of escaping poverty, thus a better rule of law increases the effect that member-based organizations have on poverty reduction. Freedom of association is the second context variable that is often associated with poverty reduction (ILO, 2011), and the effect that member-based organizations can have in its reduction. When these rights are not safeguarded in a country, people cannot join, create or be a member of an organization (Puddington, 2008). This gives rise to the expectation

that when a country preserves its freedom of association, member-based organization can flourish, enabling them to play a part in poverty reduction. Corruption is also often associated with poverty (Gupta et al. 2000; World Bank, 2001), and with the effect it can have on organizations that can reduce poverty. Corruption disadvantages poor people disproportionately (World Bank, 2001), and can create the incentive for people not to organize themselves (Dunannova, 2007). When poor people do not get the incentive to form member-based organizations, they cannot utilize that instrument to help reduce their poverty.

This thesis has used a quantitative research design. Starting with a bivariate analysis in order to determine the relationship between member-based organizations and poverty reduction, each context variable then was estimated using an OLS regression test to determine the effect on this relation. To see if this effect changes over time, for the period of time from 1995 to 2014, a fixed effect model was performed. Three control variables - income inequality, economic growth and education - were included in the final models to see if the effect changed. Important to notice is that the models were estimated on data with linear interpolation as well as on data without linear interpolations. The differences in results that arose from the two databases were discussed for each model.

5.1.2 Results

The final models showed some interesting results, the most surprising of which were found after the bivariate analysis between member-based organizations and poverty reduction. A significant effect has been found between member-based organizations and poverty after estimation on the linear-interpolated data. Against the expectations, the results show that there is positive relation instead of a negative relation between member-based organizations and poverty. Thus, the level of poverty seemed to increase whenever member-based organizations increased. This effect was not consistent throughout the research, however, neither did it produce a significant result when estimated on the non-linear interpolated data. Calculated over time, member-based organizations did not show any effect on poverty reduction in a country.

The data regarding the context variables shows has produced similar results. To begin with, *rule of law* has been shown to have a direct effect on poverty, in which poverty decreases through a higher level of rule of law. No results have been found, however, that rule of law has an influence on the relationship between member-based organizations and poverty. When estimated over time, no effects are found of rule of law, either as a direct effect on poverty reduction or on the interaction it has on the relationship between member-based organizations and poverty. Since rule of law was used as a proxy for *corruption*¹⁵, the same holds true for both variables. A direct effect is noticed, thus poverty decrease when corruption decreases, but no effect has been found to take place over time. No effect has been found of corruption on the relation between member-based organizations and poverty. For *freedom of association*, the results showed that when the level of freedom of association increases the level of poverty decreases. Also when it was estimated over time. No effect has been found, however, that freedom of associations has an influence on the relation between member-based organizations on poverty.

¹⁵ The correlation between these two variables was 0.925.

By adding the control variables income inequality, economic growth and education the results changed for freedom of association. It turned out that under these controlled circumstances, no effects were found for freedom of associations on poverty reduction nor on the relation between member-based organizations and poverty reduction. The results for rule of law, and by extension for corruption as well, also showed no effects after the implementation of the control variables. These results did not changed when it was estimated over time.

An overview of the tested hypotheses and their outcome is presented in Table 14, which shows whether or not there an effect has been found and whether this culminates in a negative or positive change.

[Table 14 here]

The aim of this research is to give more insight into the relationship between member-based organizations and poverty, and why this link in some cases turns out positive whereas in others it has a negative impact. This thesis argued that the environment could determine whether or not this relation is positive, negative or non-existent. An enabling environment is necessary in order for member-based organizations to flourish and have an effect on poverty. Since the definitions of an enabling environment are widespread and not always clear, likened to a black box, this thesis has made an effort to open this black box by defining it using the variables rule of law, freedom of associations and corruption.

The main result of this thesis is that in first instance member-based organizations seem to increase poverty, but the results over time showed no effect. The impact of an enabling environment was not important to this result, since no effect had been found, not even over time, for any of the factors that constitute such an environment; rule of law, freedom of association and corruption. Coming back to this thesis' research question, it can be stated that the data provided for this research has found no evidence that contextual factors have an effect on the relationship between member-based organization and poverty reduction.

5.2 Implications and recommendations

This section provides the contributions and implications of this thesis to the theoretical domain and to the policy domain. The section concerning policy domain will focus on the Ministry of Foreign Affairs, since this thesis has centered mainly on three types of organizations that their policy subsidies. The succeeding section recommends further research on this subject matter as per the results of this study.

5.2.1 Theoretical implications

First of all, this research shows that the relation between member-based organizations remains ambiguous. As has been mentioned, previous research shows different conclusions about member-based organizations and their role in reducing poverty. While this research made an attempt at arguing the validity of an enabling environment as the explanation for these different conclusions,

the results this research has yielded cannot give a comprehensive and satisfying explanation. By using quantitative methods this research has tried to provide a new framework, but still the relationship between member-based organizations and poverty remains unclear. What at first resulted in the finding of a positive effect, was voided with the addition of a temporal element. Neither did the contextual factors change this result. While there are some discussion points within this research, as outlined in the next section, its contribution lies foremost in the fact that quantitative research did not give a saturated answer on the ambiguity that persists around the relationship between member-based organizations and poverty. Secondly, the reasoning that member-based organizations need an enabling environment in order to flourish has as of yet not been confirmed. While often the environment is added as a condition in order for member-based organizations to function properly, this research shows that caution is needed when including it into studies.

5.2.2 Policy implications

As mentioned in the introduction, the ministry of Foreign Affairs subsidizes several organizations that help member-based organizations to play their part in poverty reduction. Their Theory of Change, the basis for their policy focus and decision, is based on the assumption that when poor people are a member of an organization, it will have a positive effect on their income and well-being, eventually reducing poverty (Ministry of Foreign Affairs, 2014a, p. 3). The literature review and the results of this research show that this assumption is not as evident as presumed. Given the fact that this is the foundation upon which their policy is built it is important for the Ministry to take these conclusions in account. The effect they expect their subsidized organizations to have can be overestimated. Another important aspect is that the Ministry wants to create sustainable development for poor people through the stimulation of member-based organizations (Ministry of Foreign Affairs, 2014a, p. 3). The results show that there is no effect of member-based organizations on poverty reduction over time as of yet, so when the Ministry continues to support member-based organizations over a longer period of time, they need to monitor the effect each year. They cannot just assume that when an effect that is present in one year will automatically continue to be present in the years to come.

5.2.3 Recommendation for further research

The first recommendation, not surprising since it is presented the greatest limitation to this research, is that more data ought to be gathered within the domain of member-based organizations. Research on member-based organizations is often qualitative instead of quantitative, but greater amounts of data make it possible to analyze more cases and thus increase the significance and explanatory power of the analysis. But also within the domain of qualitative research there are steps that can be taken for further research. While there is some research on the effect of member-based organizations, much less research has been done on the effect of an enabling environment on member-based organizations. This link could perhaps be researched through process tracing, in which every step of which this effect consists is examined.

The second recommendation is that it might be interesting to expand the research toward more developed countries. These countries have not been included in this research because they

either had no values on poverty, or simply because they actually have no people living on less than \$1.90 a day. However, the World Value Survey does have data on several countries that have only recently developed into this state. It could be interesting to examine whether or not member-based organizations had a contribution to the generation of the well-being of those countries.

