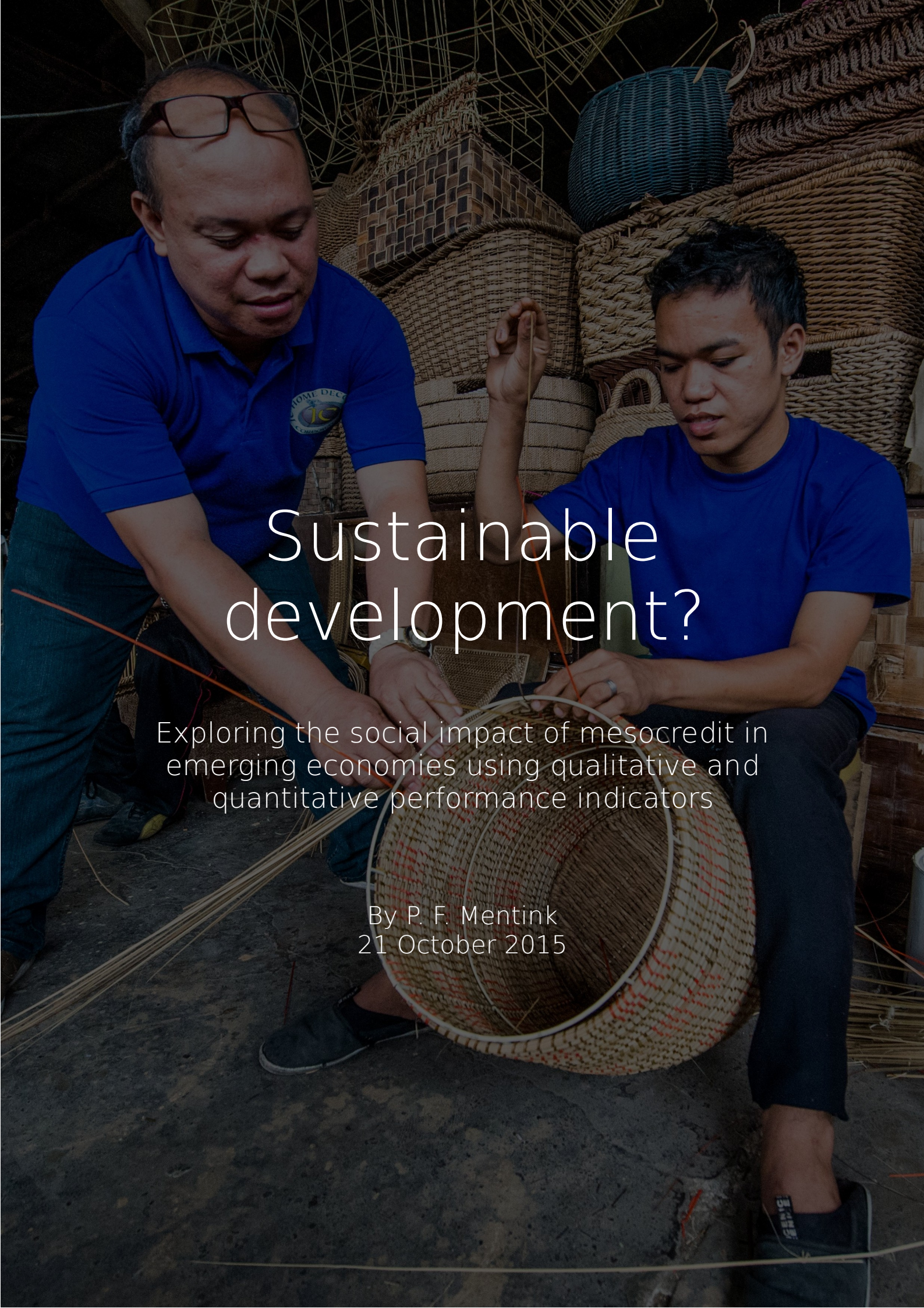

Sustainable development?

Exploring the social impact of mesocredit in emerging economies using qualitative and quantitative performance indicators

By P. F. Mentink
21 October 2015

Sustainable development?

Exploring the social impact of mesocredit in emerging economies using qualitative and quantitative performance indicators

By P. F. Mentink

21 October 2015

Title	Sustainable development?
Subtitle	Exploring the social impact of mesocredit in emerging economies using qualitative and quantitative performance indicators
Date	21 October 2015

Author	P. F. Mentink mail@dinandmentink.com
Student Number	S0199516

Master	Industrial Engineering and Management
Track	Financial Engineering and Management

Supervisor	R. A. M. G. Joosten University of Twente
Second Supervisor	B. Roorda University of Twente
External supervisor	T. K. The Lendahand
Institute	University of Twente
Company	Lendahand

1 Management summary

Lendahand provides loans to small and medium sized enterprises (SMEs) in emerging economies. By doing so they help them to expand, which in turn generates jobs in their operating region. These loans are called mesocredits and this thesis started with Lendahand's wish to gain more insights into the social impact of their mesofinance loans. In this research we will look at the social performance of Lendahand's portfolio in the Philippines and Colombia in 2014. The main question to be answered is

> *What social performance does Lendahand's mesocredit portfolio have when measured on key performance indicators?*

This thesis works with the model of the Impact Chain as a generic way to describe social performance. The Impact Chain states that the social performance of an organisation follows three stages: an organisation has a program with some *outcome*, this has some direct *effect* and this in turn generates a wider *impact*.

We then describe the social impact of microcredit. Microcredit is similar to mesocredit but more extensively described in literature. Microfinance has a social goal of providing better access to financial services for the poorest of the poor. The poor are in a so-called "triple whammy": they have very low as well as irregular income and no financial services. Microfinance helps to smoothen income over time and offers means for bigger one time expenditures.

From there, a working description and definition of mesocredit is formulated. In emerging economies there exists a "missing middle", these are the SMEs that are too large to get a loan at a microfinance institution (MFI), but are still too risky to get one at a bank. Mesocredits are loans disbursed to this type of SMEs in emerging economies. By giving SMEs in emerging economies access to finance targeted to their needs they are hypothesised to be able to expand and generate jobs. Mesocredit can be seen as the extended version of microcredit in terms of loan size, lenders and usage. We then formulate an Impact Chain for mesofinance.

We introduce the Impact Chain Integrated Model, a combination of the Impact Chain and qualitative and quantitative performance indicators that are derived from microfinance. In the case of Lendahand the Impact Chain can best be described as "loans are disbursed to SMEs in upcoming countries" (outcome), "allowing them to expand" (effect), "in turn allowing them to generate jobs" (impact). The Impact Chain Integrated Model uses key performance indicators to measure all stages along the Impact Chain qualitatively as well as quantitatively. We can describe the extent of outcome, effect and impact as well as their exact nature. An advantage of using the Impact Chain Integrated Model is that it gives clear insights in the social performance of a program using relatively few data, but that more complex relationships can be researched by adding data. Furthermore, it structures and clarifies the social impact reporting and offers possibilities for hypothesis testing.

In the outcome stage financial "loan output indicators" were used to get clear insight in the product being offered by Lendahand's local partners. In the effect stage turnover increase was measured to quantify the growth of companies. In the impact stage the increase of workforce was measured. In all three stages qualitative data were used to gain further insight on loans disbursed, the growth of companies and the jobs created. These qualitative data consisted of structured interviews with local entrepreneurs that had received a loan. Gathering exactly the relevant data, and nothing more, was key in this research. We want to have as much relevant information about Lendahand's social performance while placing minimum administrative burden on the local partners.

When comparing the data from the Philippines and Colombia with the benchmarks we find a consistent picture. Lendahand, in collaboration with its local partners offers a product which has the characteristics required to help local entrepreneurs expand business. Local entrepreneurs were content with the service being offered. SMEs funded through Lendahand grew, on average, with 15% above the macro-economic growth in the year they received a loan, both in Colombia and on the Philippines. Local entrepreneurs also stated that the loan had helped them to expand their business. The cash was often used to buy raw material, equipment or to serve customers' wishes better by being able to buy items in advance of demand.

The social impact was also substantial. In Colombia 2,06 and on the Philippines 3,92 jobs were created for every €10.000 lent. Both are more than the number of jobs generated on average in the microfinance sector to which we compare Lendahand's portfolio (1.19 for Colombia and 1.13 for the Philippines). Local entrepreneurs also state that they were able to generate jobs, providing their employees with a stable source of income.

After describing the social impact Lendahand has generated we looked at this impact from the perspective of an investor. We concluded that there are some economies of scale present in the social performance generated. The first is that companies, once they reach a certain size, will be able to access better ways of financing themselves. The second is that repeat-loans have different characteristics, but for various reasons they usually outperform first time loans.

We also checked the assumptions underlying Lendahand's Impact Chain, the first being that providing better financial products will help entrepreneurs to expand their business. Although this relationship is hypothesised in literature we could not prove it using the data available, so more research on this might provide more insights. The second assumption is that turnover growth will lead to job generation. This assumed relationship is found in literature and we also found a significant positive association between growth in company turnover and number of employees.

We then compared Lendahand's impact to other job creation schemes and found that more research is required to draw a conclusion on Lendahand's impact effectiveness compared to other ways of generating jobs.

2 Glossary

FTE	Full-time equivalent
KPIs	Key performance indicators
Mesocredit	Loans targeted towards small and medium sized enterprises
Mesofinance	Financial services targeted towards small and medium sized enterprises
MFIs	Microfinance institutions
Microcredit	Loans targeted towards poor households
Microfinance	Financial services targeted towards poor households
NBFIs	Non-bank financial institutions
SMEs	Small and medium sized enterprises

3 Table of contents

4 Introduction

Lendahand is a growing financial enterprise offering credits to entrepreneurs in economically challenged regions. These credits are financed by crowdfunding. Individuals and institutional investors can make direct investments in an enterprise in developing countries through Lendahand. For local transactions Lendahand uses carefully selected field partners. Interest is offered to the crowd-funders.

The credits offered are large compared to the more common microcredits. A common name for these types of loans is “mesocredit” or sometimes “the missing middle”. The difference between microcredit and mesocredit is one of size, lenders, usage, social effects and social goal. Microcredits are loans on the household level where mesocredits are loans for small and medium-sized enterprises (SMEs). A further discussion of the difference between microfinance and mesofinance is given in Section 8.1.

As a social enterprise Lendahand aims to have a positive social impact through mesocredits in the regions where they are active. Because of the social background mentioned Lendahand is interested in gaining insights in the social performance of their loans. Some questions, both qualitative and quantitative need answering: “What types of social impact do mesocredits have?”, “How does this compare to microcredits?”, “What are key factors that have a positive effect on social performance?”

Lendahand has already made progress in this by working on a report on their social impact in the Philippines. There is however, room for more research. In this thesis I aim to provide a more thorough foundation in scientific literature, a focus on broader impact and the quantification of effects.

In the next few Sections we will look at the difference between effect and impact, the quantification of social performance, the way the research in this thesis is structured as well as the main obstacles.

4.1 Effect versus Impact

In impact reports a distinction can be made between *outcome*, *effect* and *impact*. *Outcome* is the set of actions undertaken. These actions generate some direct observable *effect*. In the case of microcredit measures of effect include, amongst others, “household-spending growth”, “number of toilets bought” or “spending on education”. In the case of mesocredit measures for effect could be “turnover growth”.

These measures, by their nature, do not explicitly say something about the broader impact a project has in the region. *Impact*, such as economic growth, a higher literacy rate, a stronger middle class or better infrastructure, is the ultimate goal of development work. It is, however, exactly this type of broader *impact* which is often missing from “impact reports”. This is not surprising. Data are often scarce and causality is hard to prove.

4.2 Quantitative effects

The report Lendahand is currently working on is quite qualitative in nature. This has a few reasons. For one, storytelling and qualitative information are more valuable for marketing purposes. Another reason is the available data. The availability of hard data from funded SMEs, such as balance sheets, or profit and loss accounts, is limited. Researchers often have to fall back on questionnaires, even for simple questions such as “Did a company grow?”. Although these qualitative data give relevant insight into the impact of Lendahand's mesofinance, for a scientific understanding of their program quantitative data is also required.

4.3 Research structure

In this thesis we look at the impact generated by microcredit and mesocredit using the conceptual model of the “Impact Chain”. This model was introduced by Hornsby (2004) allow for transparent reporting of social impact. An Impact Chain can be used as a valuable frame to describe how an organisation generates social impact. This model will be further discussed in Chapter 6.

The use of an Impact Chain is not prevalent in scientific literature we will see that there are advantages in using it as a model. The Impact Chain offers a clear way to describe causality between the actions undertaken by an organisation and their corresponding social impact. This in turn allows for the selection of relevant KPIs for social impact reporting, as well as a frame for hypothesis testing, which is exactly what we will do in this research.

In this thesis we first look at a generic Impact Chain, that will then be used to describe the social impact of microcredit, a well-known form of financing which has been described extensively in scientific literature in, Chapter 7. After we have a clear description of microcredit using an impact chain we look at the Impact Chain for microcredits' bigger brother mesocredit, which is not described widely in literature, in Chapter 8. Based on the Impact Chain for mesocredit we introduce a model for the social impact reporting of Lendahand's mesofinance in Chapter 9. Lendahand's social performance, as measured on key performance indicators, be discussed in Chapter 10. In Chapter 11 we look at this social performance from the perspective of the investor by testing the hypotheses underlying mesocredits' Impact Chain, discussing the effectiveness of mesocredit and describing non-linearity effects involved.

4.4 Main challenges

The main challenge in this research is the data gathering, described in Section 9.4. Key to understanding as much as possible about Lendahand's social impact without placing too large an administrative burden on their local partners is gathering the right data, and nothing more. To deal with this challenge the Impact Chain Integrated Model is introduced in Section 9.3. The Impact Chain Integrated Model helps by providing easily understandable, concise and readily available KPIs to gather exactly the information describing Lendahand's social impact using relatively few data. The same data can later be used to test the hypothesised relationships between Lendahand's business and the resulting social impact.

5 Main questions

Lendahand has asked to do this research because they want to gain an understanding of the social performance of their mesofinance product. From a management perspective it is good to know how social impact is created. When investment decisions have to be made, one of the factors to be considered by Lendahand is its social impact. When we gain more insight into this impact we can take betterinvestment decisions. There are also marketing purposes to having insight into social impact. The crowdfunders supplying funds to entrepreneurs through Lendahand do so partly because of the social impact it generates. Being able to show the extent of this social impact will help Lendahand in their marketing efforts.

The main topic of this research is to describe Lendahand's social impact using key performance indicators (KPIs). KPIs describing Lendahand's social impact can be used as a management tool or for marketing purposes.

> *Main question:*
>
> *What social performance does Lendahand's mesocredit portfolio have when measured on key performance indicators?*

We will break this main question down in 6 subquestions.

Before we take a look at different ways social impact of microfinance or mesofinance is measured we first want to gain more insight in the way social performance is measured in general. To do this the generic model of an impact chain as introduced by Hornsby (2004) is described. This Impact Chain model provides a good frame to describe the way in which any social purpose organisation is able to generate impact. I will use the Impact Chain as a tool to describe the way in which microfinance and mesofinance generate positive impact.

Subquestion I:

How can we describe and frame the social impact from any organisation?

- What different stakeholders are there and what kind of reporting do they want?
- How can we describe the relationships between what an organisation does and the social impact they claim to have?

This question will be answered in Chapter 6. First a description of the impact chain is given. Hornsby (2004) introduces the Impact Chain as a way to transparently describe the differences in social impact between social purpose organisations. My addition is to use this impact chain for scientific purposes by using it as a frame for the relationship between what an organisation does and the impact it has by doing so.

From this description of the Impact Chain we continue with the quantification of the social impact of microcredits. Because *mesocredit* is not a prevalent subject of scientific literature the starting point for research on the aforementioned is the literature available on *microcredit*. There is a decent body of research about microcredits which recently is gaining interest in the scientific community (Brau & Woller, 2004). Some studies on the impact of microfinance have been published in peer-reviewed journals. Some describe positive impacts of microcredit in some regions (McKernan, 2002; Pitt & Khandker, 1998), others find tradeoffs in different types of impacts (Mosley & Hulme, 1998), others fail to find significant impacts (Coleman, 1999). Numerous papers describe a regional impact study for microfinance (Afrane, 2003; Anderson et al., 2002; Barnes et al., 1999; Coleman, 1999; Copestake et al., 2001; Kevane & Wydick, 2001; Mosley & Hulme, 1998; Mosley, 2001; Smith, 2002; Woller & Parsons, 2002; Wydick, 1999, 2002). These will serve as a basis for my thesis. Different indicators are used in this literature giving different insights into the impact of microfinance. Because there is no specific literature on the topic of mesofinance, mainly a term used in practice (Budjhawan, 2014; Dieckmann, 2007) my first step for creating a model for *mesofinance* is describing the quantification of social impact from *microfinance*.

Subquestion II:

How can the social impact of microcredits be quantified?

- What is the relation between the granting of microcredits and their hypothesised social impact?
- What indicators are used in scientific literature to describe the social impact of microcredits?
- What does the Impact Chain of microfinance look like?

These questions will be answered in Chapter 7. Although there are descriptions of microcredits' social impact in scientific literature, no clear frame for this has been introduced so far. My main addition is to introduce such a frame using the Impact Chain which describes in a structured way how microfinance generates impact.

After gaining insight in the Impact Chain of microfinance we will continue with the social impact of mesofinance. I want to describe the social impact of mesocredit specifically, even though it is not a prevalent subject of research like microcredit. Therefore a good definition and description of mesocredit is required and will be given to serve as a basis to translate measures of impact for microcredit to corresponding measures of impact for mesocredit. This will be done based on descriptions of mesocredit that are used in practice (Budjhawan, 2014; Dieckmann, 2007; Lützenkirchen & Weistroffer, 2012).

Subquestion III:

How can we best describe and define mesofinance?

- Which descriptions and definitions are used for mesofinance in practice?
- What are the key differences between mesocredit and microcredit in financial terms, social goal and target audience?
- What does the Impact Chain of mesofinance look like?

These questions will be answered in Chapter 8. So far very little is known about mesofinance in scientific literature. My main addition is describing how mesofinance works, based on the literature that *is* available in peer reviewed

journals combined with descriptions of mesofinance that can be encountered in practice. After this, the way mesofinance generates social return is structured in an impact chain.

After having introduced an Impact Chain for mesofinance we will translate the described measures for social impact for microcredit to corresponding measures for mesocredit. This is my main addition to scientific literature upon which my main addition to Lendahand can be based.

> *Subquestion IV:*
>
> *How can the models and indicators used for the measurement of social impact of microcredits be translated into a model for social impact of mesocredits?*

- How can we model social impact for mesocredits?
- What indicators should be used in this model?
- How should we gather data?
- What benchmarks should we use?

We will look at answers to these questions in Chapter 9. My main addition in this Section is setting up ways to gather data, as well as using readily available data. KPIs and benchmarks that give insight into Lendahand's mesofinance portfolio in a reliable way are then formulated.

A scientifically perfect model usually is a disaster in practice, especially in this case. This is because hard data are often scarce, communication with field-workers is difficult, differences in culture are large and even the most basic instruments for financial measurement, such as balance sheets, are often missing. I will therefore spend quite some time finding ways to gather relevant data from the field which are sustainable and relevant for evaluation. Based on this I will give insight into the social effect of Lendahand's mesocredit portfolio. Such a report must be repeatable in order to form a valuable management tool for evaluation as well as a justification towards investors. This data gathering proved to be my main challenge in writing this thesis.

After setting up a way to gain insight into the social performance of

Lendahand's mesofinance portfolio the data gathering is performed and the results are discussed.

Subquestion V:

What is the social impact of Lendahand's mesocredit portfolio?