5.3 Discussion

This section will review the performed research by giving a discussion of the results and elaborating on the possible limitations.

To begin with the datasets. The data that are used for this research almost completely rely on secondary data, namely household surveys. All data was retrieved from large scale data sources and the organizations responsible for the gathering argue that it is comparable across countries and over time, which is positive for the external validity of this research. However it is still important to stress that the problem as a researcher remains that you do not have any influence on how the data for your variables is constructed, which negatively influences the internal validity of the research. With a variable like poverty, which has no straightforward definition and consists of many elements, it is not possible to find a dataset that matches your requirements completely. The second problem is that the organizations might not have executed the surveys consistently throughout the years or throughout different countries. These differences can influence the data and thus the results of the research. Some of the databases overcome this problem however, through their strict procedures and methodology, making it possible to use these sets over time.

The second consideration also concerns the data, but more specifically the data that is used to measure member-based organizations, which is not ideally suited for the purposes of this research. The membership measurement of the World Value Survey is used as a proxy to measure the overall numbers of member-based organizations in a country. On an individual level, respondents are asked if they are member of several organizations, such as professional organizations and labor unions. Although the total of respondents of an organization can give an indication of how strong the level of member-based organizations is in a country, it does not measure the exact level of member-based organizations. As already noted, this can be attributed completely to the shortage of data available within this research domain. There were of course other datasets available that were specifically aimed at professional organizations, labor unions and agricultural cooperatives. For the latter, the Agriterra data set could be used (Agro-Info, 2016), but this set does not include many countries. Primarily this dataset includes only the member-based organizations that are supported by Agriterra, which would create a bias in the research that leaves out any and all cooperatives that were not in league with Agriterra, which might possibly have different effects on poverty. Overall a real shortage on data regarding member-based organizations exists.

The third discussion point is the total number of missing cases. As already explained in the methodology, the case selection is based on the member-based organization variable. Within this research it was elected to create a second dataset, with linear interpolations for the independent variable. This was done in order not to lose the cases that did have values for member-based organizations but not for poverty. Although the technique of linear interpolations was performed correctly, it can have an internal bias stemming from the data itself. It is assumed that the use of a

linear function will represent the value of a missing value, but it can nevertheless not be deemed a hundred percent certain.

Even with the use of the linear interpolations the total of valid cases is limited, which is the fourth discussion point. There were only cases available for 38 countries, which lead to some implications for the results. The bias that could arise from this limitation is that some countries' cases are underrepresented in the analysis. Perhaps these cases might have significantly altered the effect of member-based organizations or show completely opposite effects of member-based organization, decreasing poverty instead of increasing it. The exclusion of such large amounts of data lead to great amounts of statistical uncertainty. The same goes for the effect of an enabling environment, which might just have proven to have great influence in the missing cases, or they might not have. These possibilities indicate that the explanatory power of this research is limited, as only 38 countries, totaling a low amount of cases were examined. In order to expand the explanatory power the countries were examined over a period from 1995 till 2014, but nevertheless the reader has to keep in mind that the models are still based on a limited amount of cases and the explanatory power is small.

5.4 Final words

The introduction to this research had likened the concept of an enabling environment to a 'black box'. Not much previous research had been done into the link between an enabling environment and its effect on member-based organizations and poverty reduction, certainly not within the quantitative domain. This research has tried to open up this 'black box', but when there is not much data on a subject it is difficult to find a satisfying explanation through research. That is why this research should not be deemed as a comprehensive explanative research, but more as an explanatory research. The shortage on the theoretical information, available datasets and the explanatory power of the analysis impel the subject matter to be researched further, using this thesis as an information source or as guideline.

Literature

Agro-Info. (2016). *Information platform for Producers' Organizations*. Retrieved from: Agro-Info.net.

Alkire, S. & Santos, M.E. (2010). *Multidimensional Poverty Index*. Oxford Poverty and Human Development Initiative, University of Oxford. Retrieved from: <http://www.ophi.org.uk/wp-content/uploads/OPHI-MPI-Brief.pdf>

Allison, P. D. (1999). *Multiple Regression*, Pine Forge Press, California.

Baker, D. (2013). *Unions: The Best Fix to Poverty*. Centre for Economic Policy Research. Retrieved from: <http://cepr.net/blogs/cepr-blog/unions-the-best-fix-to-poverty>

Bernard, T & Spielmann, D.J. (2009). Reaching the rural poor through rural producer organizations? A study of agricultural marketing cooperatives in Ethiopia. *Food Policy*, 34, 1, 60-69.

Beuer, M., Faist, T. & Jordan, B. (1995). Collective action, Migration and Welfare States. *International Sociology*, 10, 4, p. 369-386.

Birchall, J. (2003). *Rediscovering the cooperative advantage. Poverty reduction through self-help*. International Labour Office, Geneva.

Birchall, J. (2004). *Cooperatives and the Millennium Development Goals*. International Labour Office, Geneva.

Birchall, J. & Simmons, R. (2009). *Co-operatives and poverty reduction. Evidence from Sri Lanka and Tanzania*. Co-operatives for Development; Co-operative College Paper 13.

Brinkerhoff, D.W. (2007). *The Enabling Environment for Achieving the Millennium Development Goals: Government Actions to Support NGOs*. In: Brinkerhoff, J.M., Smith, S.C. & Teegen, H. (Eds.). *NGOs and the Millennium Development Goals. Citizens Action to Reduce Poverty*. Palgrave Macmillan, New York.

Chen, M., Jhabvala, R., Kanbur, R., Richards, C. (2006). *Membership Based Organizations of the Poor*, Routledge.

Cruz, M., Foster, J., Quillin, B., Schellekens, P. (2015). *Ending Extreme Poverty and Sharing Prosperity: Progress and Policies*. Policy Research Note October 2015 PRN/15/03. World Bank Group.

Deolalikar, A.B., Brillantes Jr., A.B, Gaiha, R., Pernia, E.M., Racelis, M. (2002). *Poverty Reduction and the Role of Institutions in Developing Asia*. ERD Working Paper Series No. 10, Asian Development Bank.

DFID. (2010). *Working with Cooperatives for Poverty Reduction*. Briefing Note. Department for International Development.

DFID. (2013). *Literature Review: Governance, institutions, growth and poverty reduction: a literature review*. Department for International Development.

Di Gregorio, M., Hagedorn, K., Kirk, M., Korf, B., McCarthy, N., Meinzen-Dick, R. & Swallow, B. (2008). *Property Rights, Collective Action and poverty. The Role of Institutions for Poverty Reduction*. Working Paper No. 81.

Dollar, D & Kraay, A. (2002). Growth is Good for the Poor. *Journal of Economic Growth*, 7, 195-225.

Doner, R.F., Schneider, B.R. (2000). Business Associations and Economic Development: Why Some Associations Contribute More than Others. *Business and Politics*, 2,3, 261-288.

Dunanova, D. (2007). Bureaucratic Corruption and Collective Action, Business Associations in the Postcommunist Transition. *Comparative Politics*, 39, 4, 441-461.

Esary, J. & Menger, A. (2016). *Practical and Effective Approaches to Dealing with Clustered Data*. Department of Political Science, Rice University.