- What can be said about the social effect of Lendahand's mesocredit portfolio based on the measures introduced?
- How does Lendahand score on social impact when measured on key performance indicators?

These questions are answered in Chapter 10. My main addition in this Chapter is performing the data gathering, analysing the data that is already gathered and providing a discussion of the results.

Finally, there are a few questions open for debate, mostly from the perspective of the investor. An investor wants to know whether the hypothesised relation between mesofinance and its social impact is justified. Furthermore an investor might have questions on the linear nature of this effect. In the final Section a comparison between mesofinance and other ways to generate the same type of impact is provided.

Subquestion VI:

How does Lendahand perform in social impact objectives from the perspective of an investor?

- Can we defend the hypothesised relations between the provision of mesofinance and the generated impact?
- Are the hypothesised relationships linear? If not, what non-linearity effects are involved?
- How does Lendahand's mesofinance portfolio compare to other ways of generating the same social impact?

We first discuss a generic way in which social performance is described in practice. To do this we take a look at the frame provided by the Impact Chain, as introduced by (Hornsby, 2004). After that we take a look at the hypothesised

reasons how microfinance and mesofinance create their social impact. We do so in a structured way using the Impact Chain as a frame. After that we look into the measurement and comparison of the social performance of mesofinance using KPIs and benchmarks in a structured model. Then it is time to take a look at Lendahand's mesocredit portfolio using the model introduced. At the end of this thesis we will take some exploratory steps to see what non-linearity effects might be involved. We will also take some first steps to prove the hypothesised relationship between providing mesofinance and creating social impact. This thesis then concludes by taking a look at another way in which the same social impact could be generated and comparing Lendahand's mesocredit portfolio with it.

6 The Impact Chain

Before we discuss the way microfinance or mesofinance generate social impact we will first describe a way in which social impact studies can be structured. A model that frames the social impact of goodwill initiatives that is used in practice comes from the Good Analyst Measurement Guide (Hornsby, 2004). This model is applicable to traditional goodwill initiatives, operating from grants to provide some social service, as well as social enterprises, profit-seeking businesses that use a double bottom-line of both financial and social profit.

Hornsby (2004) introduces his framework as a way for social purpose organisations to describe and report their performance. The main goal of his framework is to facilitate transparent and comparable reporting between organisations.

The framework given by Hornsby (2004), called the “impact chain”, deals with *organisation*, *output*, *effect* and *impact*[1]. The *organisation* partakes in activities, it has *output*. This *output* in turn has a social *effect*, the direct participants are helped in a direct way. This social *effect* in turn has a wider social *impact*. These interrelating steps are called the organisation's Impact Chain and are illustrated in Illustration 1.

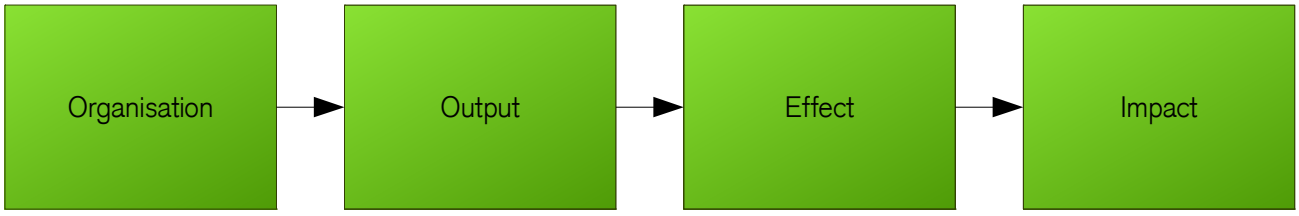

Illustration 1: Graphical representation of an Impact Chain.

This basic model can be extended to incorporate measurement instruments and reporting to relevant stakeholders (Hornsby, 2004). To say something about the social effect and impact of an organisation indicators are used to quantify results. These results are used in the organisation to improve their operations, as well as outside the organisation by stakeholders in capital

1 In fact, Hornsby introduces the framework using the terminology activities → outputs → outcomes. In this thesis we will instead use the terms output → effect → impact. This has two reasons: I believe these terms to be clearer, and, they are the same terms that were already used by Lendahand in draft versions of previous research.

allocation decisions. The full framework, including the aforementioned feedback mechanisms, for impact measurement in the impact chain, as proposed by the Good Analyst Measurement Guide (Hornsby, 2004), is graphically summarised in Illustration 2. This is a generic Impact Chain that can describe the social impact of any organisation, both non-profit and profit-seeking.

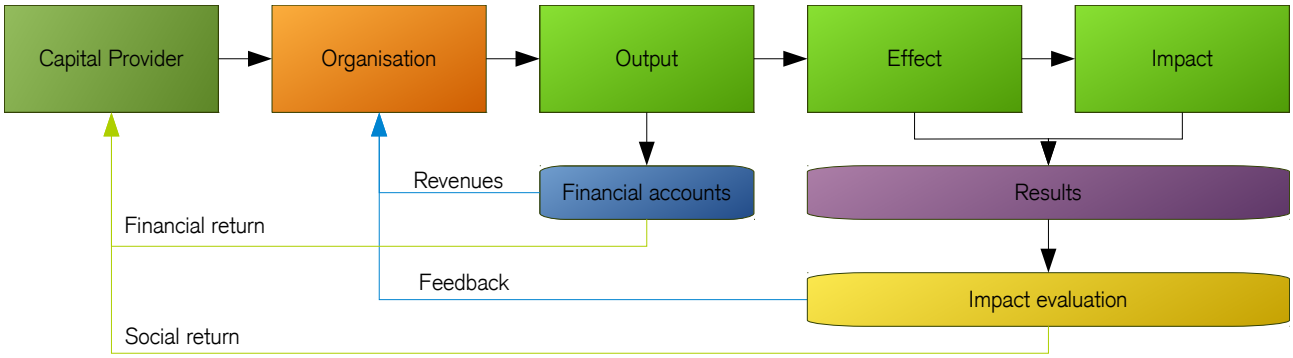

Illustration 2: Graphical representation of an Impact Chain with feedback

This framework is used in practice by different non-profit organisations[2] and social enterprises as a way to report their social impact transparently and comparably. It is, however, not used for scientific purposes. I would argue that using the Impact Chain for scientific purposes would provide benefits. The main benefit from this framework is that the hypothesised causal relationships between the actions undertaken and the resulting impact are clear. As we will see later on the research on the impact of microfinance lacks a common frame. Different papers use different variables to describe different types of impact of microfinance. Of course, in these papers it is quite clear which impact is being researched and how it is done, but it can be quite hard to compare results across papers. The Impact Chain offers a solution for providing a very straightforward frame for the social performance to be measured. In this way the Impact Chain would be a relevant addition to scientific literature as a tool in social impact research.

My main addition in this regard is to introduce the Impact Chain as a way to structure social performance research in the field of mesofinance. Further on in this thesis we will look at a description of microfinance structured in an Impact Chain, as well as a description of mesofinance structured in an Impact Chain.

2 Investing for Good, publishers of Hornsby (2004) list a series of case-studies on their website http://investingforgood.co.uk.

The “Impact Chain Integrated Model”, a framework to describe the social performance for mesofinance, that will be introduced in this thesis is based on the model introduced by Hornsby (2004) combined with relevant qualitative and quantitative KPIs that describe the performance of mesocredit along every stage of the Impact Chain.

7 Microcredits' social impact

After having described a way we can use to structure social impact reporting in general, using the Impact Chain, we will now discuss microfinance and the way it works in favour of poor households. We proceed by framing the impact of microfinance using an Impact Chain.

Microfinance entails the provision of financial services on household level to the poor (Afrane, 2003). Microfinance encompasses saving as well as insurance and credit products, tailored specifically to the need of poor households (Budjhawan, 2014). The bulk of all microfinance takes the form of microcredit, up to the point that microfinance is often used as a synonym of microcredit (Brau & Woller, 2004). In this research we use the following definition of microfinance:

> *Microfinance is the targeting of reliable financing services, most notably loans, to poor households in economic challenging areas on the household level.*

Microcredit can be seen as a strategic assistance of the “working poor” (Afrane, 2003). It helps them manage their cash in a more efficient way. The poverty-stricken often spend a lot of time managing their cash, because there is so little of it. They can be seen as very active money managers (Budjhawan, 2014). Microcredit helps to solve the “triple whammy” of low income as well as irregular income and a lack of reliable financial services to manage unpredictable cash flows (Budjhawan, 2014). Low income households are substantially less likely to have access to saving products (Beverly & Sherraden, 1999). Microcredit is often a substitute for the latter, allowing recipients to “save afterwards” (Armendariz & Morduch, 2000).

The process and structure of microfinance disbursement is usually extremely efficient, with minimal credit checks and paperwork. To increase repayment-rates, a zero-tolerance policy is usually used, even one cent late for one day is unacceptable. Often this is combined with sharply declining interest rates for subsequent loans (Bauchet & Morduch, 2011). In this way the first loan serves as a credit-worthiness check. Operating in this manner lowers the costs for

microfinance somewhat, and thus decreases the interest rates charged.

Difficulty in obtaining finance is a major constraint on the development of small contractors in developing countries (Eyiah, 2001). Households do receive (irregular) aid but do not have access to formal finance. Contractors are unable to make an informed case for bank loans because of their generally poor managerial and technical background. Also, contractors often have a lack of collateral to offer. This all increases the cost and risk to formal financing institutions. Microcredit helps small business to grow, thereby promoting economic development in a region through the addition of liquidity and increased possibility for larger one-time expenditures from poor households (Eyiah, 2001).

Microcredit is deemed to have significant positive impact on business income on a household level, life-enhancing facilities and the empowerment of the poor, especially women (Afrane, 2003). Apart from many positive reviews of microfinancing there are also causes for concern mentioned in literature, a few of which I shall describe.

An often mentioned problem is how most microcredits start repaying before the revenue from a project is due (Armendariz & Morduch, 2000). This type of credit helps on a household level to smooth expenses, but it is less relevant for business expansion. Armendariz & Morduch (2000) also mention that to determine the maximum loan size often only measures of the current household income are taken into account, not the project or business to be undertaken. Again, these are characteristics that make sense when providing loans for personal or household expenditures, but not from a business-growing perspective (Armendariz & Morduch, 2000).

Other papers stress that microcredit can cause domestic abuse, social disruption or exacerbated gender conflict (Buckley, 1997).

Another problem mentioned in literature is that microcredit programs often target the middle and upper segment of “the poor”. This is usually done from a sustainability perspective. Targeting only the upper segments of “the poor” might, however, increase differences between these segments. And thus, a recognition for the heterogeneity of the poor is required (Eyiah, 2001). Non-governmental organisations (NGOs) should not delude themselves that they

can in all cases, in all settings, and with even the poorest clients achieve true sustainability without compromises on their social outreach goals (Eyiah, 2001).

It is precisely from this economic perspective that microfinance institutions (MFIs) are increasingly shifting their focus from micro-enterprises to SMEs (Afrane, 2003). Sometimes this trend is named “mission drift” (Mersland & Øystein Strøm, 2010): terminology that implies that the aforementioned trend is something negative, but from a business perspective it makes sense (Eyiah, 2001). From a social impact perspective targeting SMEs might also make sense: the poor are often seen as “micro entrepreneurs”, but most will claim a preference for a government job when asked. Government employment in poor countries means the most stable source of income available in those countries. This suggests that these workers are not, at heart, entrepreneurs, and would rather have a stable income. They seem to be entrepreneurs by necessity, not choice (Budjhawan, 2014).

Grosh & Somolekae (1996) end with a question. “How can micro-enterprises foster the development of an industrial sector or large enterprise sector?”. The macro-economic force of micro-enterprises is indeed questionable. This is where mesofinance comes in. By targeting SMEs specifically, with services tailored to their needs, enterprises can expand, in turn allowing economic development in a region by creating long-term sustainable jobs.

7.1 Alternatives to microfinance

What is impact? The impact of any social program is the difference between being there, and not being there. Before continuing with formalized models and indicators of the impact of microfinance it makes sense to look at the alternative “services” that are available to the poor for financing needs.

A distinction is made in literature between the formal, informal and semi-formal financing sectors (Bhatta, 2001). The formal sector consists of established banks and insurance companies. Informal means lending from friends, family or moneylenders. MFIs and NGOs form the semi-formal sector, an institutionalized sector of financial services tailored to the needs of the poor.

Credit and other products from the formal sector, such as savings accounts or insurances, are usually unavailable to micro-enterprises and SMEs. The informal sector offers loans of the “no questions asked”-variety, but usually at very high interest rates (Bhatta, 2001).

Buckley (1997) lists many different types of credit in the informal sector, some of which are quite surprising. Store-credit at merchants is quite a common form of credit. Some artisans employ fee-paying apprentices as a form of credit. In such a construction an apprentice would pay a regular fee in return for being allowed to work on an artisan's projects, in the hope of one day becoming an artisan himself. Moneylenders must of course be mentioned, they are quite common in most developing countries. The type of loans from moneylenders such as loan-sharks, payday lenders and bombays are often called exploitative (Bhatt & Tang, 2001).

In some developing countries there are so-called “rotating savings and credit associations” (ROSCAs), where participating households come together regularly and deposit a fixed sum in a common pool which is then distributed to one participant in a rotating way. Also known are “accumulating savings and credit associations” (ASCRAs) which are local initiatives to save for some common goal such as a new church or school. Often participants can borrow from such pools as well.

Other types of informal financing are individuals that extend their (institutional) savings account to other parties, effectively becoming a micro-bank. It is interesting to note that in areas with too little finance available individuals that have access to microfinance or formal finance engage in arbitrage (Coleman, 1999).

It must be noted that much of this informal-sector financing is, by its nature, very local and often differs over geographic region or time. Much credit takes non-financial forms in the informal sector.

Key to understanding the rapid growth of the semi-formal sector of finance in developing economies is the need for reliable and available financing against fair conditions for micro-enterprises and SMEs.

7.2 Impact measurement literature overview

With a total estimated loan volume of $25 billion the microfinance sector is substantial, but small compared to established markets. With this total volume it is only able to serve some 10% of its demand (Dieckmann, 2007). It is estimated that the total demand for microfinance ranges up to $250 billion (Dieckmann, 2007). With volumes like these and the inherit claim for social impact that microcredit has it comes as no surprise that there is a large body of research on impact measurement (Goldberg, 2005). An increasing number of programs is sponsored by governments and donor agencies (Dieckmann, 2007). MFIs have a “double bottom-line” of social as well as financial goals. Traditionally only the financial goals have been monitored using standard accounting practices (Coleman, 1999). However, policy makers, donors and investors have a legitimate interest in assessing the social return on investments in MFIs which has led to a number of publications in peer-reviewed journals on the topic of impact measurement (Mosley, 2001).

Most impact studies focus on a niche, usually a geographic region. Several publications deal with the impact of microfinance in Bangladesh. McKernan (2002) describes the role of microfinance on self-employment benefits in the rural regions of Bangladesh to be positive and large. Pitt & Khandker (1998) describe a significant impact on well-being of poor households, especially when credit is targeted towards women. They are not the only ones to research the specific topic of female empowerment from microfinance in rural Bangladesh. At least six other studies also do so (Amin et al., 1998; Goetz & Gupta, 1996; Hashemi et al., 1996; Schuler et al., 1998, 1997; Schuler & Hashemi, 1994)

Besides Bangladesh impact studies have been done in Zambia (Copestake et al., 2001), Uganda (Barnes et al., 1999), Thailand (Coleman, 1999), Honduras and Ecuador (Smith, 2002), Guatemala (Wydick, 1999), Ghana and South Africa (Afrane, 2003), China (Ren & Ren, 2001) and Bolivia (Mosley, 2001).

How do these studies measure impact? Afrane (2003) states that both qualitative and quantitative data are required because quantitative data do not reveal the perceptions of participants. In this research focus group sessions are used to capture the qualitative dimensions of life. In the same study the

quantitative data comes from surveys. Adams & Pischke (1991) state that there are limitations to purely quantitative or qualitative approaches. They suggest a participatory approach as an effective means of collecting high-quality qualitative data. For their research they use qualitative data to capture social indicators and quantitative data to capture economic indicators.

Many impact studies use new lenders as a control group to compare against repeat-lenders. Although this is quite understandable because of the high costs involved in field-research, it is stressed in multiple papers that this is a bad practice as it introduces selection bias (Coleman, 1999; Karlan, 2001).

Based on this literature there are many recommendations to be made. Bhatt & Tang (2001) suggest to be culture-sensitive and not only copy successful programs from elsewhere. They also propose specifically targeting the entrepreneurial, upper segment of the poor. Furthermore a recommendation is made to keep transaction costs low with decentralized and quick loan approval without extensive paperwork. A culture of self-governance and participatory development in group-based programs can go a long way in decreasing transaction costs. They also stress savings mobilization and training as part of any microcredit program.

It must be noted that literature often focusses on high repayment rates, which is good from a financial perspective, but not necessarily from a perspective of borrower welfare (Coleman, 1999).

In the end there is no clear consensus in scientific literature on the positive effect of microcredit. Some papers are quite critical (Adams & Pischke, 1991; Bhatta, 2001; Buckley, 1997), others have a positive view (Afrane, 2003; Barnes et al., 1999; Copestake et al., 2001; Eyiah, 2001; Stupnytska et al., 2014).

7.3 Models and indicators

As a basic model for the relation between social and financial performance I will use the concept introduced by Copestake (2007). He describes an inverse relationship between financial and social performance for MFIs. When social performance increases this has an adverse effect on financial performance and

vice versa, an increase in financial performance yields lower social performance. His model is graphically summarized by Illustration 3.

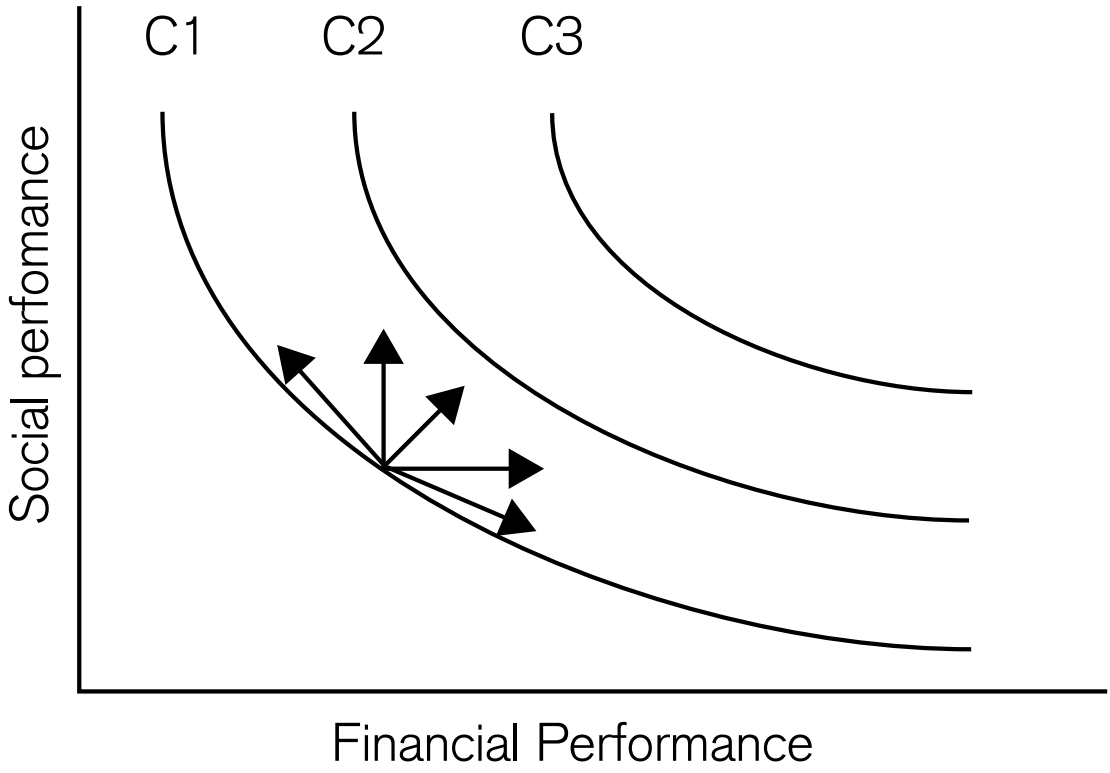

Illustration 3: Financial and social performance of MFIs

The curves C1, C2 and C3 are “indifference curves”: curves of combinations of social and financial performance of MFIs that are equally attractive. The arrows represent different strategies an MFI has in terms of performance:

1. The horizontal arrow represents a growth-first strategy, where financial performance is improved subject to the rule that social performance stays equal.
2. The vertical arrow represents a current clients-first strategy, subject to the rule that financial performance should not get any worse.
3. The arrow pointing upwards-right represents an intermediate strategy where both social and financial performance are improved.
4. The arrow pointing upwards-left shows a trade-off strategy where social performance is improved with an adverse effect on financial performance. In case of MFIs this effectively means that more funding is

required from external sources.

5. The arrow pointing downwards-right shows a trade-off strategy where financial performance is improved at the cost of social performance. In case of MFIs this effectively means that more profit is generated with loans that have less social effect.

For 4 and 5 performance moves along the same performance frontier, for 1,2 and 3 the total performance is increased. In this thesis we assume, like Copestake (2007) financial and social performance to be negatively associated.

How is this social performance operationalized in microfinance? The indicators that are used are often proxies, and are always quite simple in nature. Interestingly, it is not always the case, as Goldberg (2005) puts it that financial performance is measured quantitatively and social performance qualitatively. Both qualitative and quantitative indicators are used for both financial and social performance as illustrated in Table 1.

	Financial	**Social**
Qualitative	Group sessions on household income (Goldberg, 2005)	Open surveys (Afrane, 2003) Survey on inter-spouse consultation and autonomy (Amin et al., 1998)
Quantitative	Business turnover, employment (Afrane, 2003) Business profits (Copestake et al., 2001) Ratios from MFI as proxy for financial performance such as Debt/Equity and Current-ratio (Gutiérrez-Nieto et al., 2006)	Years of education, house type (Amin et al., 1998) Number of mattresses, radio's, TV's, refrigerators, bicycles. Years of education. Total assets. (Barnes et al., 1999) Ratios from MFIs that are used as a proxy for social performance, such as "number of clients below poverty line" and "average distance below poverty line per client" (Gutiérrez-Nieto et al., 2006)

Table 1: Qualitative/Quantitative and Social/Financial indicators for the performance of MFIs

These data are gathered on different levels using different sources. On the individual loan level questionnaires and in-field research is often required

(Barnes et al., 1999). On the MFI level annual accounts are often used (Gutiérrez-Nieto et al., 2006). When industry-level benchmark data are required the go-to source seems to be mix-market (Mar-Molinero et al., 2009; Mersland & Øystein Strøm, 2009, 2010). Mix-market is a freely available source of self-reported quantitative data on the performance of MFIs.

7.4 Microcredits' Impact Chain

As we have seen the main reason for the existence of microfinance is to help the poor to manage their finance somewhat better. The poor are often trapped in a tripple whammy, where they have low income as well as irregular income and no financial services to help them deal with this. This creates unrest and stress when a larger amount of money is required than is currently available. Even something as trivial as planning to buy food is problematic if one does not exactly know when money is available. Larger expenditures, such as school uniforms, toilets or refrigerators are increasingly difficult.

This all brings us to an Impact Chain for microfinance. The Impact Chain of microfinance is included in this thesis mostly as a comparison against the Impact Chain of mesofinance and can be found in Illustration 4. Although out of scope for this thesis an interesting addition to scientific literature would be to gain more insight into the relationships between the output, effect and impact stage by using data from previous research structured in an Impact Chain.

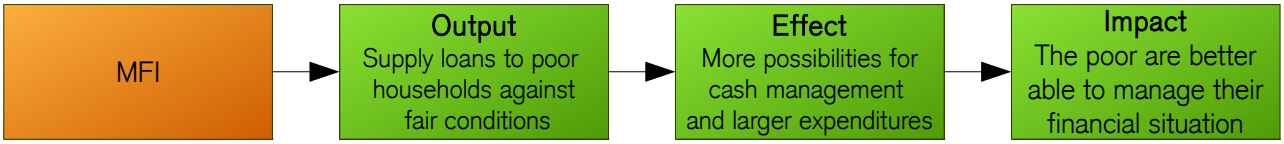

Illustration 4: Impact chain for microfinance

8 The impact of mesofinance

Now that we have some insight into the justification of microcredits, the provision of financial services to households, we shall look somewhat closer at mesofinance. Mesofinance can be regarded as the expanded version of microfinance. The term mesofinance is not found in peer-reviewed journals. It is, however, quite common in practice (B. Jenkins, 2007; Sanders & Wegener, 2006; Sutton & Jenkins, 2007).

The justification for mesofinance is the so-called “gap” between traditional MFIs that supply loans on a household level, and the formal financing sector that offers services only to large companies. The “missing middle” consists of the SMEs that are too complex and large to be offered credit by the typical MFI and too small and risky to have access to formal finance. This missing middle is mentioned both in peer-reviewed journals as in white-papers (Budjhawan, 2014; Grosh & Somolekae, 1996; B. Jenkins, 2007). It is found that in developing countries the SME sector is a lot smaller than in developed countries (Beck & Demirgüç-Kunt, 2006). The main reason for this is that in developing countries SMEs have a lack of reliable and affordable finance (Ayyagari et al., 2007; Beck & Demirgüç-Kunt, 2006). When SMEs are able to attract better finance they will be able to expand (Carpenter & Petersen, 2002) which is good from a development perspective because SMEs generate the bulk of jobs in developing countries (Bauchet & Morduch, 2011; Beck & Demirgüç-Kunt, 2006; Budjhawan, 2014).

In this research we use the following definition for mesofinance:

> *Mesofinance is the extension of financial services, most notably loans, to small and medium sized enterprises in emerging economies.*

8.1 Microcredit and mesocredit compared

The difference between mesofinance and microfinance is one of scale and goal. Microfinance is the provision of financial services, most notably loans, to the

poor (Afrane, 2003), whereas mesofinance means the targeting of financial services, mostly loans, towards SMEs in economic challenging regions.

Mesofinance and microfinance are quite similar in some respects. Both try to give access to finance in economically challenging regions and both usually have a large altruistic component. The differences, however, between microcredit and mesocredit are also quite pronounced. The typical microcredit has a size around of $450, with loans hardly ever exceeding $1000 per household[3]. Mesocredit on the other hand starts around $10000 with single loans reaching up to $50000[4]. Microfinance targets the household level, mesofinance targets SMEs. Microfinance is quite often to used for consumption or paying of other loans (Lützenkirchen & Weistroffer, 2012) where mesofinance aims to promote business expansion.

Both microfinance and mesofinance have a social goal, but the exact nature of this goal is somewhat different. Microfinance aims to give the (extreme) poor better access to finance to increase their financial possibilities, smooth their available cash over time, and allow for bigger expenditures (Budjhawan, 2014). Mesofinance on the other hand has the goal of allowing SMEs in developing countries to expand, thereby creating jobs and boosting wider economic development in a region. It does so by giving SMEs access to cheaper finance with longer maturities which is easily and reliably available. An overview of the differences can be found in Table 2.

3 These figures cannot be found in peer-reviewed journals but are taken from Kiva's platform. This number is presented mainly to give a rough estimate of the difference between mesocredits and microcredits. To calculate this number I took the average size of currently fundraising loans on Kiva's platform at time of writing (20 May 2015). Kiva is the largest supplier of crowdfunding for microcredit and can be seen as an authority in this matter. Please note that Kiva supplies mostly “group loans”, loans on an individual basis are often smaller.

4 Again, these are not official figures. These are however the typical loans known to Lendahand and available on its platform.

	Microcredit	Mesocredit
Loan size	< $1000	$1000 - $50000
Lenders	Household level	SMEs, 5 – 100 employees
Usage	Consumption Paying off other loans Education Large expenditures	Used to start or expand an enterprise.
Social effects	Gives poor households access to bigger one-time expenditures Helps poor households to smooth their income. Helps poor households to be less reliable on informal sector lending	Gives SMEs opportunities for cheaper finance Gives SMEs easier access to finance Gives SMEs access to finance with longer maturities
Social goal	Give the extreme poor access to financial services so they have more financial possibilities	Help economic expansion in a region by allowing SMEs to expand and create jobs

Table 2: Comparison between mesofinance and microfinance

8.2 Mesofinance Impact Chain

As we have already seen in the case of microcredit, it is possible to translate the generic Impact Chain as introduced by Hornsby (2004) to a more specific Impact Chain. Let us take a look at the Impact Chain of mesofinance, which is Lendahand's Impact Chain as well. To do so, let us recapitulate the reasoning behind Lendahand's business. In developed economies the vast majority of jobs is created by small and medium sized enterprises (SMEs). This could also be the case in upcoming economies. However, SMEs in upcoming economies have no access to affordable finance. By creating better access to affordable finance Lendahand gives SMEs in developing countries the opportunity to expand. If SMEs expand they can create more jobs, which leads to a stable source of income and thus poverty relief. If we capture this reasoning in a structured Impact Chain we start with the crowdfunders. People with some extra cash on

hand lend this, through Lendahand, to an entrepreneur in a developing country. From this an outcome is generated: an entrepreneur is able to expand his business. This in turn has an impact: jobs are created, providing a sustainable source of income. A stylized version of Lendahand's Impact Chain including feedback is depicted in Illustration 5.

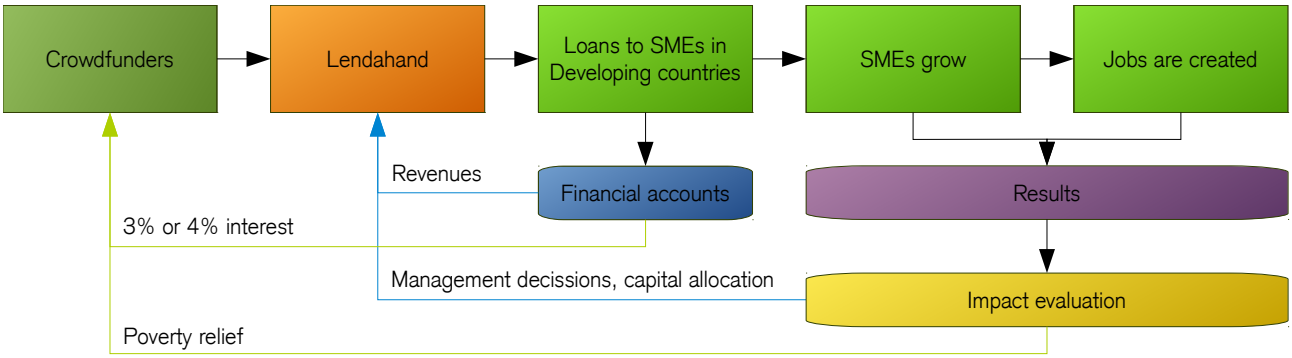

Illustration 5: Lendahand's impact chain visualised

9 Measuring the impact of mesofinance

To measure the social performance of Lendahand's mesofinance portfolio I developed a model, based on three inputs: (1) scientific literature on the measurement of social impact from microfinance, (2) examples from practice on the measurement of social impact of both microfinance and mesofinance and (3) Lendahand's Impact Chain.

9.1 Impact in scientific literature

We have learned so far from scientific literature that most indicators are often simple and straightforward, or contain questionnaires to measure more complex constructs (see Table 1). In practice measurements of the questionnaire variety are of limited use because of their intrinsic requirement for expensive field-research. The simple quantitative measures introduced in peer-reviewed journals are often useful for the measurement of mesofinance portfolio because of their microfinance background. I had to look for indicators that were the upscaled mesofinance versions of the simple indicators for the social impact of microfinance.

9.2 Examples from practice

For this, relevant literature from practice was used. There are a few larger organisations in the field of microfinance and mesofinance that have written on their social impact.

- Kiva (2013) – Writes mostly from an aggregated perspective and describes the outcome of their operations in quantitative terms. Indicators used are “% higher education borrowers”, “% green energy borrowers”, “% water & sanitation borrowers”, “% first time lenders” and “% female”. They also have an indicator “catalytic loans” which they define as “any loan that would not have happened without KIVA”. Apart

from these they also list simple financial indicators such as “total volume”.

- VisionFund International (2014) - Which is a microfinance fund under the umbrella of WorldVision also brings out a social impact report. They have indicators on the level of *outcome*, *effect* and *impact*. For the outcome they have indicators such as “households reached”, “% that use a cooking stove”, “% that own a latrine” and “total volume”. On the level of effect VisionFund International (VFI) uses stories to tell what their loans do. VFI uses an indicator “% of clients that moved out of poverty” that describes the *impact* of their business.
- Triple-Jump (Bochatay & Rademaker, 2005) uses their proprietary “Social Performance Assessment tool”. This assessment tool seems to be quite extensive, encompassing six “key dimensions”: protection, satisfaction, gender, human resources, outreach and social performance information. Their tool is, however, in no way transparent. The methodology used is unclear, as are their indicators. What I could learn from their report is that they measure on the *outcome* level indicators such as number of end-clients reached, average loan-size. Triple-Jump seems to be using questionnaires of end-clients to determine scores on their 6 key-dimensions on the *effect* level. These six key-dimensions are measured on the MFI level. The setup of these questionnaires is proprietary and Triple-Jump was unable to comment on the details. Furthermore they use stories to demonstrate their social impact.

What is most noteworthy from these social impact reports from practice is that they almost exclusively focus on outcome. The only exception being KIVA's “catalytic loans” which describes, to some extent, the *effect* of KIVA's business, and VisionFund International that has a questionnaire on improved access to water and sanitation and an indicator “% of clients that moved out of poverty” which measures on the *impact* level.

The problem with measuring only on the *outcome* level in the context of an impact-study is that of a self-fulfilling prophecy. When we are stating that we are having impact by doing X and we are then measuring how much X we are doing as an indicator for how much impact we are having then of course we will

find that we are having impact. This seems a trivial mistake, yet it is exactly what large micro-financing organisations are doing.

What is also worth mentioning is that these large entities in the world of microfinance seem to be unable to tell *how* exactly they are creating social impact. Even if they are, rarely, measuring the *impact* that their business has, there is no clear, explicitly stated relationship between their actions and the generated *impact*. For example: VisionFund has reached a number of clients with their microfinance product and some percentage has climbed out of extreme poverty. It is completely unclear *how* their program has this impact, let alone verify this relationship. In other words, what is missing from these type of impact studies is a clear Impact Chain. What is the *outcome* of our program, what *effect* is generated by this outcome and what type of broader *impact* does this give?

9.3 Impact Chain integrated model

To gain a clear and full understanding of the impact generated by Lendahand's mesofinance business we must have a model that measures all the steps along the Impact Chain. For every step along the Impact Chain there must be indicators that are clear, easy to obtain, indisputable, readily measurable, and give an honest and complete reflection of what they are trying to measure. As stated by Afrane (2003) it is vital that both quantitative and qualitative measures are used: quantitative measures to state how much impact there is and qualitative measures to clarify the exact nature of this impact.

A compact version of Lendahand's Impact Chain can be found in Illustration 6.

Illustration 6: A compact representation of Lendahand's impact chain

Measuring the results for every step along the Impact Chain both qualitatively and quantitatively is a new concept in scientific literature which I call the Impact Chain Integrated Model. This model aims to give a clear and full

understanding of the social impact created by an enterprise. It does so by using clear and concise indicators along every step of the Impact Chain both qualitatively and quantitatively. By measuring along the Impact Chain we not only know the resulting social impact from our program but also where this impact comes from. By measuring both qualitatively and quantitatively we not only know the quantitative extent of the results but also their qualitative nature. Another advantage of this model is that it gives a clear insight into Lendahand's social impact with relatively few data available. But more complex relationships, such as “what is the effect of outcome indicator x on effect indicator y?”, are already part of this model. To get insight into these relationships between indicators the only thing required is more data. Furthermore this Impact Chain Integrated Model clearly structures and clarifies the social impact reporting.

In the next few Sections I will describe the indicators used. I will do so “along the Impact Chain”, first describing measuring the outcome stage, then the effect stage and then the impact stage. Of course, only measuring these indicators holds no meaning if their values cannot be compared. In Section 9.3.4 I will therefore introduce the benchmarks used for comparison. A graphical representation of the Impact Chain Integrated Model can be found in Illustration 7.

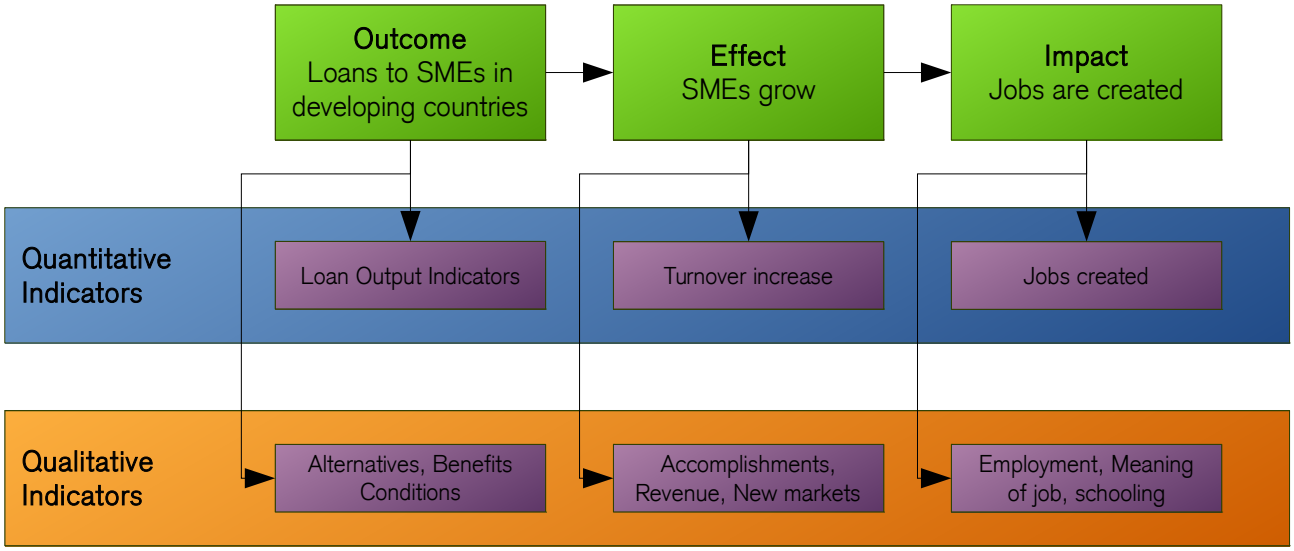

Illustration 7: The Impact Chain Integrated Model visualized

This Impact Chain Integrated Model is a combination of existing and new works. We use Hornsby's (2004) idea of structuring social impact using an Impact

Chain. This has previously not been done in scientific literature before, but as we have discussed in Chapter 6 this holds some advantages. The indicators are similar to those we would find for microfinance, based on the recommendations made by Afrane (2003). The way in which to gather data, the exact indicators to use, the benchmarks to compare them with as well as the combination of all this work is first introduced in this thesis in the next few Sections. Also first introduced in this thesis is using hypothesis testing along the Impact Chain to further bolster the assumed relationships, as will be done in Chapter 11.