Farrukh, I. (2006). *Sustaining Gains in Poverty Reduction and Human Development in the Middle East and North Africa*, The International Bank for Reconstruction and Development, The World Bank.

Freedom House (2016b). *Methodology: Freedom in the World 2016 Reports*. Retrieved from: <https://freedomhouse.org/report/freedom-world-2016/methodology>

Freedom House (2016a) *About Freedom in the World. An annual study of political rights and civil liberties*. Retrieved from: <https://freedomhouse.org/report-types/freedom-world>

Gentilini, U. & Summer, A. (2012). *What Do National Poverty Lines Tell Us About Global Poverty?* IDS Working Paper 392, Institute of Development Studies in June 2012

GESIS (2014). *Overview of countries participating in EVS or/and WVS waves and year of collection*, GESIS Data Archive for the Social Sciences. Leibniz-Institut für Sozialwissenschaften.

Grandvoinnet, H. (2001). The Rule of Law and Poverty Reduction: Some Issues. In Robson, P & Kjonstad, A. (Ed.) *Poverty and Law*, Hart Publishing, Oxford.

Grootaert, C. (1998). *Social Capital: The Missing Link? Social Capital Initiative*, Working Paper No. 3, The World Bank. Local Level Institutions Study, The World Bank.

Grootaert, C. (1999). *Social Capital, Household Welfare and Poverty in Indonesia*. The World Bank

Grootaert, C. & Van Bastelaer, T. (2002). Introduction and overview. In: Grootaert, C. & Van Bastelaer, T. (Eds). *The Role of Social Capital in Development, An Empirical Assessment*, Cambridge University Press.

Gupta, S. , Davoodi, H.& Alonso-Terme, R. (1998). *Does Corruption Affect Income Inequality and Poverty?*, Working Paper 98/76, International Monetary Fund.

Hanisch, M. (2016). Cooperatives in rural development and poverty alleviation. In Bijman, J., Muradian, R., Schuurman (Ed.). *Cooperatives, Economic Democratization and Rural Development* (p. 48-74). Edward Elgar Publishing Limited, Inc., Northampton.

ICA (2015). *Co-operative identity, values & principles*. International Co-operative Alliance, 2015, January 5. Retrieved from: <http://ica.coop/en/whats-co-op/co-operative-identity-values-principles>

ILO (2003) *Trade Unions and Poverty Alleviation in Africa*. International Labour Organization, edited by Mwamadzingo, M. & Saleshando, D.

ILO (2005). *Employers' organizations taking the lead on Gender Equality. Case Studies from 10 Countries*. Bureau for Employers' Activities, International Labour Office, Geneva.

ILO (2007). *The Promotion of Sustainable Enterprises*. International Labour Conference, 96th Session.

ILO (2011). *Freedom of Association and Development*. Working Paper, International Labour Organization.

IOB (2014) *Op zoek naar Focus en Effectiviteit. Beleidsdoorlichting van de Nederlandse Inzet voor Private Sector Ontwikkeling 2005-2012*. NR. 389 Inspectie Ontwikkelingssamenwerking en Beleidsevaluatie.

- Kamstra, J. (2014). *Promoting Civil Society and Democracy: tracing ideals in reality*. Dissertation, Radboud University Nijmegen.
- Kaufmann, D., Kraay, A. & Mastruzzi, M. (2010). *The Worldwide Governance Indicators. Methodology and Analytical Issues*. Retrieved from: <http://info.worldbank.org/governance/wgi/index.aspx#doc>
- Khan, M.H. (2009). *Governance, Growth and Poverty Reduction*, DESA Working Paper No. 75, United Nations Department of Economic and Social Affairs.
- KIT (April 2015). *Evaluation of the Program Support to Producer Organizations (POP 2011-2014) implemented by Agriterra*. Koninklijk Instituut voor de Tropen, Amsterdam.
- Lübker, M., Smith, G. & Weeks, J. (2002). Growth and the Poor: A Comment on Dollar and Kraay. *Journal of International Development*, 14, 5, 555-571.
- Markelova, H., R. Meinzen-Dick J. Hellin, and S. Dohrn. (2009). Collective action for smallholder market access. *Food Policy*, 34, 1, 1-7.
- Ministry of Foreign Affairs (2014a). *Multi-annual strategic plan 2014-2017*, Department Sustainable Economic Development.
- Moustier, P., Tam, P., Anh, D., Binh, V. & Loc, N. (2010). The Role of Farmer Organizations in Supplying Supermarkets with Quality Food. *Food Policy*, 35,1, 69-78.
- Mwango, E. & Markelova, H. (2009). Collective Action and Property Rights for Poverty Reduction: A review of Methods and Approaches. *Development Policy Review*, 27, 3, 307-331.
- O'Donnell, G. (2005). Why the rule of law matters. In Diamond, L.J. & Morlino, L. (Ed.), *Assessing the quality of democracy*, Cambridge: Cambridge University Press.
- OECD (2016a) Social Protection and Well-being Database, Poverty. Retrieved from: <https://stats.oecd.org/Index.aspx?DataSetCode=IDD>
- OECD (2016b). Online Education Database, Organization for Economic Co-operation and Development. Retrieved from: <http://www.oecd.org/education/database.htm>
- Olsen, M. (1982). *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities*, Yale University Press.
- Pinto, A.C. (2009). 'Agricultural Cooperatives and Farmers Organisations: Role in Rural Development and Poverty Reduction', Swedish Cooperative Centre, Agricord. Retrieved from: <http://www.un.org/esa/socdev/egms/docs/2009/cooperatives/Pinto.pdf>
- Puddington, A. (2008). *Freedom of Association Under Threat: The New Authoritarians' Offensive Against Civil Society*, Freedom House. Retrieved from: <https://freedomhouse.org/report/freedom-association-under-threat-new-authoritarians-offensive-against-civil-society/freedom>
- Ravallion, M. (1997). Can High-Inequality Developing Countries Escape Absolute Poverty?, *Economic Letter*, 56, 51-57.
- Ravallion, M. (2001). Growth, Inequality and Poverty: Looking Beyond Averages. *World Development*, 29, 11, 1803-1815.
- Ravallion, M., Chen, S. & Sangraula, P. (2009). 'Dollar a day revisited'. *The World Bank Economic Review*, 23, 2, 163-184.
- Sen, A. (1993). 'Capability and well-being'. In Nussbaum, M. & Sen, A. (Ed.) *The Quality of Life*, Oxford, Clarendon Press.

Sen, K., & Velde, D.W. (2007). *State-Business Relations and Economic Growth in Sub-Saharan Africa*, IPPG Discussions Papers, University of Manchester. Department for International Development.

Shah, A. (2006). *Corruption and Decentralized Public Governance*. World Bank Policy Research Working Paper Series 3824, The World Bank.

Shiferaw, B., Hellin, J., & Muricho, G. (2011). Improving Market Access and Agricultural Productivity Growth in Africa: What Role for Producer Organizations and Collective Action Institutions? *Food Security*, 4, 7, 109-113.

Shirefaw, B., Hellin, J. & Muricho, G. (2016). Markets access and agricultural productivity growth in developing countries: challenges and opportunities for producer organizations. In Bijman, J., Muradian, R., Schuurman (Ed.). *Cooperatives, Economic Democratization and Rural Development* (48-74). Edward Elgar Publishing Limited, Inc., Northampton.