9.3.1 Outcome stage measured

For the outcome stage of Lendahand's Impact Chain I use a set of Loan Output Indicators as quantitative indicators. As qualitative indicators a series of questions in the form of a structured interview is used.

The Loan Output Indicators are a set of indicators that describe the loan portfolio quantitatively on four dimensions: distribution, profit, appropriability and efficiency. The key dimension of distribution describes in broad terms where what types of loans have gone to. This is to gain insight in the basics of the loan portfolio. The second key dimension contains profit indicators. If profit is too high it means that social impact is compromised, if profit is too low it means that social impact is unsustainable (J. Copestake, 2007). The key dimension appropriability describes whether the loans offered are favourable and appropriate for the entrepreneurs targeted. The last dimension of efficiency is to show whether the local partners disburses loans in an efficient manner. When loans are disbursed efficiently this has a positive impact both on social as well as financial impact.

The complete set of indicators used for the Loan Output Indicators can be found in Table 3. A description was added for indicators that are not straightforward.

Dimension	Indicators
Distribution	Number of clients Amount of loans Total volume of loans % female entrepreneurs that receive loan %agriculture, %manufacturing, %wholesale, %services, %financial services, %distribution
Profit	Return on assets Return on equity
Appropriability	Yield on gross portfolio Average loan size Average loan size / per capita GNI Average loan size / turnover Repayments on time Average interest rate end client (APR) Write-off ratio Average maturity Average employees end-client Average turnover end-client
Efficiency	Cost per borrower Cost per loan Loans per staff member Borrowers per staff member Total costs / assets

Table 3: Loan Output Indicators

For the quantitative analyses of the outcome stage an in-person questionnaire is used. This tells us more than only the quantitative data. We do not only know how high the effective interest rate is, we know whether entrepreneurs find the conditions of the loan fair. The questions asked are the following

1. What alternatives do you have for a loan besides <local partner>?
2. What are the benefits and differences in the products that they offer?
3. What interest rate does the alternative offer?

4. What are the main benefits from <local partner>?
5. What do you think of the conditions of the loan?

Social impact is the difference between “being there” and “not being there”, which is why we ask Questions 1-3. We want to have a clear picture of the perceived alternatives for SMEs. Questions 4 and 5 are to gain a better understanding of the perception from the perspective of the local entrepreneur of the loans offered by Lendahand.

9.3.2 Effect stage measured

From the output stage of the Impact Chain I want to gain clear insight in the exact product that is being offered to entrepreneurs, therefore a host of different indicators are relevant. In the effect stage of the Impact Chain I want to measure as concisely and clearly as possible the growth of SMEs that receive a loan through Lendahand. To do this the indicator “Median turnover increase in %” is used.

During the loan procedure at one of Lendahand's local partners basic financial statements such as a balance sheet and an income statement have to be supplied. This means that the yearly turnover at time of loan is available. Calculating the turnover increase is as simple as gathering the current yearly turnover for all companies and calculating the difference as a percentage of the last yearly turnover.

Besides a quantification of company growth we also want qualitative insight into the effect of Lendahand's loans. To do this a questionnaire was used with the following questions:

1. What were you able to accomplish because of the loan?
2. Did your revenue and profit increase?
3. Were you able to enter new markets?
4. Do you think you would have done the same thing without a loan?

Because a more broad understanding of the effect of loans is essential the quite open Question 1 was asked. A company's revenue might not increase, but if the loan enables the SME to better finance their employees or pay off another

loan with worse conditions the effect is still positive. Question 2 was added because the perception of increased revenue is not always in line with the hard cash flows. Growth for a business might also mean entering new markets, therefore Question 3 was asked. Once again, social impact is the difference between being there and not being there, so in Question 4 we ask whether or not it was the loan that enabled SMEs to do the things asked in Question 1-3.

9.3.3 Impact stage measured

Lendahand's social goal is to reduce poverty by creating sustainable jobs in emerging economies in an economically feasible way. This means that the ultimate impact of Lendahand's program is the creation of jobs and through this the supply of livelihoods worldwide. Our main indicator for social impact is thus the number of jobs created.

It must be noted that “jobs created” is not a clear indicator as it leaves room for some discussion in practice. This is best illustrated with an example. A contractor receives a loan and uses this loan to buy a container of goods from China for resale. He needs five persons to unload and sell this container of goods. These five persons are hired for a period of three months and then let go. Does this mean that five jobs were created? I would argue that this is not the case. But what if the contractor applies for a second loan after three months and hires the same people to do the same work? This cycle repeats itself every three months. Have we now created five jobs? It is clear that without the loans these five persons would have no work but I would argue that the loan does not generate *sustainable* jobs.

Another problem that is encountered in practice are the “sustained jobs”. Let us look at an example to explain this. A production facility which has a lot of demand runs into liquidity problems. Although the business is economically viable it has a short-term cash problem. To solve this problem the owner can either fire some employees, or take a loan to keep its employees. It is clear that without the loan there would be fewer employees, but they are employees that were already working at the plant. This might seem like a far-fetched problem, but it is sometimes encountered in practice. If we would ask Lendahand's local partners for the number of jobs that were created at an enterprise they might

often include these sustained jobs. Within this research, however, we want to exclude these sustained jobs.

To account for this the indicator “jobs created” is defined and measured as “median increase of persons working at company since last measurement”. When an entrepreneur applies for a loan it is required to state the number of employees working at his company. To calculate the “jobs created” the only information we need is the number of people currently working at the company. By using this indicator a growth of total worker-base in a company is measured as positive impact. Sustained jobs or rotated temporary workers, however, are not measured as positive impact. To compare the number of jobs created across countries and gain insight in the relative number of created jobs this indicator is reported in two fashions:

1. Median jobs created per financed company in %,
2. Number of jobs created per € 10.000 lent.

To gain more insight in the jobs created and the broader impact of this a questionnaire was used. The following questions were asked:

1. How many people have you hired since the loan?
2. Were they employed at your company before?
3. What does having this job mean for them?
4. Can they send their children to school?

Question 1 and 2 are to determine how much jobs are *sustained* jobs versus *created* jobs, which is to gain insight in the number of jobs that are new versus those that were merely continued. Question 3 and 4 are to gain more insight into the broader impact of these created jobs. The rationale behind Question 4 is that payments for schooling are often the last to be made on the household level. This means that if households send their children to school, often their other needs have been met.

9.3.4 Benchmarking the impact-chain

In the last few Sections I introduced all relevant indicators to gain an insight into Lendahand's social impact. But without clear benchmarks these indicators

hold no meaning. I will therefore describe and discuss the benchmarks to be used for all indicators. The data from these benchmarks come from a few different sources:

1. The WorldBank's databank will be used for all macro-economic data, this includes the GNI per capita for countries as well as the growth of economies.
2. MixMarket, an independent data platform in the microfinance industry will be used for industry-level data on the country level. This source is regularly used in practice and peer reviewed journals (Mar-Molinero et al., 2009; Mersland & Øystein Strøm, 2009, 2010; Stauffenberg, 2014). This data is sometimes self-reported by MFIs, which gives reasons for doubt. However, it is the best available source for this type of data. Most of this data comes from annual accounts and can therefore be seen as reliable enough for benchmark purposes.
3. Kiva, the largest crowdfunding platform in microfinance industry. Kiva is a non-profit organisation publishing the data of their “field-partners”, MFIs, to promote transparency and accountability. In the one occasion that MixMarket lacks data, namely the average repayment rate, it is obtained from Kiva's platform.

All benchmarks introduced are on the country-level. This means that indicators are compared to the same numbers from competitors in the same country. I will introduce the benchmarks along the stages of the Impact Chain.

9.3.4.1 Benchmarking the outcome stage

For the key-dimension “distribution” the benchmarks are quite straightforward and mainly serve to get some insight in the size of Lendahand's output in a local microfinance market. Indicators “Number of Clients”, “Number of Loans”, and “Total Volume of Loans” are compared to the averages from competitors in the same country. The indicator “% female entrepreneurs that receive a loan” is somewhat tricky because there are many MFIs that focus mainly on females to receive loans. This is not the case for Lendahand's local partners and a comparison with local MFIs can therefore be made, but one should be reluctant to draw conclusions from this. For the indicators “% agriculture”,

“%manufacturing”, “%wholesale”, “%services”, “%financial services” and “%distribution” there are no clear company goals, only that for marketing purposes manufacturing projects are preferred, as well as a balanced mix between the different sectors, therefore these indicators are shown without benchmarks.

The key dimension “profit” has the indicators “Return on Assets” and “Return on Equity”, these should be within reasonable bounds and are therefore compared to country averages. Given the non-profit character of many MFI institutions having a return on assets or return on equity below country average could be considered dangerous. Lendahand asks from local partners to have a positive RoA.

In the key dimension *appropriability* I want to measure whether or not the loans provided are appropriate in the social mission of Lendahand, the provision of better finance to SMEs. The indicator “Yield on gross portfolio” is often used as a proxy for the average interest rate of the end-client. Because Lendahand focusses on SMEs and not the typical households from microfinance as well as aiming to lower interest rates in the target market the Portfolio Yield of Lendahand's local partner should be below the market average. Please note that Portfolio Yield is in some respects similar to Return on Assets. The subtle difference is the following: Portfolio Yield is a proxy describing whether or not clients pay too much interest where Return on Assets describes whether or not the NBFI has a too large (or too small) profit.

The indicators “Average Loan Size”, “Average Loan Size / per capita GNI” and “Average Loan Size / turnover” should indicate that Lendahand is funding SMEs, not households or large enterprises. Note that Lendahand defines SMEs as enterprises having a minimum of five employees. “Average Loan Size / per capita GNI” should thus be significantly larger than the average of this indicator in a local market, with a rule of thumb being more than five times as large. An average maturity of over a year means that maturities are more in line with SME needs than traditional microfinance. Similarly, “average employees end-client” should be in line with funding SMEs and should therefore be above five. The “average turnover of an end-client” should be high enough to sustain these employees and should therefore be above five times the GNI per capita.

“Average maturity” should be above a year, as this is in line with Lendahand's goal to provide loans to SMEs. Most microcredits have a maturity below a year, which is a problem for most SMEs because the revenues from any project usually take longer.

“Repayments on time” should be in line with industry standards and is therefore compared with the global average. The “Average interest rate end client (APR)” and “Write-off ratio” are compared with, and should be below, the countries average.

In the key-dimension efficiency I expect the indicators “Cost per borrower”, “Cost per loan”, “Loans per employee” and “Borrowers per employee” to under perform the MFIs that operate in the same market. This is because Lendahand provides larger loans to larger companies and thus more costs are involved per loan. However, because of the larger loans I would also expect that Lendahand performs better than MFIs on total costs / assets, which is also benchmarked against the average total costs / assets for MFIs in the market.

9.3.4.2 Benchmarking the effect stage

In the effect stage of the Impact Chain we want to know whether or not Lendahand's loans help companies to expand. Because of the inherent problems with finding a control group I compare the companies against the wider economy. The indicator for growth “Median of turnover increase in %” is compared to the total macro-economic growth in the same year. If the turnover increases more than the macro-economic growth I conclude that the loans through Lendahand have helped these companies to expand more than the economic growth in the region during the same period.

9.3.4.3 Benchmarking the impact stage

For the impact stage two different representations of the same indicators are used. “Median of jobs created as a percentage” is used to give insight in the impact a loan through the Lendahand platform has on a local business. The representation “Number of jobs per €10.000 lent” can be compared to MFIs that also have a goal of job creation and is then compared to a country wide “Number of workers hired by financed companies / average loan size”. This

means we can truly compare the impact per Euro, the total impact generated per Euro lent, of Lendahand's mesofinance. The end goal is to state whether or not Lendahand creates jobs more efficiently than alternatives.

9.4 Data gathering

The data-gathering was a cumbersome and difficult process. Between time-zones, cultural differences, and conflicts of interest, a way had to be found to gather correct data in a cost-efficient manner. This was done in multiple stages. In 2014 an employee of Lendahand visited the Philippines to conduct the first interviews. These interviews would form the basis for a further social impact report which I was to write. The same structured interviews would later be repeated in Ghana and Colombia, carried out by people in the Lendahand network. These interviews form the qualitative data in the Impact Chain Integrated model.

For the quantitative data two sources were used. For the output stage all relevant data are readily available to Lendahand in the annual accounts of the local partners and Lendahand's own project database. The quantitative data for the effect and impact stage were gathered by the local partners under my own instruction. This was done because sending a field-worker to the local partners is too expensive and time-consuming. The clear and concise nature of the quantitative indicators allowed for outsourcing their gathering to the local partners.

This way of data gathering, where some entrepreneurs take part in an interview and others are visited by the local partner to gather quantitative data is not ideal. It is not ideal that the local partner gathers data, even if it is clear and concise quantitative data. Because the local partner is a party in the loan transaction gathering data could be prone to “creative interpretations”. For the next social impact report it might be better to gather the qualitative and quantitative data in one go by someone from Lendahand themselves. Most ideal would be to combine this with a due-diligence visit, for cost-efficiency.

9.4.1 Quantitative data method

As stated, the quantitative data for the output stage of the Impact Chain was readily available in the annual reports of local partners and Lendahand's database of funded projects. Only basic data manipulation was required to aggregate this data into usable form.

To gather the quantitative data for the effect and impact stage the local partners were contacted to ask whether they were willing to participate in this study. In return they would receive Lendahand's social impact report. All local partners promised to help out in this regard. The way in which they gathered the data was different for every local partner. NPFC, Lendahand's local partner in the Philippines, dedicated their enterprise development officer to the task. For Ghana the person usually responsible for uploading projects was to gather the data. In Colombia a credit officer was assigned to the task.

For all local partners a selection was made of projects which were eligible for this impact study. Projects where eligible if they held the following criteria:

- Funded through Lendahand in 2014
- No agriculture, because of seasonal effects
- A minimum of three employees at time of funding. This was because hiring one additional employee for a company of two employees would give a boost of 33% to the total employees. I deemed this effect to be sensitive to outliers.
- Entrepreneurs were granted a single loan. This is because I want to measure the effect of single loans, and not the compound effect of additional loans.

From the long-list of projects that were eligible for this study I took a random sample of fifteen projects for every local partner. This random sample was constructed in such a way that it contained a representative mix of all different business sectors as well as a representative mix of entrepreneur gender. This list of 15 projects was then sent to all local partners along with the data points that were required to calculate the indicators for the effect and impact stage.

For the effect stage the instructions were “What is the current yearly turnover

of this entrepreneur? This may be the realised turnover of 2014 if the last known turnover was the realised turnover of 2013. If the last known turnover was an estimate turnover of 2014 then please make an estimate for the 2015 turnover". Because in practice both estimates and realised turnovers are used for loan application the instructions were phrased like this. If the last data point was an estimate of 2014 I want an estimate of 2015, if the last data point was a realised value of 2013 I want the realised value of 2014.

The instructions for the impact stage were "what is the total number of employees currently working at this enterprise? Please determine this in the same way as you determine the number of employees upon loan application". These instructions were phrased like this to cope with a problem. It is not clear when someone is an "employee". If two persons work part-time at a company, does that mean the company has two employees, or one? One could argue that one person working full-time at a company is just as good, from a social impact perspective, as two persons working part-time. I would disagree. Two persons working part-time at a company means that there are two households that have a steady stream of income instead of one. There are also differences in law and culture between our local partners, meaning that one employee is perceived differently between countries. I want to have an indicator that is comparable across countries. To do this I ask the local partners to determine the number of employees in the same way as they do for a loan application and then I look at percentage changes in employees. This means that if a country is more prone to calling someone an employee this will have the same effect on the first and second data-point. Note that I use a percentage increase of jobs, making results comparable between countries.

9.4.2 Qualitative data method

For the qualitative data I depended on work that was finished before I started my assignment at the company of Lendahand. In 2014 one of the employees of Lendahand started the whole impact measurement study with a visit to the Philippines. In the Philippines she conducted fifteen structured interviews, of which I have incorporated the questions in the Impact Chain Integrated model.

It is important to note that it is an employee of Lendahand, not the local

partner, that performed the interviews. This means that entrepreneurs feel safe when answering questions of a delicate nature. The same procedure was followed in Ghana and Colombia. In Ghana someone from the Lendahand network was found willing to perform some structured interviews. In Colombia a sister of a Lendahand employee took ten structured interviews. In all three cases the same interview was done so that results are comparable. The questions have the same wording as detailed in Section 6.

9.4.3 Story method

For marketing purposes, only structured interviews and quantitative data are not enough. What is required are the stories of entrepreneurs that are helped through the Lendahand program. To gather these stories one additional question was asked during the structured interviews: “What are your dreams for the future?”. The answers on this question together with the detailed answers on the previous questions allow to write stories from the perspective of the individual entrepreneur. These can be used in the form of blogs or to provide background information in the social impact report. We will not use these data in this thesis but it will be part of the social impact report to be delivered to Lendahand.

10 Lendahand's Social Impact Measured

The Impact Chain Integrated model was presented as a way to gain insight in the social impact of mesofinance. Based on this model qualitative and quantitative data were gathered to determine the relevant KPIs. In this Chapter we will discuss the results from the gathered data. In Section 10.3 we will analyse and discuss the presented data to gain further insight.

From the three countries where Lendahand is active we will look at the social impact of Colombia and the Philippines. The social impact in Ghana will be left out of this thesis. This has a straightforward reason: Lendahand has only been active in Ghana since December 2014. This means that for the social impact reporting period of 2014 we have only one month of data, which constitutes a total of four projects funded.

10.1 Colombia

Lendahand has been funding projects in Colombia since 2013. In 2014 a total of €450.530 was lent to Columbian entrepreneurs through Lendahand's platform. These loans go through local partner Venture South Colombia that has been funding SMEs since 2008. With a yearly GDP growth of around 5% Colombia is an emerging economy with an upcoming middle class. The largest part of the workforce in Colombia is in agriculture, textile and construction.

10.1.1 Quantitative scorecard

The quantitative data of Lendahand's mesocredit portfolio in Colombia are presented in Table 4. There are a few things that draw some attention.

It is noteworthy that the percentage of female borrowers is well below the benchmark. This is, however, to be expected. The benchmark is based on the microfinance industry in Colombia. Most microfinance programs are specifically targeted towards women because of their high repayment rates. Because

Lendahand is targeting entrepreneurs, not the poorest of the poor or specifically women, it is to be expected that a higher percentage of loans is directed towards men.

In the key-dimension profit we find a RoE of 22% and a RoA of 10%, those are above market average and in line with expectations.

Please note that Colombia has an interest-rate cap of 22% for microfinance. In practice, however, this is sometimes circumvented by having recipients of loans pay additional fees. Such practices however becomes clear in the Portfolio Yield. On average in Colombia the portfolio yield is 15,50%, which is below the 22% cap. Some MFIs however have yields up to 47%. VSC has a portfolio yield of 13,24%. Which is below market average, as we would expect. The repayments on time and write-off ratio's are also better than the wider microfinance industry in Colombia.

Something else that should be noted on the entrepreneurs that receive money through the Lendahand platform is that they have a turnover of about 25 times the GNI per capita, while having an average of only four employees. This might mean that the entrepreneurs that are targeted are successful entrepreneurs, but not job-creators per se.

What also becomes clear is that the loans that are being processed are quite large: about five times the average size in the microfinance industry in Colombia. Looking, however, at the size of these loans compared to the GNI per capita I would argue that they are still somewhat small, a lot smaller than loans in the Philippines when accounting for the differences in GNI per capita between the Philippines and Colombia. It could be that offering larger loans would help with higher job creation per Euro lent. This is checked more extensively in Section 10.3.

When looking at the loans that are being offered everything seems to be quite in line with benchmarks. The interest rate is well below market average and the maturity is large enough to be relevant even for entrepreneurs where the extra revenue is only generated over a longer period of time. These indicators show that the product being offered is in line with Lendahand's vision.

So, what about the actual effect and impact? Well, this is where Lendahand shows promising results in Colombia. The companies that were offered a loan in

2014 have, on average, grown about 20% when looking at turnover. This is in an economy where the total GDP grew with about 5%, meaning that the companies grew about 15% faster than the economy over the same period of time. This is a strong indicator that the loans being offered through Lendahand help companies to expand.

The impact is almost as spectacular. The companies that are being offered a loan grow their employee-base with a median of 33%. This might seem like a lot, but it must be noted that the average size of a funded company is four employees, which means that the median number of growth in employees is about two. Given that the loans that are offered are large one should not be surprised to find that the actual impact per Euro is that Lendahand creates about 2,06 jobs for every € 10.000 lent in Colombia. This is still above market average of 1.19, which means that Lendahand is outperforming the MFI market, but it is much lower than in the Philippines. One could ask where this somewhat low impact per Euro comes from, which will be answered in detail in Section 10.3. This relatively low impact is, however, only when comparing Colombia to the Philippines; Lendahand is still outperforming the local market.

Outcome		
Distribution		
Indicator	Value	Benchmark
Number of clients	43	28.000
Number of loans	47	77.000
Total volume of loans	€ 450.530	€ 57.000.000
% female entrepreneurs	48%	61%

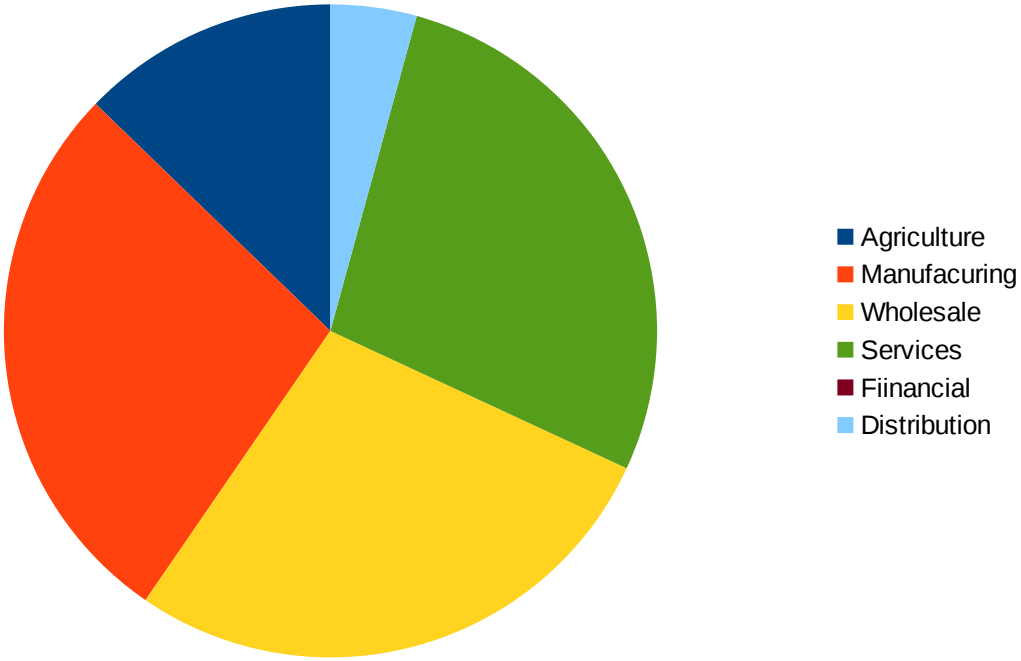

Illustration 8: Loans across different sectors in Colombia

Profit		
Indicator	Value	Benchmark
Return on Assets	9,6%	5,36%
Return on Equity	22,77%	16,30%
Appropriability		
Indicator	Value	Benchmark
Yield on gross portfolio	13,24%	15,50%
Average loan size	€ 9.268	€ 2.000

Average loan size / per capita GNI	158,04%	35,09%
Average loan size / turnover	0,11	-
Repayments on time	96%	92,49%
Average interest rate end client (APR)	23,28%	37,55%
Write-off ratio	0,98%	4,2%
Average maturity	21 months	> 12
Average employees end-client	4	> 5
Average turnover end-client	€ 125.000	> € 30.000
Efficiency		
Indicator	Value	Benchmark
Cost per borrower	€ 1552	€ 260
Cost per loan	€ 1420	€ 195
Loans per staff member	37,5	99
Borrowers per staff member	34,5	94
Effect		
Indicator	Value	Benchmark
Average turnover increase in %	19,87%	4,6%
Impact		
Indicator	Value	Benchmark
Median jobs created per financed company in %	33%	> 0
Number of jobs created per €10.000 lent	2,06	1,19

Table 4: Quantitative scorecard of the Impact Chain Integrated model for Colombia

10.1.2 Qualitative remarks

Now that we know something of the quantitative performance of Lendahand in Colombia it is good to put this into perspective by asking local entrepreneurs what they think. What were the alternatives they had? Why did they choose a

loan through Lendahand? What do they think of the service offered and what were they able to accomplish because of this loan?

It is good to know that all local entrepreneurs had other options available to them. Although we obviously have a selection bias it does mean that entrepreneurs do not choose VSC because they have no other options. The bulk of the local entrepreneurs state that they could also gain a loan through a bank, while a few could gain one from an MFI and only a single entrepreneur saw the informal market as an alternative. There were no entrepreneurs that had no other alternative. An overview of answers is given in Table 5.

Why did they choose a loan through Lendahand then, if they had alternatives available? The two most mentioned reasons were the fast processing time with little documentation required and the friendly manner in which the service is supplied. A few entrepreneurs explained that the regular visits by VSC to their enterprise give them the feeling that they are being treated with respect, as equals. A lot of entrepreneurs also state that the low interest rate is a reason to choose VSC. An overview can be found in Table 6.

Furthermore, entrepreneurs found the conditions of the loan mostly good, as can be seen in Table 7. All entrepreneurs stated that the interest they would pay at the alternative would be higher.

Alternative	Available to (n=10)
Bank	9
MFI	3
Informal market	1

Table 5: Alternatives available to the entrepreneurs in Colombia

Reason	Mentioned by (n=10)
No collateral required	0
Interest rate	7
Payback conditions	0
Processing time	10
Friendly manner of service	10

Table 6: Why did entrepreneurs in Colombia choose VSC for their loan?

Conditions of loan	Number (n=10)
Good	7
Fair	3
Bad	0

Table 7: Did entrepreneurs in Colombia think the conditions of the loan where either good, or fair, or bad?

How did the local entrepreneurs think the loan affected them? What was the effect of the loan being given? In answer of this question entrepreneurs stated that they used the loan to either buy equipment, material or real estate for their company as can be seen in Table 8. Almost all entrepreneurs stated that their revenue or profit increased, as can be found in Table 9. About half of the entrepreneurs stated that they were able to enter new markets because of the loan received, see Table 10.

Accomplished	Mentioned by (n=10)
Equipment	6
Material	7
Real estate	6

Table 8: What were Colombian entrepreneurs able to accomplish?

Revenue/profit increase?	Answered (n=10)
Yes	9
No	1
Don't know	0

Table 9: Did Colombian entrepreneurs think their profit or revenue had increased?

New markets	Answered (n=10)
Yes	5
No	5

Table 10: Were Colombian entrepreneurs able to enter new markets?

Social impact is the difference between being there and not being there. So the real question is whether or not entrepreneurs would have done the same thing without the loan provided to them. In answer to this question some entrepreneurs said they would have, but it would have taken them more time while others claimed it would have been impossible for them. The results for this can be found in Table 11.

Same without loan	Answered (n=10)
Yes	0
Yes, but slower	6
No	4

Table 11: Would Colombian entrepreneurs have done the same without the loan provided to them?

As we have seen there is certainly a social impact aspect to Lendahand's program in Colombia. For every €10.000 lent 2,06 jobs were created. But what did entrepreneurs think of this jobcreation themselves? Of all entrepreneurs interviewed the bulk claimed that they had hired employees because of the loan. Some entrepreneurs stated that some of these workers where seasonal workers, or workers for a specific project. An overview of this can be found in

Table 12. The majority also claimed that these workers were not employed at their enterprise before, see Table 13. When asked whether or not the children of employees where able to afford school most remarked that they did not know, as can be seen in Table 14.

Hired workers	Answered (n=10)
Yes	9
No	1
Also seasonal workers	2
Also workers for a specific project	2

Table 12: Did Colombian entrepreneurs hire new employees?

Employed before	Answered (n=10)
No	9
Yes	1

Table 13: Did Colombian entrepreneurs hire employees that were already employed at their enterprise?

Children to school	Answered (n=10)
Yes	1
No	0
Don't know	9

Table 14: Are the children of Colombian employees able to go to school?

In answer to the question “What does having this job mean to your employees?” all entrepreneurs answered “They now have an income to support their families”. This is of-course not surprising, but after all these questions, interviews and indicators it is a good validation of Lendahand's ultimate goal: the reduction of poverty through job creation.

10.2 Philippines

Lendahand has been funding projects in the Philippines since 2013. In 2014 a total of €441.078 was lent to Philippine entrepreneurs through Lendahand's platform. These loans go through local partner NPFC. With a yearly GDP growth of around 6.1% the Philippines are an emerging economy. The largest sectors in the Philippines are the services and production industry. Main export products are electronics, transportation equipment, fruit and clothing.

10.2.1 Quantitative scorecard

The quantitative data for the Philippines can be found in Table 15. There are some causes for concern, but overall the results are astounding.

In the key-dimension distribution we notice that quite a large percentage of loan receivers are female. Which does raise some questions, but compared to the wider microfinance industry, it is not something to be concerned about. Microfinance institutions have a tendency to focus on female borrowers, and this is something that, apparently, is still the case for mesofinance as well. It is also noticeable that many loans are made in the manufacturing sector, this is not strange given that the Philippine manufacturing sector is large.

When looking at profitability everything is as I would expect and in line with benchmarks. NPFC has a positive return on assets, larger than the return on assets in the wider microfinance industry. It also has a good return on equity, albeit lower than common in the wider industry. This is no cause for concern as this lower return on equity can be explained by NPFC having a lower debt/equity ration than common in the wider industry. So, while they outperform the wider industry in terms of ROA their leverage ratio has a limiting effect on their ROE.

The key-dimension appropriability gives cause for one critical remark. The average maturity of projects funded in the Philippines is just over one year. This can be considered barely enough from a perspective of business growth. All other appropriability indicators give no reason for concern. The portfolio yield is in line with the average interest rate reported to Lendahand's platform. Please note that not all projects from NPFC are funded through Lendahand which

explains the minor difference. The loan sizes are large when compared to the GNI per capita and loans given out by microfinance institutions, meaning that they are really targeted towards enterprises and not the household level. The repayment rates and write-off ratio's are also quite good. The average interest rate is quite high for western standards, but just like Colombia, it is well below market rates.

In the efficiency dimension the indicators describe exactly what I expected them to. The costs per loan and borrower are extremely high compared to MFIs, but the total costs / assets outperform the average total costs / assets. The loans per staff member and borrowers per staff member also indicate that NPFC is operating quite inefficiently. But please bear in mind that the average loan size is much higher, which makes NPFC outperform the local market in total costs / assets.

This all brings us to the effect these loans have in the Philippines. The average turnover increase as a percentage is about 21,75%, this is 15% higher than the 6,1% that the market grew in the Philippines. This means that the SMEs that got a loan through Lendahand's local partner NPFC outperformed the macro-economic growth with 15% in 2014, which is again a very strong indicator of a positive social effect on the enterprises financed.

For social impact there are equally impressive results, the median jobs increase for a financed company is 15%, which translates to an average of 3,92 jobs created for every €10.000 invested.

Outcome		
Distribution		
Indicator	Value	Benchmark
Number of clients	79	37551[5]
Number of loans	84	31592
Total volume of loans	€ 441.078	8.750.000
% female entrepreneurs	79%	95,90%[6]

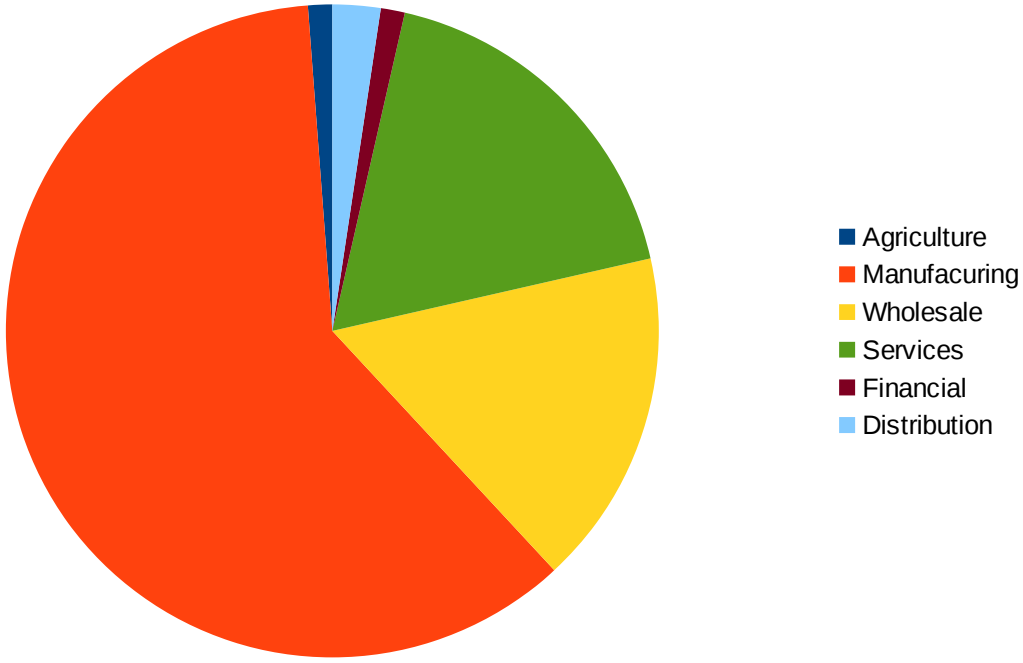

Illustration 9: Loans in the Philippines across different sectors

Profit		
Indicator	Value	Benchmark
Return on Assets	2,86%	1,53%
Return on Equity	8,41%	21,85%
Appropriability		

5 Please note that Lendahand's is both small and focusses on mesocredit instead of microcredit. Therefore it is not strange that the number of entrepreneurs funded during a year is lower than the industry average.

6 Although this is an extremely high percentage, please note that many MFIs focus specifically on women

Indicator	Value	Benchmark
Yield on gross portfolio	30,75%	37,14%
Average loan size	€ 5.250	€ 182,92
Average loan size / per capita GNI	202%	7,04%
Average loan size / turnover	0,0824	-
Repayments on time	95%	92,49%
Average interest rate end client (APR)	33,23%	< 37,14%
Write-off ratio	0,215%	1,03%
Average maturity	12	> 12
Average employees end-client	19	> 5
Average turnover end-client	€ 102.791	> € 13000
Efficiency		
Indicator	Value	Benchmark
Cost per borrower	€ 1815	€ 61
Cost per loan	€ 850	€ 60
Loans per staff member	17,92	102
Borrowers per staff member	8,4	93
Total costs / assets	19,87%	20,61%
Effect		
Indicator	Value	Benchmark
Average turnover increase in %	21,75%	6,1%
Impact		
Indicator	Value	Benchmark
Median jobs created per financed company in %	15%	> 0
Number of jobs created per €10.000 lent	3,92	1,13

Table 15: Quantitative scorecard of the Impact Chain Integrated model for the Philippines

10.2.2 Qualitative remarks

Now that we have seen that quantitatively there is quite some social impact in the Philippines, it is good to check this with the local entrepreneurs. Do they think there is social impact? How do they see the product offered by Lendahand? What would be different if they did not have this opportunity?

For the coming Section, please note that fifteen entrepreneurs have been interviewed and that for most questions it is possible to give multiple answers.

For the Philippines, like in Colombia, entrepreneurs had other options available to them. For most entrepreneurs the other options where either banks or informal sector lending such as loan-sharks, Bombays or family. A few entrepreneurs stated that they had no alternative available. An overview of the answers can be found in Table 16.

If alternatives where available, what made them choose a loan through NPFC? The answers are quite similar to the answers in Colombia. Most entrepreneurs stated that the fast processing time, the friendly personnel and low interest rate had led them to choose NPFC. Some also stated that for NPFC no collateral is required or that the payback conditions were more lenient. An overview of the answers can be found in Table 17.

The entrepreneurs found the conditions fair to good, with one entrepreneur stating that the conditions where bad, as can be seen in Table 18. Most entrepreneurs stated that the interest rate at the alternative would be higher, depending on the alternatives they had. The entrepreneurs that had and MFI or informal lending as alternative stated that they would usually have to pay a higher interest rate at the alternative. Entrepreneurs that where able to get a loan from the bank where split between having a higher or lower interest rate. An overview of these alternative interest rates can be found in Table 19.

Alternative	Available to (n=15)
Bank	6
Informal	7
MFI	2
No alternative	3

Table 16: Alternatives available to entrepreneurs in the Philippines.

Reason	Mentioned by (n=15)
No collateral required	3
Interest rate	5
Payback conditions	4
Processing time	7
Friendly manner of service	5

Table 17: Reasons entrepreneurs had for choosing NPFC over alternatives.

Conditions of loan	Number (n=15)
Good	4
Fair	5
Bad	1

Table 18: Do entrepreneurs in the Philippines think the conditions of the loan are fair?

	Bank	Informal	MFI (n=15)
Higher interest at alternative	2	6	2
Lower interest at alternative	3	0	0
No answer	1	1	0

Table 19: The interest rates available to Philippine entrepreneurs at alternative services

What did the local entrepreneurs think the effect of this loan was on their

business? In answer to this question entrepreneurs stated that using this loan they were able to buy raw materials. Some also stated that due to having working capital they could meet their customers demands better by being able to buy required goods in advance of large orders. Some also used the loan to buy equipment or real estate. The answers given are summarised in Table 20. Almost all entrepreneurs stated that their profit and revenue had increased, but some were unable to state with certainty how much their profit or revenue had increased or decreased, as can be seen in Table 21. Almost all entrepreneurs were able to enter into new markets because of the loan they received, an overview of this is given in Table 22.

Accomplished	Mentioned by (n=15)
Raw material	11
Equipment	3
Real estate	1
Better order handling	8

Table 20: What have Philippine entrepreneurs accomplished using the loan provided?

Revenue/profit increase?	Answered (n=15)
Yes	11
No	0
Don't know	4

Table 21: Did the revenue / profit of Philippine entrepreneurs increase due to the loan?

New markets	Answered (n=15)
Yes	9
No	1
No answer	5

Table 22: Where Philippine entrepreneurs able to enter new markets due to the loan provided?

When checking whether it was the loan that enabled entrepreneurs to do what

they did the results where similar to Colombia. Without the loan they would not have been able to have the same result, or at least it would have been slower, this is shown in Table 23.

Same without loan	Answered (n=15)
Yes	0
Yes, but slower	4
No	11

Table 23: Would Philippine entrepreneurs have done the same without the loan they were provided?

The qualitative indicators for social impact are in the case of the Philippines quite clear. Entrepreneurs stated that they where able to hire more people, or in some cases create more work for existing people, see table Table 24. In almost all cases these were people that were previously unemployed, as can be seen in table Table 25. The people that are employed at these entrepreneurs are either able to send their children to school or do not have children, an overview for this can be found in Table 26.

Hired new	Answered (n=15)
Yes	10
No	2
No answer	1
More work for existing workers	2

Table 24: Have Philippine entrepreneurs hired new employees?