Shiferaw, B., G. Obare, G. Muricho, S. and Silim. (2009). Leveraging institutions for collective action to improve markets for smallholder producers in less-favored areas, *African Journal of Agricultural and Resource Economics*, 3, 1, 1-18.

Sinja, J., Njoroge, L., Mbaya, H., Magara, H., Mwangi, E., Baltenweck, I., Romney, D., Omore, A. (2006). *Milk Market Access for Smallholders: A Case of Informal Milk Trader Groups in Kenya*. Paper, 2-6 October, Columbia.

Sran, G., Lynk, M., Clancy, J. & Fudge, D. (2013). *Unions Matter. How the Ability of Labour Unions to Reduce Income Inequality and Influence Public Policy has been affected by Regressive Labour Laws*. Canadian Foundation for Labour Rights. March 2013, Ottawa

Stock J.H & Watson M.W. (2006). *Introduction to Econometrics*, New York: Pearson.

Tefft, J. (2004). *Mali's White Revolution: Smallholder Cotton from 1960 to 2003*. International Food Policy Research Institute, 2020 Vision Briefs, 12, 5. Washington D.C.

Thorp, R., Stewart, F., Heyer, A. (2005). 'When and how far is Group Formation a Route out of Chronic Poverty'. *American Journal of Agricultural Economics*, 83, 5, . 1273-1279.

Torres-Reyna, O. (2007). *Panel Data Analysis Fixed and Random Effects using Stata (v. 4.2)*. Princeton University. Retrieved from: <http://dss.princeton.edu/training/Panel101.pdf>

Transparency International (2012). *Corruption Perceptions Index 2012: An updated methodology*. Retrieved from: http://www.transparency.org/files/content/pressrelease/2012_CPIUpdatedMethodology_EMBARGO_EN.pdf

Transparency International. (2016a). *Corruption Perceptions Index 2015*. Retrieved from: <http://www.transparency.org/cpi2015>

Transparency International. (2016b). *How do we define corruption?* Retrieved from: <http://www.transparency.org/what-is-corruption/#define>

TUC. (2006). *Trade Unions and World Poverty*. Policy Paper. Retrieved from: <https://www.tuc.org.uk/sites/default/files/extras/dfid.pdf>

Tweede Kamer (2000-2001). *Civil Society en Structurele Armoedebestrijding. De rol van actoren uit het Nederlands maatschappelijk middenveld*, Tweede Kamer de Staten Generaal, 27 433 nr. 3.

Tweede Kamer. (2013-2014a). *Hulp, Handel en Investerings*, Tweede Kamer der Staten Generaal 2013-2014 33625 nr. 96.

Tweede Kamer. (2013-2014b). *Hulp, Handel en Investerings*, Tweede Kamer der Staten Generaal 2013-2014 33625 nr. 38.

UIS (2016) *Information on household survey-based education statistics in the UIS Data Centre*, Unesco Institute for Statistics. Retrieved from:
<http://www.uis.unesco.org/Education/Documents/Household-survey-methodology-en.pdf>

(UN, 1998). *Declaration on the Right and Responsibility of Individuals, Groups and Organs of Society to Promote and Protect Universally Recognized Human Rights and Fundamental Freedoms*, General Assembly Resolution 53/144 of 9 December 1998.

UN (2011). *The United Nations Rule of Law Indicators. Implementation Guide and Project Tools*, Department of Peacekeeping Operation and Office of the High Commissioner for Human Rights. Retrieved from:
http://www.un.org/en/events/peacekeepersday/2011/publications/un_rule_of_law_indicators.pdf

UN (2015). *Sustainable Development Goals. 17 Goals to transform our World*. United Nations. Retrieved from:<http://www.un.org/sustainabledevelopment/poverty/>

UNDP. (2006). *Poverty in Focus. What is Poverty? Concepts and Measures*. Discussion Paper, December 2006. International Poverty Centre.

UNDP (2015). *Sustainable Development Goals Booklet. Introducing the 2030 Agenda for Sustainable Development*. Research Paper. Retrieved from:
<http://www.undp.org/content/undp/en/home/librarypage/corporate/sustainable-development-goals-booklet.html>

UNDP (2016). *Multidimensional Poverty Index*. Human Development Report. Retrieved from:
<http://hdr.undp.org/en/content/multidimensional-poverty-index-mpi>

Verhofstadt, E. & Maertens, M. (2015). Can Agricultural Cooperatives Reduce Poverty? Heterogeneous impact of cooperative membership on farmers' welfare in Rwanda, *Applied Economic Perspective and Policy*, 37, 1, 86-106.

Wanyama, F., Develtere, P. & Pollet, I. (2008). *Encountering the Evidence: Cooperatives and Poverty Reduction in Africa*. Working Paper, Research Institute for Work and Society, Catholic University of Leuven.

White, H. & Lu, X. (2010). *Robustness Checks and Robustness Tests in Applied Economics*, University of California. Retrieved from:
<http://www.economics.uci.edu/files/docs/micro/s11/white.pdf>

WJP (2016) *World Justice Project, Historical Data*. Retrieved from:
<http://worldjusticeproject.org/historical-data>

World Bank (2001). *World Development Report 2001: Attacking Poverty*, World Bank, Oxford University Press, New York. Retrieved from:
<https://openknowledge.worldbank.org/handle/10986/11856> License: CC BY 3.0 IGO.

World Bank (2002). *Empowerment and Poverty Reduction: A Sourcebook*. Poverty Reduction and Economic Management, 1 May 2002.

World Bank (2003). *Enabling Environments for Civic Engagement in PRSP Countries*. Social Development Notes, Note No. 82.

World Bank (2007). *World Development Report 2008: Agricultural for Development*, The World Bank, Washington D.C.

World Bank (2011). *World Development Report 2011: Conflict, Security and Development*, The World Bank, Washington D.C.

World Bank (2013a). *Ending Poverty and Sharing Prosperity*. Global Monitoring Report 2014/2015. International Bank for Reconstruction and Development, The World Bank.

World Bank (2013b). *Poverty Reduction: How and Where We Work*. News item. The World Bank; 2013, February 19. Retrieved from: <http://www.worldbank.org/en/news/feature/2013/02/05/povertyreductioninpractice>

World Bank (2015a). World Bank Forecasts Global Poverty to Fall Below 10% for First Time; Major Hurdles Remain in Goal to End Poverty by 2030.[Press Release no: 2016/106/DEC], Washington.