Employed before	Answered (n=15)
Yes	3
No	12

Table 25: Were employees of Philippine entrepreneurs employed before?

Children to school	Answered (n=15)
Yes	8
No	0
No answer	1
No children	6

Table 26: Are the employees of Philippine entrepreneurs able to send their children to school?

10.3 Discussion

Based on the Impact Chain Integrated Model the social impact of Lendahand's mesofinance portfolio was measured in Colombia and the Philippines. This was done both quantitatively, to state the extent of Lendahand's social impact, as well as qualitatively, to describe its exact nature.

On the outcome stage of the impact-chain it was found that the financial product being offered to entrepreneurs in Colombia and the Philippines had characteristics in line with Lendahand's goal of job creation. The interest rates offered were below market average, which was confirmed by local entrepreneurs who *perceived* the interest rates to be a good option in comparison to alternatives. The portfolio yield is in line with reported interest rates, a strong indicator that there is no misrepresentation of interest rates.

It was found that maturities were in line with Lendahand's social goals in Colombia, but the average maturity of barely over a year in the Philippines could be considered somewhat low from a social impact perspective. Local entrepreneurs did state that they were happy with the repayment conditions however, so further research is required. Furthermore, the entrepreneurs consistently stated that they were happy with the service provided as well as the timely manner in which they were able to get a loan. Local entrepreneurs consistently thought the interest rates offered were either fair or good.

The efficiency with which the loans are provided is in line with expectations. A rather low efficiency per borrower and per loan was found, but the total costs /

assets were found to be better than the local market. This is due to the fact that loans are offered which are much larger than the usual microcredits.

The complete picture of the outcome stage of Lendahand's Impact Chain is thus one of a better financial product than is otherwise available to local SMEs. The costs involved are lower than microfinance, even for local partners that are extremely small compared to MFIs in the same market, while having an above market return on assets. This gives rise to the conclusion that interest rates can be lowered further as local partners increase their size and gain economies of scale.

On the effect stage of the Impact Chain it was found that local SMEs were able to expand their business. This was confirmed by local entrepreneurs who stated that the loan had enabled them to buy raw material, real estate, equipment or that they could use the cash to better meet their customers wishes by buying stock in advance of demand. Local entrepreneurs further stated that this had allowed their business to expand in turnover and profit. It was found that the above market growth of funded enterprises, both in Colombia and the Philippines, was about 15%.

The impact stage of the Impact Chain finally also gives a positive view of Lendahand's business in the Philippines and Colombia. It was found that for the financed companies there was a median increase of 33% in employee-base in Colombia, in the Philippines this was 15%. This translates to an average of 3,92 jobs created in the Philippines for every €10.000 lent while in Colombia this is about 2,06. Both of these are above microfinance market average. This is a strong indicator that the mesocredits supplied by Lendahand create more jobs than their microfinance counterparts.

There is, however, quite some difference in social impact between the Philippines and Colombia. The out-performance of the microfinance market in job-creation in the Philippines is significantly larger than the out-performance in Colombia. One would be right to ask why this is the case. There are some key differences in the loans supplied that could explain this difference in performance. In Colombia the financed companies are smaller than in the Philippines in turnover. This difference in size becomes even more pronounced when the turnover sizes are described in relationship to the GNI per capita.

Another difference between the financed companies is that those in Colombia have significantly fewer employees to start with. Something else is the loan sizes: when taking into account the difference in GNI per capita, the loans supplied in the Philippines are substantially larger than those in Colombia.

All these differences could potentially describe the difference in impact per Euro between the Philippines and Colombia. To gain further insight into this I first checked the correlation between turnover, loan size, employees and the resulting social impact. These correlations were to low to warrant further research into possible causality as can be seen in Table 27.

	Increase in employee-base as a percentage
Turnover / GNI per cap	-0,13
Employees	0,2
Loan size / GNI per cap	-0,3

Table 27: Correlations between turnover, employees and loan size with increase in employee-base as a percentage.

Let us dig a little deeper into the data. A quite pronounced difference between Colombia and the Philippines is that the turnover in Colombia is smaller, but the average number of employees even more so. In other words, the average employees / turnover corrected for GNI per capita in Colombia is a lot less than in the Philippines. This could mean that the companies targeted in Colombia are much more efficient, in the sense that they create more turnover with fewer employees, and therefore less interesting from a job creation perspective. I therefore checked the correlation between employees/ (turnover/GNI per capita) and the jobs created per €10.000 and found them to have a correlation of 0,35. This is not a very large correlation, but it is enough to dig a little deeper into this. It could indicate that offering loans to companies with a relative high employees / turnover could increase the number of jobs. To be certain of this more research with more data is required.

11 Social impact from investors' perspective

What we have seen so far is a framework guided description of Lendahand's social impact. A framework for Lendahand's social impact has been introduced and based on this framework a set of KPIs has been described. Based on these performance indicators we provided a quantitative and qualitative description of Lendahand's performance along its Impact Chain. This research design based on a framework guided description has a few advantages. It gives a lot of insight for the exploration stage of Lendahand's impact research, it allows for quick and low cost insight in Lendahand's social performance while providing enough detail for management and marketing purposes. This research design does leave some questions open, mostly from the perspective of investors, which will be discussed in this Chapter.

The first and main question present is whether the stages of the Impact Chain introduced do, in fact, influence each other. Does a better loan product for the local entrepreneur have a positive effect on the enterprise's expansion? Does the expansion of a local SME have a positive effect on the number of employees? The framework introduced assumes these relationships, but these hypothesised relationships must be proven. It must be noted that in the work of Hornsby (2004) the relationships between stages are assumed to exist without further question. In the type of research we are currently doing however, a more rigorous proof of the proposed relationships must be present. To prove these relationships more data are required, but the way in which these hypotheses can be tested is introduced in Section 11.2.

Other questions that have remained, so far, unanswered have to do with linearity. It is highly unlikely that there is a linear relationship between the loan amount and a company's growth or between a company's growth and jobs created. Enterprises might have different economies of scale and the effect of repeat-loans might be different from first loans. It might be that an entrepreneur is able to do nothing with a loan of €9.000, buy a machine which has to be operated by six persons with one of €10.000 and have no additional

possibilities with a loan of €25.000. The effect of repeat-loans is also interesting. When an entrepreneur is for the first time able to get a loan against good conditions it might be highly likely that he uses this loan to fund “low hanging fruit” opportunities giving his business a great boost. The effect of a second loan is then lessened by having fewer opportunities. Effects like these are described and possible ways to deal with them are introduced in Section 11.1.

The last point that needs to be discussed is comparability. As we have seen in Chapter 10 entrepreneurs that have received loans have shown more growth than market average and have hired employees. So far we have compared against the closest alternative: MFIs that report on their job creation. But maybe a better comparison would be government job-creation policies? Or maybe we should compare against donation-based private initiatives to enhance workforce mobility? Some insights into questions like these and some suggestions for further research are provided in Section 11.3.

11.1 Non-linearity effects

If the assumed relationships between Lendahands output, effect and impact are true, these relationships need not necessarily be linear. For a larger loan size there could be a “stepwise” effect on firm growth due to an entrepreneur having only a discrete number of distinct investment opportunities. There could also be a decreasing effect of loan size on firm growth due to there being less interesting investment opportunities available. It could also be that there is an increasing effect of loan size on firm growth due to a firm gaining economies of scale and gaining new possibilities due to have a larger size. It could be just as likely that a combination of all three of these effects of loan size on company growth are apparent. For clarification a graphical representation of these effects can be found in Illustration 10.

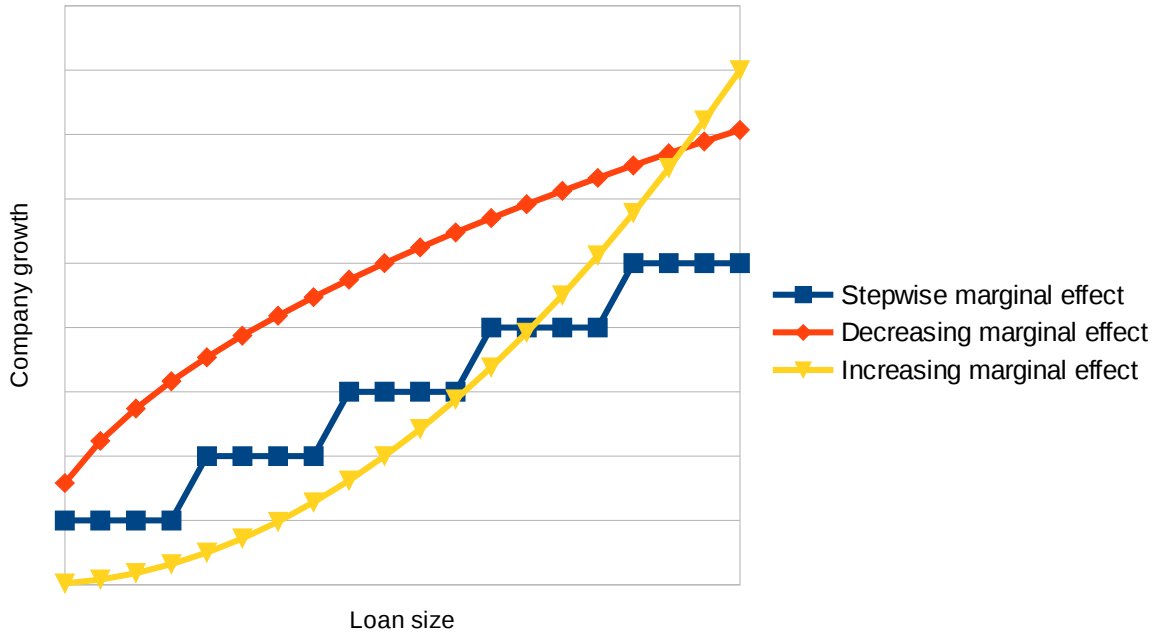

Illustration 10: Possible marginal effects of loan size on company growth.

This would not only be the case for the relationship between loan size and company growth. It could also be that the relationship between company growth and employees is not linear. Or that the relationships between interest rates, maturities and company growth are not linear.

A few notes must be made before we describe the two most relevant non-linear effects. The first is that an entrepreneur and a local partner have insight into the business for which the loan is made. This means that we may assume that there is already, to some extent, optimisation going on. The optimisation we would traditionally assume is for a local partner to maximize the risk adjusted interest over their total loan portfolio and for the local entrepreneur to maximize their profit. Both will not necessarily optimise the number of employees hired. What we have seen so far, however, is that local entrepreneurs have hired employees. And we also know that Lendahand makes a specific choice for those NBFIs that have a social mission. All of this leads to the assumption that there is already, to some extent, optimisation happening with regards to social impact per Euro lent. We might not know how and to what extent this is happening but we may assume that the local expertise of NBFIs and entrepreneurs is already good for some optimisation.

Some other note might be that the optimisation of impact per Euro lent would

be positively influenced by training local entrepreneurs. If entrepreneurs have more insight in company growth and employee management it might be that they are able to expand faster and hire more employees. Lendahand has a foundation that supplies this type of training. The effect of training on social impact falls outside the scope of this thesis. For further research a good question is whether or not the optimisation of interest rates, maturities and loan sizes has a larger effect than training.

The non-linear effects that we encounter most in practice and papers are economies of scale and repeat-loans. These shall be discussed in further detail.

11.1.1 Economies of scale

The economies of scale that are encountered most in practice as well as in peer-reviewed journals is that larger enterprises have access to better ways of financing themselves. Gregory et al. (2005) wrote that larger firms are more likely to use external funding or long-term debt where smaller firms are often dependent on insider funding. When firms grow, according to them, these firms have better access to long-term external funding, instead of being funded by free cash-flows and stakeholder investments. Beck & Demirguc-Kunt (2006) wrote that a lack of finance from the formal sector is one of the major growth constraints for SMEs. They write extensively about alternatives to debt funding in the forms of factoring and leasing. Those, however, are only alternatives when there is no access to finance from the formal sector. Their data show larger firms gain better access to finance in the formal sector in the form of bank loans.

This effect is so pronounced that WorldVision's Vision Fund has made it part of their development model (K. Jenkins et al., 2014). They describe in their “economic ladder” how moving people from poverty to sustainable economic well-being goes from donations to microfinance-lending to lending-with-commercial-market-linkages to formal-sector-financial-services. A graphical representation of this can be found in Illustration 11. Lendahand, as a business, is part of funding the “transient poor”, those that already have built a life for themselves and only occasionally fall below the poverty line. We should therefore not be surprised if we find that clients that are successful in growing

their business will build up economies of scale and then seize to be clients because they have access to better ways of financing themselves. This will also have a broader positive impact, business development also affects potential employees. Targeting specifically enterprises in developing regions thus allows for improving the livelihood of the transient poor as well as the poor, or extreme poor.

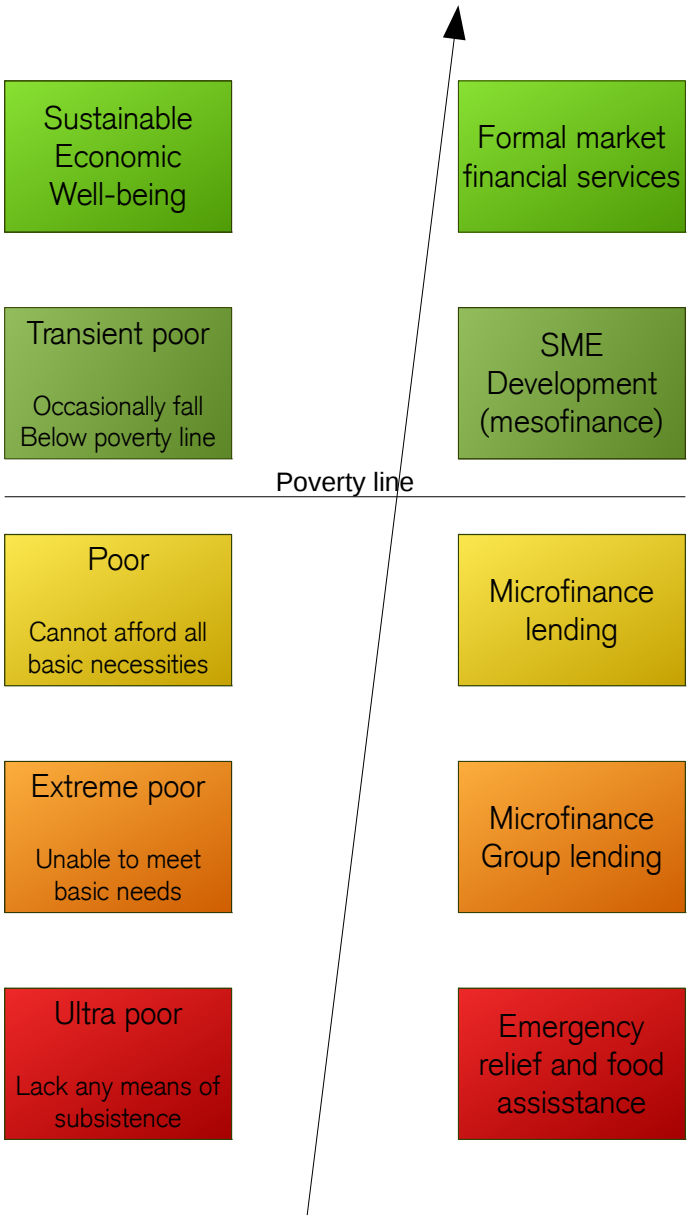

Illustration 11: VisionFund's economic ladder of poverty relief

The effect of gaining access to better finance can be researched for Lendahand's local entrepreneurs as well. As we have seen in Section 10 there is a distinct set of possible uses for the loans that are received by local entrepreneurs. As summarized in Tables 8 and 20 the entrepreneurs used the

loans for the following purposes:

1. Raw material.
2. Equipment.
3. Real estate.
4. Working capital.

These different uses will have different effects on the growth of a company. Based on intuition we might say that buying raw materials or having more working capital have a more continuous effect on growth where buying real estate or equipment (machinery) will have a more “stepwise” effect on growth.

Furthermore, we have found that some entrepreneurs where unable to gain a bank loan because they do not have the collateral required. This is quite in line with the access to finance described by K. Jenkins et al., (2014) and Gregory et al., (2005). Further research into this effect within the company of Lendahand is required, a good starting point for this research is the question whether or not gaining loans through Lendahand helps entrepreneurs to get to a position where they are able to finance themselves with formal market sector services. If this is indeed the case, and personally I suspect it is, then we might conclude that there could be economies of scale which make the measurement of social impact more difficult, but that this is not a problem because as soon as a company gains such economies of scale they are able to get gain better ways of financing.

11.1.2 Effect of repeat-loans

An often mentioned difficulty with microfinance impact-research are repeat-loans. If multiple loans have been made which impact is attributable to every loan? Is the impact between the first and later loans equal? These questions are found plenty in peer reviewed journals.

Copestake et al. (2001) describes how a second loan has more positive impact in his test sample in Zambia. Those who took out second loans on average experienced significantly higher growth in their profits and income as compared with similar business operators. Goldberg (2005) also describes how repeat-loans are especially important. Repeat borrowers in her test sample

have greater income, spend more on food, household improvements and durables and are more likely to have girls enrolled in primary school. McKernan (2002) describes how in some instances repeat-loans have better repayment rates as well. This is not especially strange, because credit worthiness is difficult to estimate it is often determined by the punctuality of payments of earlier loans (Mersland & Øystein Strøm, 2010). Often, MFIs follow a “strict zero tolerance” policy (Budjhawan, 2014), where a first loan is easily obtained against a high interest rate. This first loan serves as a creditworthiness check for later loans where the latter often have a much lower interest rate as well as having higher repayment rates. In a way the first loan serves as a filter to weed out the bad borrowers.

All in all, literature in peer-reviewed journals gives us the impression that repeat-loans outperform their first loan counterparts on business income growth as well as interest rates and repayment rates. Although the type of finance Lendahand supplies is different we have learned from interviews with entrepreneurs that it is true that later loans have a lower interest rate as well. Further research must be done to find out if repeat-loans have a higher impact on jobs created. But for now we have no reason to believe that repeat-loans perform worse, and might even perform better, with regards to social impact and we therefore continue on the assumption that looking only at first loans gives a solid lower-bound on the impact per loan.

11.2 Hypothesis testing

One of the most stringent points in this research was the availability of data. My main addition to Lendahand's social impact reporting is setting up a way to gain relevant insight that does not place too large a burden on their local partners in data gathering. This is why the Impact Chain Integrated Model was introduced: it gives a model driven description of Lendahand's social impact using only little data. A strength of the Impact Chain Integrated Model is that it is able to supply relevant information at low costs and little administrative burden on the local partners while keeping the option to later use the data for more rigorous hypothesis testing.

An issue with the model introduced, is that the hypothesised relationships

between output, effect and impact have not been tested in the specific case of Lendahand. Although, as we have seen from literature, there is a strong case to be made for the relationship between providing better loans and company growth as well as the relationship between company growth and hiring employees, testing these hypotheses for the specific case of Lendahand would be a valuable addition to their impact research.

For now we have gained a basic understanding of Lendahand's social impact in this exploratory research, given more data the hypotheses testing can be done in further research. In the following Sections we will introduce the hypothesis tests to be done and discuss difficulties that arise with these hypothesis tests.

11.2.1 Effect of product on business expansion

Let us start with a short recap from what we have learned in Chapter 8. Having no access to reliable finance is a growth constraint for SMEs in developing countries (Beck & Demirgüç-Kunt, 2006). By giving giving SMEs access to better finance entrepreneurs are able to expand their business (Sanders & Wegener, 2006). From a poverty-relief perspective it is therefore better to invest in businesses and job creation rather than affordable finance on the household level (Bauchet & Morduch, 2011).