World Bank (2015b). Justice and Rule of Law. Brief, 28 April 2015. Retrieved from: <http://www.worldbank.org/en/topic/governance/brief/justice-rights-and-public-safety>

World Bank (2016a). *Enabling Environment for Civic Engagement*, The World Bank. Retrieved from: <http://go.worldbank.org/Q3Y0AXDH10>

World Bank (2016b) *Rule of law and Development*, The World Bank. Retrieved from: <http://go.worldbank.org/9OTC3P5070>

World Bank (2016c). *Education Overview*, The World Bank, April 2016. Retrieved from: <http://pubdocs.worldbank.org/pubdocs/publicdoc/2016/4/890441459784763164/EDUCATION-OVERVIEW-April4.pdf>

World Bank (2016d). *The World Bank Data Indicators, Poverty*, The World Bank. Retrieved from: <http://data.worldbank.org/indicator>

World Bank (2016e) *Rule of Law as a Goal of Development Policy*, The World Bank. Retrieved from: <http://go.worldbank.org/DZETJ85MD0>

World Bank (2016f). Rule of Law Indicator, World Governance Indicators. <http://databank.worldbank.org/data/reports.aspx?source=worldwide-governance-indicators>

World Bank (2016g). *CPIA transparency, accountability, and corruption in the public sector rating Data*, World Development Indicators, The World Bank. Retrieved from: <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>

World Bank (2016h). World Development Indicators, GINI Index, The World Bank. Retrieved from: <http://data.worldbank.org/indicator/SI.POV.GINI?page=6>

World Bank (2016i). World Development Indicators, Gross National Income Annual Growth, The World Bank. Retrieved from: <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>

World Bank (2016j). World Development Indicators, Net Enrollment Rate Primary Both Sexes, The World Bank. Retrieved from: <http://databank.worldbank.org/data/reports.aspx?source=2&country=&series=SE.PRM.NENR&period=>

World Bank (2016k) *FAQs: Global Poverty Line Update*. 30 September 2015. Retrieved from: <http://www.worldbank.org/en/topic/poverty/brief/global-poverty-line-faq>

World Bank (2016l) Meta data. Indicator Poverty headcount ratio at \$1.90 a day (2011 PPP) (% of population)(SI.POV.DDAY), The World Bank. Retrieved from: <http://iresearch.worldbank.org/PovcalNet/index.htm>

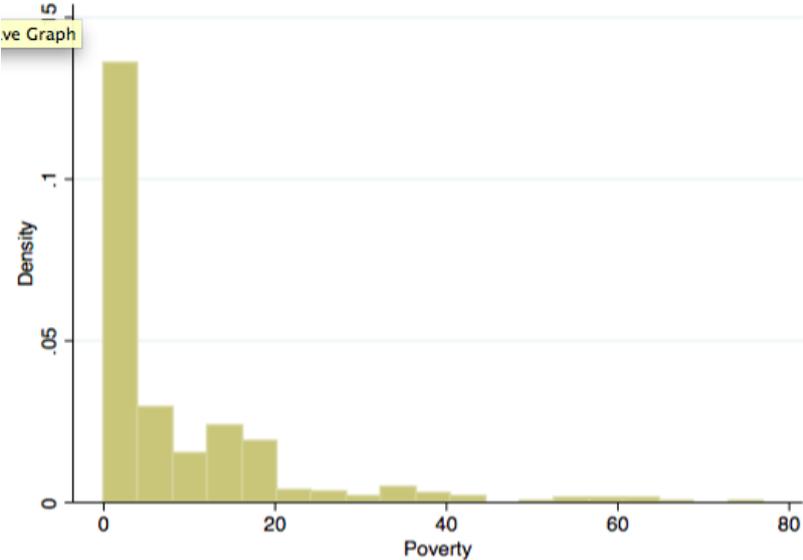
World Bank (2016m) *Rule of Law, World Wide Governance Indicators*, The World Bank. Retrieved from: <http://databank.worldbank.org/data/reports.aspx?source=worldwide-governance-indicators>

WVS (2016a). World Value Survey, Fieldwork and Sampling. Retrieved from: <http://www.worldvaluessurvey.org/WVSContents.jsp>

WVS (2016b). World Value Survey Variable. Retrieved from: <http://www.worldvaluessurvey.org/WVSONline.jsp>

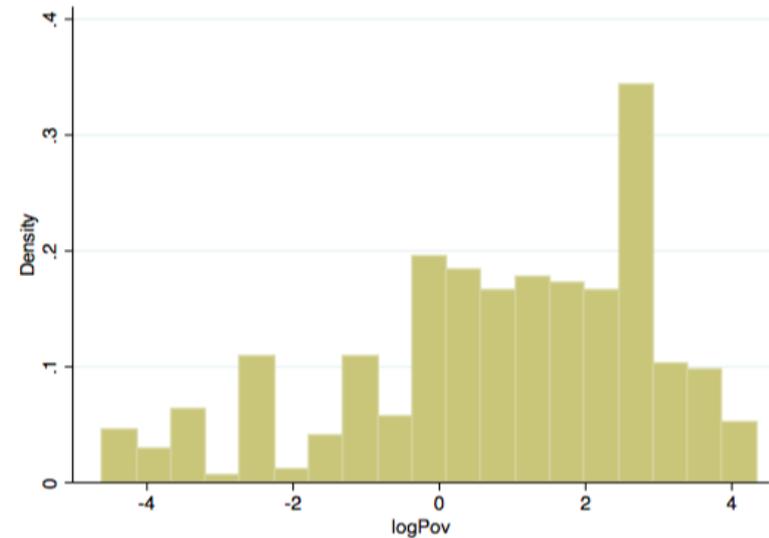
Tables and Figures

Figure 3.1: Histogram poverty



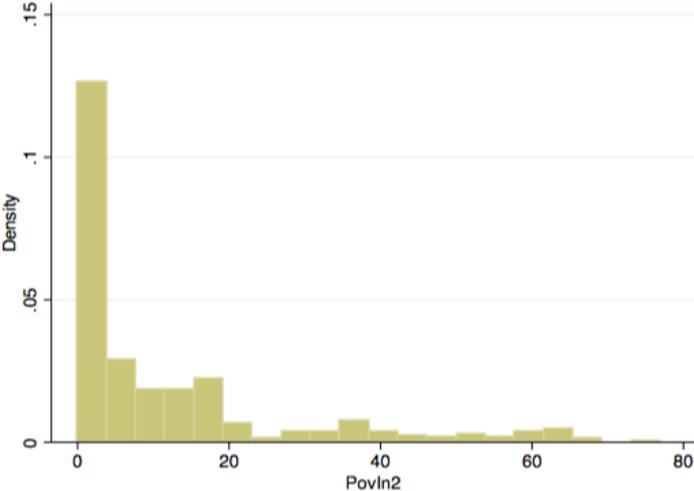
Source: World Bank. Based on the data without linear interpolations.

Figure 3.2 Histogram logarithm poverty



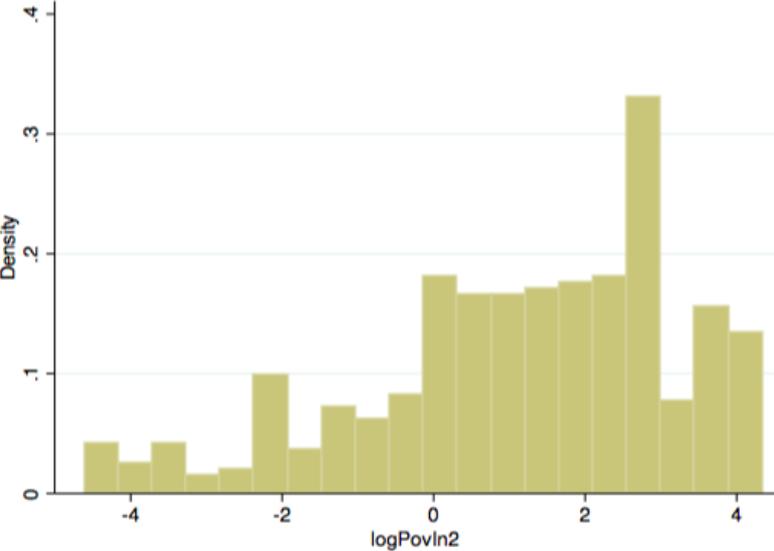
Source: World Bank. Based on the data without linear interpolations.

Figure 3.3: Histogram poverty



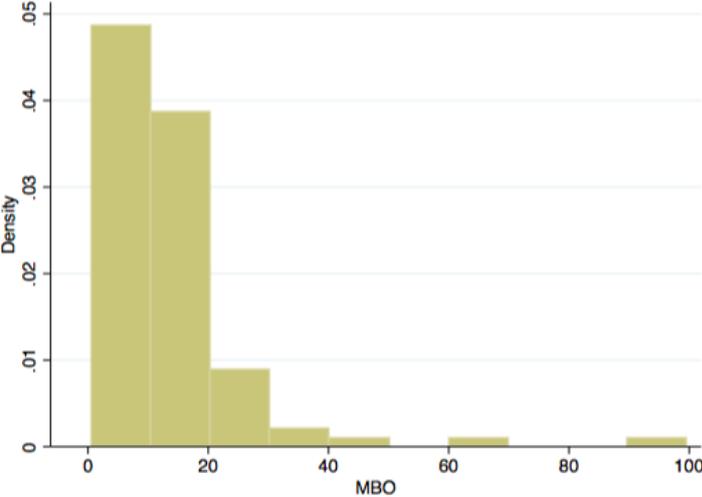
Source: World Bank. Based on data with linear interpolations

Figure 3.4: Histogram logarithm poverty



Source: World Bank. Based on data with linear interpolations.

Figure 3.5: Histogram member-based organizations



Source: World Value Survey

Table 2: Descriptives of dependent, independent and control variables

	Valid N	Mean	Standard deviation	Minimum value	Maximum value
Dependent variable					
Poverty	378	8.484	12.381	0.001	77
Log Poverty	378	0.864	2.058	-4.605	4.344
Poverty In ¹⁶	438	11.579	16.166	0.001	77
Log Poverty In	438	1.145	2.096	-4.605	4.344
Independent variable					
Member-based organizations	102	13.184	12.698	0.7	99.6
Rule of law	608	-0.246	2.096	-4.605	4.344
Freedom of associations	343	7.606	3.294	0	12
Corruption	115	41	12.970	19	73
Control variables					
Income inequality	408	39.822	9.768	16.23	68
Economic growth	714	4.595	5.042	-15.858	36.380
Education	476	90.860	7.503	59.447	100

Source: World Value Survey, World Bank & Corruption Perception Index

Table 3: Bivariate Analysis Member-Based Organizations on Poverty

	Model 1	Model 2	Model 3	Model 4
Intercept	0.252 (0,655)	0.252 (0,558)	0,471 (0,366)	0,471 (0,321)
Member-based organizations	0,003 (0,054)	0,003 (0,046)	0,0375 (0,195)*	0,0375 (0,130)**

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

¹⁶ 'In' mean within the tables that it is based on the data with linear interpolations

Table 4: OLS regression Rule of Law on Poverty

	Model 1	Model 2	Model 3	Model 4	Model 5
Non-linear interpolated data					
Constant	0.385 (0.108)	-0.034 (0.660)	-0.034 (0.565)	-0,072 (0,687)	-0,072 (0,640)
Member-based organizations		0.016 (0.531)	0.016 (0.426)	0.019 (0,056)	0,019 (0,055)
Rule of law	-1,593 *** (0.154)	-1.240 *** (0.443)	-1.240 *** (0.426)	-1.440 (0,964)	-1,440 * (0,845)
Interaction rule of law				0,018 (0,078)	0,018 (0,067)
Linear-interpolated data					
Constant	0.564 (0.105)	-0.180 (0.442)	-0.180 (0.384)	-0,188 (0,446)	-0,188 (0,384)
Member-based organizations		0.054 * (0.029)	0.054 ** (0.020)	0,055 * (0,029)	0,055 *** (0,020)
Rule of law	-1.704 *** (0.152)	-1.608 *** (0.383)	-1.608 *** (0.383)	-1,881 ** (0,782)	-1,881 ** (0,732)
Interaction rule of law				0,023 (0,059)	0,023 (0,0491)

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

Table 5: OLS regression Freedom of Association on Poverty

	Model 1	Model 2	Model 3	Model 4	Model 5
Non-linear interpolated data					
Constant	1,776 *** (0,483)	1,025 (1,558)	1,025 (1,540)	3,030 (2,925)	3,030 (2,374)
Member-based organizations		0,027 (0,076)	0,027 (0,076)	-0,155 (0,237)	-0,155 (0,184)
Freedom of association	-0,180 *** (0,054)	-0,154 (0,141)	-0,154 (0,141)	-0,399 (0,336)	-0,399 (0,286)
Interaction freedom of association	1,776 *** (0,483)			0,023 (0,028)	0,023 (0,025)
Linear-interpolated data					
Constant	2,422 *** (0,436)	0,941 (1,061)	0.941 (0,894)	0,739 (1,739)	0,739 (1,341)
Member-based organizations		0,082 ** (0,035)	0,082 *** (0,020)	0,096 (0,107)	0,096 (0,066)
Freedom of association	-0,243 *** (0,050)	-0,178 (0,109)	-0,178 * (0,102)	-0,154 (0,195)	-0,154 (0,152)
Interaction freedom of association				-0,002 (0,012)	-0,002 (0,007)

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

Table 6: OLS Regression Corruption on Poverty

	Model 1	Model 2
Intercept	.79 ** (.40)	.22 * (.126)
Corruption	1.55 ** (.25)	1.46 * (.26)

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

Table 7: Bivariate Analysis Control Variables on Poverty

	Model 1	Model 2	Model 3
Non-linear interpolated data			
Intercept	-3.719 *** (0.411)	0.712 *** (0.138)	6.861 *** (2.354)
Income inequality	0.113 *** (0.010)		
Economic growth		0.053 ** (0.138)	
Education			-0.068 *** (0.025)
Linear interpolated data			
Intercept	-3.681 *** (0.409)	0.087 *** (0.135)	6.892 *** (2.235)
Income inequality	0.112 *** (0.409)		
Economic growth		0.079 *** (0.136)	
Education			-0.067 *** (0.024)