The hypotheses that a better financial product for SMEs allows them to expand can also be tested for the specific case of Lendahand. The two most described characteristics of the loans granted are, not surprisingly, interest rate and maturity. As we have seen in Section 7.3 the social performance and financial performance for microcredit are negatively associated. If we increase the financial performance then, all else being equal, the social performance will decrease and vice versa.

For interest rate it is hypothesised that a decreasing rate allows for more cash to remain in the company and therefore allows for faster growth (Budjhawan, 2014). In other words, the interest rate has a negative effect on company growth. In line with this we expect a model of the effect of interest rate on company growth as graphically represented in Illustration 12.

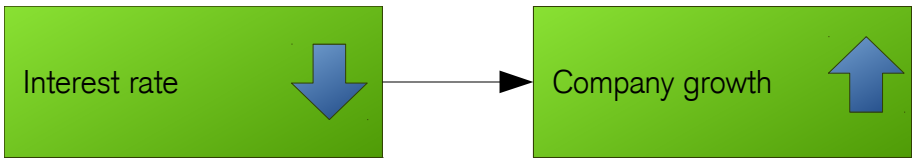

Illustration 12: Model of the effect of interest rate on company growth

The maturity of loans is hypothesised to impact company growth negatively (Armendariz & Morduch, 2000). Often the repayments of traditional microfinance start before the revenue of any project can be realized, the total maturity often being below six months. This means that investment opportunities for entrepreneurs are quite limited. If entrepreneurs have a longer repayment horizon it means that their periodical repayments are lower, which increases the available cash in the company and thus their ability to expand. In line with this we expect a model of the effect of maturity on company growth like graphically represented in Illustration 13.

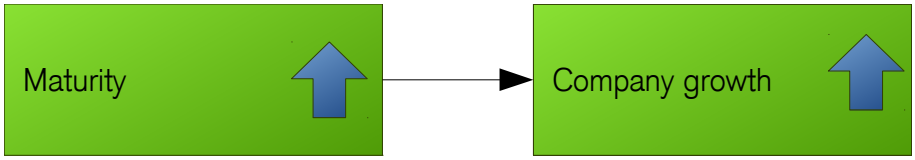

Illustration 13: Model of the effect of maturity on company growth

It is possible to test whether there is association between the interest rate or maturity and company growth using the Kendall rank correlation coefficient hypothesis test. When we do so, however, we will run into some difficulties. I will first introduce the hypothesis test and then discuss the difficulties that arise.

The Kendall rank correlation coefficient hypothesis tests for correlation between a variable X and Y. It does so by first ranking all values of X and Y and then sorting the ranks of variable X. If the two are perfectly correlated then Y will also be perfectly sorted.

To quantify this we count the concordant or discordant pairs. A concordant pair $(x_i; y_i)$ is a pair where either $x_i > x_j$ & $y_i > y_j$, or $x_i < x_j$ & $y_i < y_j$. Described in words: we take two observation pairs and if there is perfect correlation we would expect from one pair both variables to be either larger or smaller. Otherwise a pair is called discordant. If either $x_i = x_j$ or $y_i = y_j$ the pair is neither concordant or discordant. We then calculate our test value the τ

coefficient as following:

$$\tau = \frac{(number\ of\ concordant\ pairs) - (number\ of\ discordant\ pairs)}{\frac{1}{2}n(n-1)}$$

Under H0 of no correlation the τ coefficient[7] does not follow a known distribution, but for small values of n the critical values are known. Under H0 τ has values close to zero. If there is a positive correlation there will be more concordant pairs and τ becomes larger than 0. If there is negative correlation τ becomes smaller than zero. We reject the null-hypothesis when τ is either too large or too small. The denominator is the total number of pair combinations, therefore the coefficient must be in the range $-1 \leq \tau \leq 1$.

To test whether there is association between interest rate or maturity and company growth we investigate the following hypotheses. We then use the Kendall rank correlation coefficient hypothesis test to see whether the null hypotheses (there is no association) holds. The advantage of using this test is that it is not dependent on assumptions on the distribution of the variables interest rate, maturity or company growth. We set up the following hypotheses to test

Hypothesis 1: There is no association between interest rate and company growth

Alternative: There is a negative association between interest rate and company growth

Hypothesis 2: There is no association between maturity and company growth

Alternative: There is a positive association between maturity and company growth

If we now test these hypotheses we find a τ coefficient value of 0.014 for Hypothesis 1 and 0.003 for Hypothesis 2. This means that we cannot reject either hypothesis, by a long shot. This is where the difficulties with this type of

7 Not to be confused with the student-t distribution

test arise.

Even though the relationship between better finance and more SME growth is well established in literature as well as a major goal for much of development aid we do not find a correlation between interest rate and company growth or maturity and company growth. The main reason for this is that in this thesis we have only looked at first loans to determine the impact per loan. As we have learned before, in Section 11.1.2, there is quite some difference in interest rate between first and repeat-loans. The first loan is often used, to some extent, to gain insight into a borrowers creditworthiness. This means that first level loans not only have somewhat high interest rates, they also do not have the variability that we would expect from loans that fully reflect an individual borrower's creditworthiness instead of being used to determine said creditworthiness. For clarification: all loans in the Philippines had a monthly interest rate of 2,5% or 2,25% except for one loan.

More research covering a larger data sample of both first and nth loans is required to gain further insight into the relationship between interest rate or maturity and company growth. In this thesis however I worked on the assumption that there is a positive association between maturity and company growth and a negative association between interest rate and company growth, because these are well established in literature as well as dictated by common sense.

11.2.2 Effect of expansion on employees

One of the key assumptions of Lendahand's Impact Chain is that growing SMEs hire more people. This is not only part of Lendahand's mission, but a growing SME sector has also been introduced in peer-reviewed journals as a way of poverty relief (Bauchet & Morduch, 2011; B. Jenkins, 2007; Sutton & Jenkins, 2007). It is also part non-profit organisation Vision Fund's strategy of poverty relief (K. Jenkins et al., 2014).

In line with the models introduced by Budjhawan, (2014), we assume a model of the relation between turnover growth and hiring employees in line with the one depicted in Illustration 14.

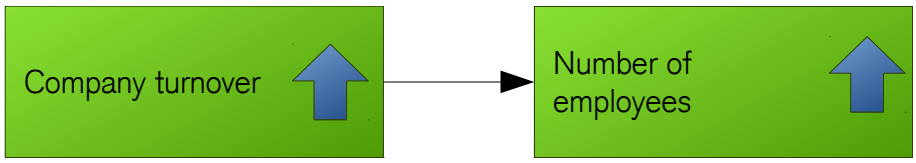

Illustration 14: Model of the effect of company turnover on number of employees

We want to see if the aforementioned positive relationship between company turnover and number of employees holds in practice. To do this we formulate the following hypothesis.

> *Hypothesis 3: There is no association between company turnover growth and increase in number of employees*
>
> *Alternative: There is a positive association between company turnover growth and increase in number of employees*

We test this using Kendal rank correlation coefficient and find that the correlation coefficients are statistically relevant for the Philippines, Colombia and the combined sample. The values of the Kendal rank correlation coefficients can be found in Table 28. For graphical insight a scatter-plot of Ranks can be found in Illustration 15. If the ranks are perfectly associated the scatter-plot would show a 45 degree line starting at the origin. Based on this we conclude that for the random test sample there is a positive association between growth in company turnover and increase in number of employees.

Test sample	Kendal rank correlation coefficient
Philippines	0,368*
Colombia	0,372**
Combined	0.320***

Table 28: Kendal rank correlation coefficients for company turnover and number of employees in a one-sided test.
** significant at the 90% level*
*** significant at the 95% level*
**** significant at the 97,5% level*

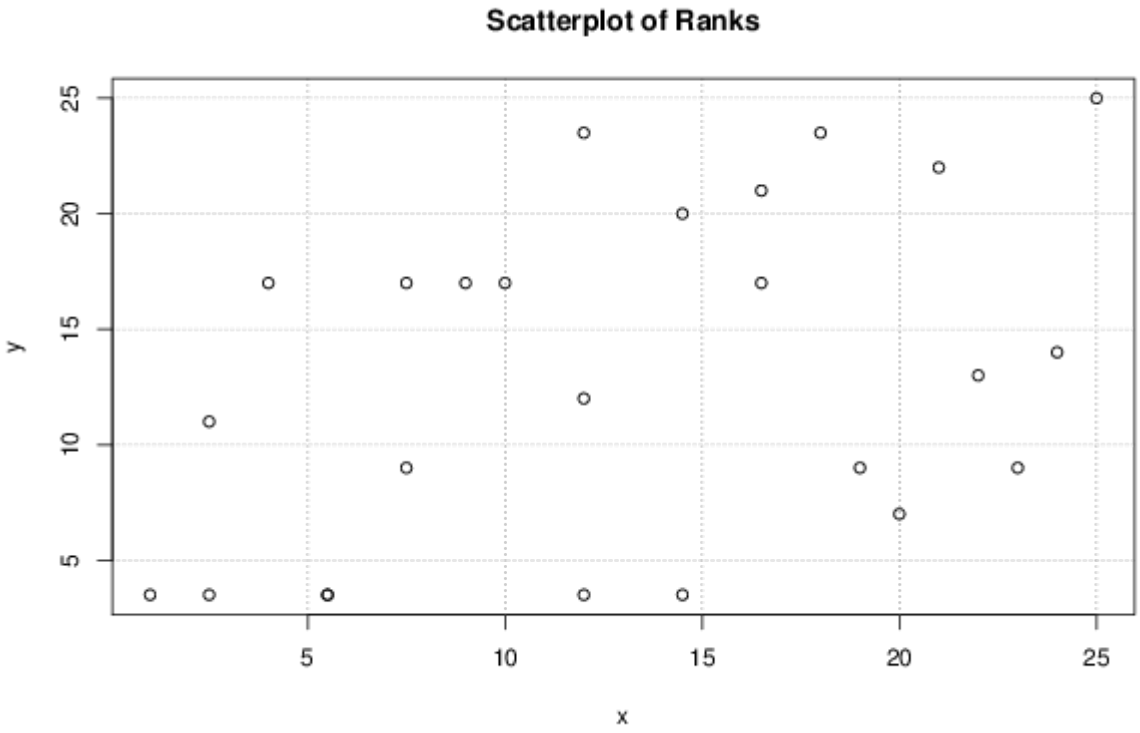

Illustration 15: Scatter plot of ranks where x is percentage increase in company turnover and y is percentage increase in workforce

In this thesis we have worked with the assumption that helping SMEs expand will generate jobs and is thus effective from a poverty relief perspective. In this Section we checked aforementioned assumption. A focus on job creation through SME lending has been recommended in literature from a poverty relief perspective. This type of lending is being used in practice by non-profit agencies with a development focus. We also found a statistically relevant association between company turnover and number of employees in the random test sample of Lendahand's financed company's. We therefore conclude that the the expansion of businesses through Lendahand's mesofinance does indeed generate jobs.

11.3 Impact per Euro lent compared

In this Section there is one last question that must be addressed. Lendahand's investors could be called “social investors”, a term that is used in practice as well as literature (Brau & Woller, 2004). Social investors are those investors that not only look for the best possible monetary gain, but also attribute value

to the social impact of their investment. It is for them that Lendahand writes their social impact report, to gain insight into the impact per Euro lent.

So far we have learned that the companies that gained a loan through Lendahand's local partners have grown with an average of 15% above market during the year in which they received a loan. As we have discussed in Section 11.1, this does not mean that on average companies will be able to grow at this rate indefinitely. When companies reach a certain size they will gain access to other ways of financing themselves, for example through bank loans, and might seize to be Lendahand's clients. One would also expect companies to have different dynamics in growth once they reach this larger size. In the Lendahand's target market, those companies that have trouble getting access to bank loans, we have seen substantial company growth.

Furthermore, we have seen that growth of a company is associated with job creation. In the case of Lendahand this resulted in 2,06 jobs created in Colombia and 3,92 jobs created in the Philippines for every €10000 invested. So far, we have compared this to MFIs in the same region. This poses a problem however, that will be assessed in this Section. Comparing the job creation per Euro against MFIs is, although the best comparison available, not entirely fair.

As we have discussed in Chapter 7 and 8 the social goal of Microcredit and Mesocredit is somewhat different. Microcredit helps the poorest of the poor, on the household level, to manage their financial situation a little better, releasing them from the tripple whammy of having low income as well as fluctuating income and no reliable financial services to deal with their situation. Mesocredit is targeted at SMEs. By giving access to entrepreneurs to solid financial products they are able to expand their business and thus create jobs.

This is where there is a problem with comparing microfinance to mesofinance from a job creation perspective. For mesofinance job creation is the inherent goal, for microfinance it is a by-product. MFIs help the poorest of the poor to manage their finance a little better and sometimes some are able to expand their home business into something larger, ultimately generating jobs. But an argument is made that the poorest of the poor are not all entrepreneurs, ready to expand their business (Bennett & Cuevas, 1996; Budjhawan, 2014). Findings in different papers in peer reviewed journals propose to supply finance to SMEs

and not households, from a poverty-relief perspective (Beck & Demirgüç-Kunt, 2006; Grosh & Somolekae, 1996; Sanders & Wegener, 2006; Sutton & Jenkins, 2007).

In other words, it is not fair to compare job creation from SME lending to job creation of household lending. We must therefore look at other programmes, designed for job creation specifically. The best comparable programs that we can look at are state-sponsored “job creation schemes”. Those are programs designed to help jobless citizens to gain a job, either through training, subsidies, tax breaks or other direct market interventions (Caliendo et al., 2005).

Although there is some research on the effect of state-sponsored job creation schemes there is little to none that describes the effect of job creation schemes in terms of jobs created per Euro spent. What seems to be consistent, however, is that these schemes are often described as ineffective. Hujer & Thomsen (2010) have researched the effect of job creation schemes in Germany. They state that the programs researched perform poorly in improving an individuals employment chances. Daly & Fane (2002) draw similar conclusions in their research on programs in Indonesia. They state that job creation schemes often have a targeting problem where people that should not benefit from them still do so. Their overall conclusion is that job creation schemes are not worthwhile.

There are also some that claim successes with regards to job creation schemes. Wren (1998) states that subsidies have a positive effect on job generation in the United Kingdom. He even goes as far as stating that regional grants have generated some 6000 jobs at a cost of 500 million sterling pound (Wren, 2005). This seems to be the only comparable jobs per Euro spent that can be found in peer-reviewed journals. It is quite interesting to note that Caliendo (2008) states that subsidizing startups, in Germany, has so far been the most effective way of creating jobs in Germany.

Overall, I could not find comprehensive, global, research on the topic of job creation schemes. This means that we have no good comparable data to benchmark Lendahand's job creation with. The only number that we will find in literature is an estimated cost of €100.000 (£ 85.000) spent in regional development grants in the United Kingdom for every job created. This is,

however, so much more expensive that we should doubt whether or not we can make this comparison. Further research must be done in this regard.

12 Conclusions

In this thesis we first describe the Impact Chain (Hornsby, 2004) as a valuable frame to describe the social performance of any organisation. The Impact Chain is not prevalent in scientific literature although using it would yield some advantages. By clearly structuring the way impact is created we can test the relationships between the output an organisation has and the impact it creates.

Microcredits help the poor by giving them access to better financial products. The poor are in a so called "triple whammy", where they have very low as well as irregular income and no financial services to help them manage their cash. Microfinance helps in this regard by offering financial services to the poor. This helps them smooth their incomes over time and allow for bigger one-time expenditures. Indicators used in microfinance are both qualitative and quantitative in nature and are usually quite simple, which decreases the amount the fieldwork involved.

Mesocredit is similar to microcredit but differs in loan size, borrowers, usage, social effects and social goals. In emerging economies there exists a "missing middle", these are those SMEs that are too large to get a loan at MFIs but are still too risky to get a loan at a bank. By giving SMEs in emerging economies access to finance that is targeted to their needs the recipients are able to expand their business and generate jobs. The loan size of mesocredit is larger than that of microcredit. The lenders of microcredit are on the household level, while mesocredit is meant to fund SMEs. The usage of microcredit is usually consumption, education or smoothing of income where mesocredit is used to expand a business. The social goal of mesocredit is to give SMEs opportunities for better finance where the social goal of microcredit is to allow the poorest of the poor to manage their cash a little better. In the case of Lendahand's mesofinance the Impact Chain can best be described as "loans are disbursed to SMEs in upcoming countries" (outcome), "this allows them to expand" (effect), "which in turn allows them to generate jobs" (impact).

After providing an Impact Chain for mesocredits we found that both in scientific literature, as well as social impact studies from practice such a distinction

between impact stages is usually not made. A clear overview of the relation between actions undertaken and impact generated was often missing. Furthermore we found that social impact is usually only measured on the outcome and effect stage, and rarely the impact stage.

I therefore introduced the Impact Chain Integrated Model. The Impact Chain Integrated Model uses key performance indicators to measure all stages along the Impact Chain both qualitatively and quantitatively. This gives not only a clear insight in the impact generated, but also how this impact was generated. By using both qualitative and quantitative indicators we can both state the extent of outcome, effect and impact as well as their nature. An advantage of using this model is that it gives clear insight in the social performance of a program using relatively few data, but that more complex relationships can be researched by adding more data. Furthermore the Impact Chain structures and clarifies social impact reporting.

After gathering data we found a fairly comparable picture of the social impact between Colombia and the Philippines. Lendahand, in collaboration with its local partners offers a competitive product which has all the characteristics required to help local entrepreneurs to expand their business as was stated by local entrepreneurs themselves as well. This in turn helped SMEs to expand their business with about 15% above the macro-economic growth during the year they received a loan, both in Colombia and on the Philippines. Local entrepreneurs also stated that the loan had helped them to expand their business. The cash was often used to buy raw material, equipment or to better meet customers' wishes by being able to buy items in advance of demand. This led to a significant positive social impact. We found that in Colombia 2,06 and on the Philippines 3,92 jobs were created for every €10.000 lent. Both are higher than the number of jobs generated in the microfinance sector with which we compared Lendahand's impact. Local entrepreneurs themselves also state that they where able to generate jobs.

After having taken a look at the social impact Lendahand has generated we looked at this impact from the perspective of an investor. We concluded that there might be some economies of scale present. The first, out of the two most described in literature is that companies, will be able to access better ways of

financing themselves once they reach a certain size. The other one is that repeat-loans have different characteristics from their first-loan counterparts, but due to different reasons they usually outperform first-time loans.

We then checked the assumptions underlying Lendahand's Impact Chain. The first being that providing better financial products will help entrepreneurs to grow their business. We tested for statistically significant association between maturity and company growth as well as interest rate and company growth. Although the hypothesised relationship between offering better financial products to SMEs in emerging economies and business expansion is repeatedly found in literature we could not prove it using the data we had available, more research might provide more insights. The second assumption is that a company of the type being funded will hire more employees when it expands. This assumption is found in literature and we also found a statistically significant positive association between turnover growth and number of employees.

We compared Lendahand's impact to other job creation schemes and found that more research is required to draw a conclusion on Lendahand's impact effectiveness, mainly because there is limited data available on the effectiveness of job-creation schemes.

13 Further research

After measuring Lendahand's social impact there are some recommendations to be made for further research. My first recommendation is to greatly streamline and structure the whole social impact reporting process. I have created a model which can be used to measure social impact in a structured and clear way. Based on this model it is possible to create a lean and mean process of fast and repeatable social impact studies. For this fast and repeatable process I would recommend:

- To use a balanced scorecard of quantitative indicators that is updated yearly for every local partner. The quantitative indicators introduced in Section 9.3 can be used for this. Ideally the moment of gathering these data would be somewhere around July, when all local partners should have their annual report of previous year ready.
- To combine this balanced scorecard with the quantitative project analyses by sending a list of 30 procect (or entrepreneur) names to every local partner and having them fill out two simple data-points (turnover and current jobs) for all of them. As Lendahand increases in size and becomes a larger party for the local partners involved the amount of data to be gathered can be increased, allowing for more in-depth analyses.
- To make handing over this project analyses part of the contract agreement for the credit-facility that is in place between Lendahand and local partners.
- To combine the qualitative and story data gathering with due-diligence visits for budgetary reasons.