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

Table 8: OLS regression with control variables

	Model 1	Model 2	Model 3	Model 4	Model 5
Non-linear interpolated data					
Constant	2.580 (7.500)	-2.846 (7.751)	-2.670 (7.774)	-0.047 (10.052)	-6.015 (10.457)
Member-based organizations	-0.023 (0.068)	-0.029 (0.067)	-0.053 (0.072)	-0.029 (0.090)	0.310 (0.249)
Rule of law		-1.134 ** (0.523)			
Interaction rule of law			-0.099 (0.107)		
Freedom of association				-0.227 (0.145)	
Interaction freedom of association					-0.049 (0.033)
<u>Control variables</u>					
Income inequality	0.150 *** (0.089)	0.108 ** (0.048)	0.107 ** (0.049)	0.178 ** (0.072)	0.170 ** (0.070)
Economic growth	0.084 (0.089)	0.111 (0.095)	0.138 (0.100)	-0.014 (0.133)	-0.002 (0.129)
Education	0.090 (0.083)	-0.019 (0.089)	-0.019 (0.089)	-0.047 (0.115)	-0.023 (0.113)
Linear-interpolated data					
Constant	2.491 (7.252)	-2.967 (7.449)	-2.775 (7.470)	-0.387 (9.668)	-6.160 (10.142)
Member-based organizations	-0.024 (0.065)	-0.031 (0.061)	-0.056 (0.068)	-0.031 (0.081)	0.307 (0.242)
Rule of law		-1.141 ** (0.504)			
Interaction rule of law			-0.952 (0.103)		
Freedom of association				-0.227 (0.140)	
Interaction freedom of association					-0.047 (0.032)
<u>Control variables</u>					
Income inequality	0.153 *** (0.041)	0.111 ** (0.450)	0.110 ** (0.451)	0.176 ** (0.065)	0.176 ** (0.063)
Economic growth	0.084 (0.086)	0.109 (0.091)	0.135 (0.096)	-0.012 (0.124)	-0.011 (0.120)
Education	-0.090 (0.081)	-0.0182 (0.086)	-0.019 (0.086)	-0.047 (0.112)	-0.024 (0.110)

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

Table 9: Fixed Effects Model Member-Based Organizations on Poverty

	Model 1	Model 2
Non-linear interpolated data		
Intercept	0.527 (0,807)	0.816 ** (0,277)
Member-based organizations	-0.023 (0,073)	0.011 (0,018)
Linear interpolated data		
Intercept	0.816 ** (0,277)	0.816 *** (0.133)
Member-based organizations	0.011 (0,018)	0.011 (0.010)

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

Table 10: Fixed Effect Model Rule of Law on Poverty

	Model 1	Model 2	Model 3	Model 4	Model 5
Non-linear interpolated data					
Constant	0.782 (0.093)	0.456 (0.952)	0.456 (1.048)	0.469 (0.976)	0.469 (1.010)
Member-based organizations		-0,027 (0.086)	-0,027 (0.098)	-0.029 (0.088)	-0.029 (0.092)
Rule of law	0.263 (0.332)	-0.786 (1.655)	-0.786 (1.668)		
Interaction rule of law				-0.034 (0.088)	-0.034 (0.087)
Linear-interpolated data					
Constant	1.060 (0.093)	0.903 (0.721)	0.903 (0.741)	0.936 (0.729)	0.936 (0.688)
Member-based organizations		-0.022 (0.056)	-0.022 (0.060)	-0.028 (0.058)	-0.028 (0.052)
Rule of law	0.250 (0.300)	-0.755 (1.301)	-0.755 (1.428)		
Interaction rule of law				-0.026 (0.068)	-0.026 (0.064)

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

Table 11: Fixed Effect Model Freedom of Association on Poverty

	Model 1	Model 2	Model 3	Model 4	Model 5
Non-linear interpolated data					
Constant	-0.994 (0.090)	0.574 (9.397)	0.574 (7,461)	-3.288 (11.633)	-3.288 (5.164)
Member-based organizations		-0.128 (0.486)	-0.128 (0.222)	1.222 (2.144)	1.222 (1.305)
Freedom of association	0.130 (0.105)	0.079 (1.324)	0.079 (0.079)		
Interaction freedom of association				-0.127 (0.196)	-0.127 (0.129)
Linear-interpolated data					
Constant	-0.582 (0.525)	-0.751 (2.165)	-0.751 (1.126)	-1.595 (3.358)	-1.595 (1.056)
Member-based organizations		0.047 (0.144)	0.047 (0.069)	0.111 (0.240)	0.111 (0.086)
Freedom of association	0.128 ** (0.064)	0.086 (0.237)	0.086 (0.054)		
Interaction freedom of association				-0.014 (0.040)	-0.014 (0.020)

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

Table 12: Fixed Effects Model Control Variables on Poverty

	Model 1	Model 2	Model 3
Non-linear interpolated data			
Intercept	-5.518 *** (0.742)	0.972 *** (0.074)	-5.787 ** (2.428)
Income inequality	0.157 *** (0.018)		
Economic growth		-0.007 (0.012)	
Education			-0.068 ** (0.026)
Linear interpolated data			
Intercept	-3.357 *** (0.748)	1.260 *** (0.068)	-5.409 ** (2.225)
Income inequality	0.153 *** (0.018)		
Economic growth		-0.008 (0.108)	
Education			-0.066 *** (0.024)

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

Table 13: Fixed Effects Model with Control Variables

	Model 1	Model 2	Model 3
<u>Non-linear interpolated data</u>			
Constant	-26.395 ** (9.915)	-43.626 ** (14.912)	-45.033** (16.422)
Member-based organizations	-0.093 (0.086)	0.00009 (0.111)	0.018 (0.129)
Rule of law		0.267 (1.654)	
Interaction rule of law			0.067 (0.189)
<u>Control variables</u>			
Income inequality	0.140 (0.119)	-0.056 (0.160)	-0.039 (0.190)
Economic growth	0.185 ** (0.081)	0.390 ** (0.160)	0.358 (0.193)
Education	0.226 * (0.122)	0.471 ** (0.198)	0.478 ** (0.213)
<u>Linear-interpolated data</u>			
Constant	26.100 ** (9.052)	-38.780 ** (12.537)	-41.081 (13.931)
Member-based organizations	-0.069 (0.068)	-0.004 (0.084)	0.024 (0.104)
Rule of law		0.382 (1.511)	
Interaction rule of law			0.082 (0.168)
<u>Control variables</u>			
Income inequality	0.158 (0.105)	0.011 (0.143)	0.025 (0.152)
Economic growth	0.176 ** (0.073)	0.342 ** (0.136)	0.309 * (0.157)
Education	0.214 * (0.109)	0.395 ** (0.163)	0.412 ** (0.174)

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

Table 14: Overview tested hypotheses

Hypothesis	Result	Effect	Explanation
H1 Member-based organizations	Not supported	-	A positive effect was found. Over time no effect.
Enabling environment			
H2a Rule of Law - Direct Effect	Supported	-	Over time no effect found.
H2b Rule of Law - Interaction Effect	Not supported	-	
H3a Freedom of Association - Direct Effect	Supported	-	Also over time.
H3b Freedom of Association - Interaction Effect	Not supported	-	
H4a Corruption - Direct Effect	Supported	-	Rule of law proxy. Over time no effect found.
H4b Corruption - Interaction Effect	Not supported	-	

Appendix

Appendix 1 Key features Enabling Environment

<i>Category of environmental factors</i>	<i>Key enabling features</i>	<i>Illustrative government enabling actions</i>
Economic	<p>Nondistortionary policy framework</p> <p>Encouragement of free markets and open competition</p> <p>Supportive of investment (including physical security)</p> <p>Low transactions costs, credible commitment</p>	<p>Reducing red tape and unnecessary regulation</p> <p>Managing macroeconomic policy to control inflation, deficit spending, and ensure stability</p> <p>Reducing tariffs, barriers to investment ("level playing field")</p> <p>Investing in physical infrastructure (roads, transportation, etc.)</p> <p>Controlling criminality (e.g., mafias) and violence</p>
Political	<p>Democratic system that supports pluralism, accountability, transparency, and responsiveness</p> <p>Processes that encourage participation, social contract, and state legitimacy</p> <p>Rule of law, contract enforcement respect for human rights and property rights</p>	<p>Conducting free and fair elections</p> <p>Making information widely available, promoting free media</p> <p>Devolving power and resources to subnational levels of government</p> <p>Limiting power and influence of interest groups</p> <p>Supporting civil society</p> <p>Assuring judicial independence</p>
Administrative	<p>Efficient service-delivery capacity</p> <p>Low levels of corruption</p> <p>Institutional checks and balances</p> <p>Decentralization</p> <p>Civil service meritocracy</p>	<p>Curbing abuse and corruption</p> <p>Creating incentives for performance</p> <p>Separating service provision from financing</p> <p>Building cross-sectoral partnerships</p> <p>Establishing monitoring and evaluation systems</p> <p>Improving coordination across agencies and sectors</p>
Sociocultural	<p>Presence of social capital and trust</p> <p>Tolerance of diversity</p> <p>Norms of inclusiveness, equity, and fairness</p> <p>Belief in the value and efficacy of individual effort</p>	<p>Supporting marginalized and disadvantaged societal groups—pro-poor affirmative action, need-based subsidies, safety nets, etc.</p> <p>Encouraging civic dialogue, social compacts, and consensus building</p> <p>Discouraging ethnic-based politics and policies</p> <p>Controlling violence (e.g., ethnic cleansing)</p>
Resources	<p>Policies and investments in health, education, workforce development, information technology, science, and research</p> <p>Adequate funding and institutional capacity</p>	<p>-Setting policies and incentives that encourage private investment and corporate social responsibility</p> <p>Allocating public resources to ensure maximization of social and economic potential</p>

Source: Brinkerhoff in Brinkerhoff, Smith & Teegen (2007, p. 87)

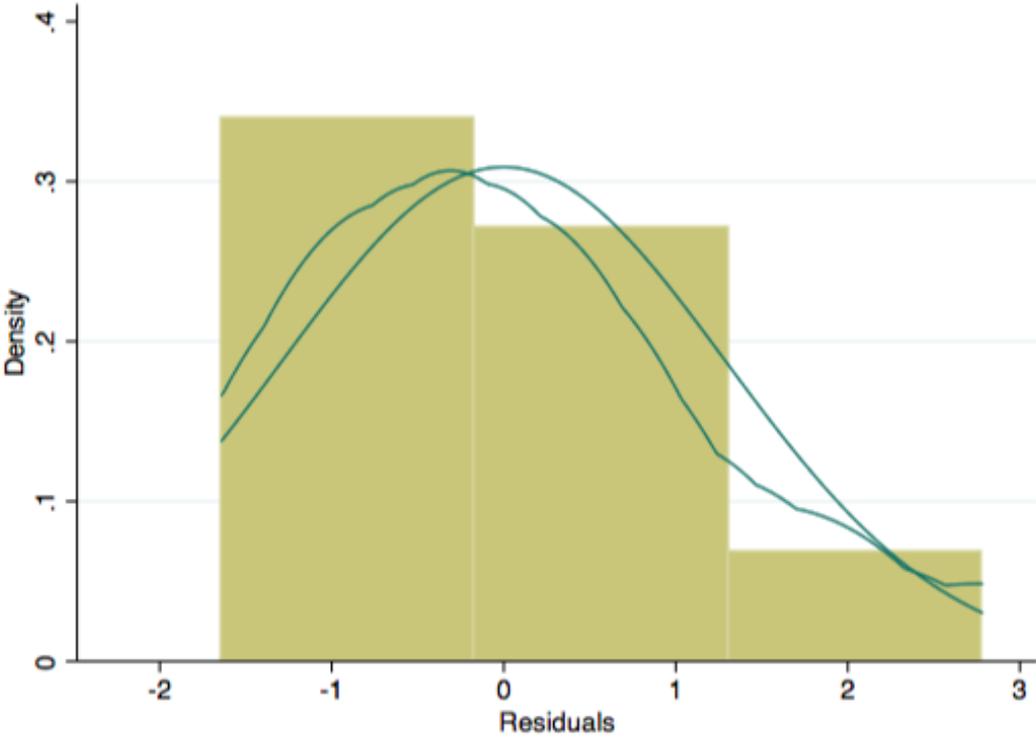
Appendix 2 White's test OLS regression

Appendix 2.: White test OLS regression

	Member-based organizations	H0 hypothesis	Rule of law	H0 hypothesis	Freedom of association	H0 hypothesis	Corruption	H0 hypothesis
Poverty - direct	0.2761	Accepted	0,4388	Accepted	0.7559	Accepted	0,2873	Accepted
- indirect			0,7360	Accepted	0.8956	Accepted		Accepted
PovertyIn - direct	0.6683	Accepted	0,5779	Accepted	0.7361	Accepted	0.4615	Accepted
- indirect			0,7645	Accepted	0.8962	Accepted		Accepted

H0 = homoscedasticity, with $p < 0.01$; two tailed.

Appendix 3 Normal distribution residuals



Appendix 4 Correlation matrix

Appendix 4.1: Correlation matrix with all independent variables

	Member-based organizations	Rule of law	Freedom of association	Corruption
Member-based organizations	1.000			
Rule of law	0.103	1.000		
Freedom of association	0.175	-0.181	1.000	
Corruption	0.093	0.775	-0.375	1.000

Appendix 4.2: Correlation matrix without corruption

	Member-based organizations	Rule of law	Freedom of association
Member-based organization	1.000		
Rule of law	-0.055	1.000	
Freedom of association	0.038	-0.485	1.000

Appendix 4.3: Correlation matrix rule of law and corruption

	Rule of law	Corruption
Rule of law	1.000	
Corruption	0.925	1.000

Appendix 5 Multicollinearity

Appendix 5.1: VIF and tolerance all independent variables

	VIF	Tolerance
Member-based organizations	1.06	0.940
Rule of law	2.60	0.385
Freedom of association	1.27	0.789
Corruption	2.95	0.339

Appendix 5.2: VIF and tolerance without corruption

	VIF	Tolerance
Member-based organizations	1.01	0.992
Rule of law	1.32	0.760
Freedom of association	1.31	0.761

Appendix 6 OLS Regression Control Variables on Poverty

Appendix 6: OLS Regression Control Variables on Poverty

	Model 1	Model 2	Model 3
Non-linear interpolated data			
Intercept	2.379 ** (1.140)	23.857 (12.425)	23.857 (13.570)
Member-based organizations		-0.096 (0.216)	-0.096 (0.193)
Corruption	-0.055 ** (0.025)	-0.628 (0.290)	-0.628 (0.301)
Linear interpolated data			
Intercept	2.122 * (0,026)	0.484 (5.400)	0.484 (4.559)
Member-based organizations		0.167 (0.113)	0.167 (0.126)
Corruption	-0.046 * (0.026)	-0.048 (0.150)	-0.048 (0.158)

*=p<0.1; **=p<0.05; ***=p<0.01; two tailed.