I have now done a first iteration of this process and have learned a lot. But the data gathered and insights gained are just the tip of the iceberg. A lot of questions still remain. What is the effect of the industry sector to which an entrepreneur belongs on its turnover increase? What is the effect of a company's size, number of employees, location on its employee-base increase? For questions like these we currently simply do not have sufficient data. To cope with this I would recommend:

- To use FTE together with total employees to gain a more complete picture. FTE however might be a difficult concept to explain to local partners and is open to some interpretation. This means a clear and concise definition must be available for, and communicated with, the field-workers.
- To focus social impact-studies on 2 or 3 countries at a time. If we have more data in one country we could draw more conclusions than having the same data spread-out over different countries. This both reduces the work-load involved and gives more possibilities for in-depth analyses.
- To measure company growth using other indicators than just turnover. As possibilities increase to ask more field-work from local partners it could be possible to measure growth in other ways as well. The advantage of this could be that turnover is a somewhat difficult concept for local entrepreneurs who often lack financial education. Having different, more straightforward, indicators as a proxy for business expansion could lead to a more complete picture.

From a scientific point of view also some questions remain. We are able to learn a lot more of the relationships between the different stages of the Impact Chain for microcredit as well as mesocredit.

- Further research on the relationship between company growth and jobs created can be done when more data is available. It would be interesting to know how exactly those two interact. In this thesis I have worked on the assumption that a larger turnover allows for more employees. But this might of-course also work the other way around. What effect does the reversion of aforementioned relationship have on social impact?
- Not all sectors or entrepreneurs are equal when it comes to growth. Is the effect of mesofinance equal in different sectors of the economy? What happens to the effect of mesocredit in a growing economy or shrinking economy? Are some entrepreneurs able to generate more impact given the same loan? Are female recipients likely to generate more jobs than male recipients? Does the age of recipients matter? Are there other characteristics we could look for in entrepreneurs?

- The Lendahand foundation offers different types of training and workshops together with the loans provided. What is their social impact? Are there any synergies between the loans and trainings provided in terms of risk profiles, social impact or repayment behaviour?
- I personally would really be interested in a meta analysis of the data currently available in scientific literature on the topic of microcredit when structured using an Impact Chain.

Finally, there are some thoughts I have when it comes to the impact this research has on the wider field of financial engineering.

In traditional banking there are a few common practices when it comes to securing credit facilities. Usually a right of mortgage is part of a credit, there has to be some kind of collateral. Apart from a collateral, an applicant's income is thoroughly checked to determine whether he or she is able to repay the loan provided. Every financial institution providing loans has a set of standard procedures and checks, using the same documents and background information, for every applicant to provide a thorough credit-worthiness check against relatively low costs. Now, risk management in microfinance is done in a completely different manner but with promising results. In microfinance often social hierarchy is taken into account, someone trustworthy must in some instances underwrite loans. Some forms of social control are sometimes used. In group lending for example a group of loan recipients are, as a group, responsible for repaying every individual's part. I would really like to see whether or not some of the lessons learned in microfinance would help in traditional banking as well. Here are some questions that might be worth considering.

What business cases are there for new forms of group-based lending in developed markets? As an example, could home-owners associations be formed that, as a group, take out a loan to buy a set of houses? What would the social dynamics in such a group be? Could interest-rates be lowered because a larger group of incomes is responsible for paying one large loan? Questions like these are extremely far-fetched, but maybe a business case could be made for such a product. Maybe, speaking of crowdfunding, it could be that a group of home-owners that have already paid (most of) their mortgage could invest this

wealth directly in a group of younger entrants to the housing market. If a bank would be a mediator between such a direct investment the social dynamics and risk profiles could change dramatically. From the perspective of a bank, the risk profile would improve, while there are also advantages for the other parties involved. The recipients of this type of loan might be able to gain a loan where they otherwise would not. Suppliers in such a scheme would be rewarded with quite a high return from a fully collateralized loan. It would be really interesting to see if such far-fetched ideas taken from the microfinance industry world could work in practice. Given the fact that it already is not uncommon for parents and grandparents to donate wealth to their children to pay part of a house there might be a business case for this type of crowdfunded direct lending.

For the specific case of mesofinance there are other questions worth considering. Please note that microfinance is a lot older and more mature than mesofinance. What is noteworthy is that the interest rates on mesofinance are still somewhat high, sometimes indistinguishable from microfinance. This might be because volumes are quite low, the current supply of mesofinance is unable to meet all demand for this type of SME credit. It would be really interesting to learn what would happen when larger investments from banks and investment funds enter the field of mesofinance. Can the interest-rates for local entrepreneurs be lowered when larger volumes of credit are supplied? Another reason for the high interest rates on mesofinance might be that best practices are, unlike in the field of microcredit, not yet available. What best practices, from a risk management perspective, should be implemented in mesofinance? What structures and procedures could be implemented to make SME lending in emerging economies less risky and thus lower interest rates?

I think the answers to those questions might be combining global and local expertise. Many entrepreneurs state that one of the reasons for choosing a Lendahand local partner for their loan was the fast way in which loans are disbursed, without to much paperwork. A fast process for loan disbursement while retaining good risk-management is of the utmost important in mesofinance. I think key in such a fast process is the local presence of financial institutions. By “being there” they are able to assess potential debtors and manage a loan portfolio. On the other hand, we have also found that some of

Lendahand's local partners do not have the specialists and knowledge that are available in large multinational investment funds. I would like to find out if the right combination of local knowledge and global expertise can be formed. Maybe a large global cooperation of local partners with enough flexibility to mind their own business while having the advantages of scale of a large multinational would have the best of both worlds. It might be in this direction that the answers to current questions of risk management in emerging market SME lending are found.

14 Literature

Adams, D. W., & Pischke, J. D. Von. (1991). *Microenterprise Credit Programs: Deja Vu* (No. 1828). *Studies in Rural Finance*.

Afrane, S. (2003). Impact assessment of microfinance interventions in Ghana and South Africa. *Journal of Microfinance*, *4*, 37–58.

Amin, R., Becker, S., & Bayes, A. (1998). NGO-promoted microcredit programs and women's empowerment in rural Bangladesh: quantitative and qualitative evidence. *Journal of Developing Areas*, *32*, 221–236.

Anderson, C. L., Locker, L., & Nugent, R. (2002). Microcredit, social capital, and common pool resources. *World Development*, *30*, 95–105.

Armendariz, B., & Morduch, J. (2000). Microfinance beyond group lending. *Economics of Transition*, *8*, 401–420.

Ayyagari, M., Beck, T., & Demirgüç-Kunt, A. (2007). Small and medium enterprises across the globe. *Small Business Economics*, *29*, 415–434.

Barnes, C., Morris, G., & Gaile, G. (1999). An assessment of clients of microfinance programs in Uganda. *International Journal of Economic Development*, *1*, 80–121.

Bauchet, J., & Morduch, J. (2011). *Is Micro too Small? Microcredit versus SME Finance*. *Financial Access Initiative*. Retrieved from financialaccess.org on 19 October 2015

Beck, T., & Demirgüç-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking and Finance*, *30*, 2931–2943.

Bennett, L., & Cuevas, C. E. (1996). Sustainable banking with the poor. *Journal of International Development*, *8*, 145–152.

Beverly, S. G., & Sherraden, M. (1999). Institutional Determinants of Savings: Implications for Low-income Households and Public Policy. *The Journal of Socio-Economics*, 457–473.

Bhatt, N., & Tang, S.-Y. (2001). Designing Group-Based Microfinance Programs: Some Theoretical and Policy Considerations. *International Journal of Public Administration*, *24*, 1103–1125.

Bhatta, G. (2001). "Small Is Indeed Beautiful but": The Context of Microcredit Strategies

in Nepal. *Policy Studies Journal*, *29*, 1–16.

Bochatay, C., & Rademaker, B. (2005). Social Performance Report 2013. Triple Jump. Retrieved from http://www.triplejump.eu/upload/media/Triple_Jump_Social_Performance_Report_2013.pdf on 19 October 2015

Brau, J. C., & Woller, G. M. (2004). Microfinance: A comprehensive review of the existing literature. *Journal of Entrepreneurial Finance*, *9*, 1–27.

Buckley, G. (1997). Microfinance in Africa: Is it either the problem or the solution? *World Development*, *25*, 1081–1093.

Budjhawan, S. R. (2014). *A Billion to Gain? Social impact of microfinance in India and Ghana*. ING Microfinance. Retrieved from https://www.ing.nl/media/ING_a-billion-to-gain_tcm162-68108.pdf on 19 October 2015

Caliendo, M. (2008). *Start-up subsidies in East Germany: finally, a policy that works?* (No. 3360). *IZA Discussion Papers*.

Caliendo, M., Hujer, R., & Thomsen, S. L. (2005). *The employment effects of job-creation schemes in Germany: A microeconometric evaluation* (No. 1512). *IZA Discussion paper series*.

Carpenter, R. E., & Petersen, B. C. (2002). Is the Growth of Small Firms Constrained by Internal Finance? *Review of Economics and Statistics*, *84*, 298–309.

Coleman, B. E. (1999). The impact of group lending in Northeast Thailand. *Journal of Development Economics*, *60*, 105–141.

Copestake, J. (2007). Mainstreaming Microfinance: Social Performance Management or Mission Drift? *World Development*, *35*, 1721–1738.

Copestake, J., Bhalotra, S., & Johnson, S. (2001). Assessing the impact of microcredit: A Zambian case study. *The Journal of Development Studies*, *37*, 81–100.

Daly, A., & Fane, G. (2002). Anti-Poverty Programs in Indonesia. *Bulletin of Indonesian Economic Studies*, *38*, 309–329.

Dieckmann, R. (2007). *Microfinance: an emerging investment opportunity. Uniting social investment and financial returns*. Deutsche Bank Research. Retrieved from www.dbresearch.com on 19 October 2015

Eyiah, A. K. (2001). An integrated approach to financing small contractors in developing countries: A conceptual model. *Construction Management and Economics*, *19*, 511–518.

Flannery, M., & Shah, P. (2013). *Annual Report 2013*. Kiva. Retrieved from http://www.kiva.org/about/finances on 19 October 2015

Goetz, A. M., & Gupta, R. Sen. (1996). Who Takes Credit: Gender, Power and Control Over Loan Use in Rural Credit Union in Bangladesh. *World Development*, *24*, 45–63.

Goldberg, N. (2005). Measuring the Impact of Microfinance: Taking Stock of What We Know. *Grameen Foundation USA*.

Gregory, B. T., Rutherford, M. W., Oswald, S., & Gardiner, L. (2005). An empirical investigation of the growth cycle theory of small firm financing. *Journal of Small Business Management*, *43*, 382–392.

Grosh, B., & Somolekae, G. (1996). Mighty oaks from little acorns: Can microenterprise serve as the seedbed of industrialization? *World Development*, *24*, 1879–1890.

Gutiérrez-Nieto, B., Serrano-Cinca, C., & Mar Molinero, C. (2006). Microfinance institutions and efficiency. *Omega*, *35*, 131–142.

Hashemi, S. M., Schuler, S. R., & Riley, A. P. (1996). Rural Credit Programs and Women's Empowerment in Bangladesh. *World Development*, *24*, 635–653.

Hornsby, A. (2004). *The Good Analyst: Impact Measurement and Analysis in the Social-Purpose Universe* (1st ed.). London: Investing for Good.

Hujer, R., & Thomsen, S. L. (2010). How do the employment effects of job creation schemes differ with respect to the foregoing unemployment duration? *Labour Economics*, *17*, 38–51.

Jenkins, B. (2007). *Expanding Economic Opportunity : The Role of Large Firms*. Cambridge: Harvard University.

Jenkins, K., Hartley, J., & Brown, S. (2014). *Social performance report 2014*. Visionfund International. Retrieved from http://www.visionfund.org/library/client/documents/2014-VFI-Social-Performance-Report.pdf on 19 October 2015

Karlan, D. S. (2001). Microfinance Impact Assessments: The perils of using new members as a control group. *Journal of Microfinance*, *3*, 75–85.

Kevane, M., & Wydick, B. (2001). Microenterprise lending to female enterpreneurs: Sacrificing economic growth for poverty alleviation? *World Development*, *29*, 1225–1236.

Lützenkirchen, C., & Weistroffer, C. (2012). *Microfinance in evolution: An industry between crisis and advancement*. Deutsche Bank Research. Retrieved from www.dbresearch.com on 19 October 2015

Mar-Molinero, C., Gutierrez-Nieto, B., & Serrano-Cinca, C. (2009). Social Efficiency in Microfinance Institutions. *The Journal of Operational Research Society*, *60*, 104–119.

McKernan, S.-M. (2002). The Impact of Microcredit Programs on Self-Employment Profits: Do Noncredit Program Aspects Matter? *The Review of Economics and Statistics*, *84*, 93–115.

Mersland, R., & Øystein Strøm, R. (2009). Performance and governance in microfinance institutions. *Journal of Banking and Finance*, *33*, 662–669.

Mersland, R., & Øystein Strøm, R. (2010). Microfinance Mission Drift? *World Development*, *38*, 28–36.

Mosley, P. (2001). Microfinance and Poverty in Bolivia. *Journal of Development Studies*, *37*, 101–132.

Mosley, P., & Hulme, D. (1998). Microenterprise finance: is there a conflict between growth and poverty alleviation? *World Development*, *26*, 783–790.

Pitt, M. M., & Khandker, S. R. (1998). The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter? *Journal of Political Economy*, *106*, 958–996.

Ren, A., & Ren, C. (2001). Microfinance with Chinese characteristics. *World Development*, *29*, 39–62.

Sanders, T., & Wegener, C. (2006). *Meso - finance filling the financial service gap for small businesses in developing countries*. NCDO. Retrieved from https://mediaflip.files.wordpress.com/2010/09/mesofinance-paper-sept2006-pre-def.pdf on 19 October 2015

Schuler, S. R., & Hashemi, S. M. (1994). Credit Programs, Women's Empowerment, and Contraceptive Use in Rural Bangladesh. *Studies in Family Planning*, *25*, 65–76.

Schuler, S. R., Hashemi, S. M., & Badal, S. H. (1998). Men's violence against women in

rural Bangladesh: undermined or exacerbated by microcredit programmes? *Development in Practice*, *8*, 148–157.

Schuler, S. R., Hashemi, S. M., & Riley, A. P. (1997). The influence of women's changing roles and status in Bangladesh's fertility transition: Evidence from a study of credit programs and contraceptive use. *World Development*, *25*, 563–575.

Smith, S. C. (2002). Village banking and maternal and child health: Evidence from Ecuador and Honduras. *World Development*, *30*, 707–723.

Stauffenberg, S. von. (2014). *Technical Guide: performance and social indicators for microfinance institutions*. Retrieved from microrate.com on 19 October 2015

Stupnytska, A., Koch, K., MacBeath, A., Lawson, S., & Matsui, K. (2014). *Giving credit where it is due How closing the credit gap for women owned SMEs can drive global growth*. Goldman Sachs. Retrieved from http://www.goldmansachs.com/our-thinking/investing-in-women/gmi-report-pdf.pdf on 19 October 2015

Sutton, C., & Jenkins, B. (2007). *The role of the financial services sector in expanding economic opportunity*. Harvard University. Retrieved from http://www.hks.harvard.edu/m-rcbg/CSRI/publications/report_19_EO Finance Final.pdf on 19 October 2015

Woller, G., & Parsons, R. (2002). Assessing the community economic impact of microfinance institutions. *Journal of Developmental Entrepreneurship*.

Wren, C. (1998). Subsidies for Job Creation: Is Small Best? *Small Business Economics*, *10*, 273–281.

Wren, C. (2005). Regional grants: Are they worth it? *Fiscal Studies*, *26*, 245–275.

Wydick, B. (1999). Credit access, human capital and class structure mobility. *Journal of Development Studies*, *35*, 131–152.

Wydick, B. (2002). Microfinance among the Maya: Tracking the Progress of Borrowers. *Development and Change*, *33*, 489–509.

15 List of illustrations

16 List of tables

17 Appendix A – raw project data from the Philippines

#	Name	Funding	Rate	Turnover 1	Turnover 2	Employees 1	Employees 2
1	ETB Textile	150000	55,82	2210526	4000000	15	15
2	C&T Plastic Products	500000	54,38	12900559	13545586,95	35	35
3	Mars Stone Supply	300000	56,5	7504635	8000000	16	18
4	ARA Pebbles Center	200000	54,95	6504152	8325314,56	8	9
5	Bella Flores	400000	61,58	20618244	31500000	50	50
6	Lai's Vegetables	200000	54,38	6316987	6316987	17	20
7	Tacumba Enterprises	500000	61,7	10132944	11520000	14	20
8	RP Seashells	500000	61,7	4021404	4021405,78	20	20
9	Ezekeil Footwear	300000	58,79	2643034	3495385,25	7	9
10	Arlyn meatshop	100000	57,06	2257245	2500900	6	8
11	Nila's Junkshop	100000	55,82	2951469	3151469	12	16
12	Navidad Craft Export	400000	61,2	4271428	3192661	28	28
13	JB Papercrafts	100000	57,65	5000000	8431525,5	5	6
14	C-D Pillows & Curtains	200000	57,24	3665225	4612860	37	47
15	VJA Souvenirs	700000	59,82	8940273	10742683	23	25

18 Appendix B – raw project data from Colombia

#	Name	Funding	Rate	Employees 1	Employees 2	Turnover 1	Turnover 2
1	Gobaplast	45000000	2518	6	8	920000000	956000000
2	Acarreros Parra	9000000	1934	2	2	70000000	80000000
3	Acarreos Cano	7000000	2518	1	1	65000000	68000000
4	Panificadora Real	50000000	2518	3	6	280000000	324000000
5	La Gran Vía	30000000	2560	2	4	75000000	85000000
6	Asocacion de Guadas	30000000	2518	16	18	126000000	148000000
7	Ropincol	30000000	2617	3	5	215000000	264000000
8	Server Solution	50000000	2580	9	12	1500000000	1729000000
9	Distribuidora Mis Chiquis	10000000	2580	2	2	120000000	135000000
10	Supermercado El Mono	15000000	2518	2	3	136000000	240000000
12	Mieles Susa	10000000	1934	4	5	60000000	68000000
13	Perfosuelos	45000000	2580	10	15	850000000	980000000
14	Carpinteria San Rafael	20000000	2501	3	4	72000000	78000000
15	Limpia Express	15000000	2560	2	6	58000000	84000000

19 Appendix C – Practical description hypothesis test

In this appendix we will briefly discuss, practically, how to perform the hypothesis tests introduced in Section 11.2. This is done to ensure that future users of the Impact Chain Integrated Model are able to test whether or not the hypothesis underlying the model hold. In this thesis we started with the assumption that offering better financial products to SMEs in upcoming countries will help them to grow and that the growth of an SME market in upcoming countries will in turn generate jobs.

In Section 11.2.1 we looked at the two most important characteristics of a credit product: interest rate and maturity. We found that, within our data, no correlation could be found between a these characteristics and company growth. Given more research it is possible that this hypothesis could be further bolstered statistically. We will therefore in this appendix introduce in the most practical way possible, the hypothesis test to be done.

After gathering the data, as described in Section 9.4, we should end with a set of n companies that have received a loan with a specified interest rate and maturity. From these n companies we also know their turnover growth since receiving their loan and the number of employees that have been hired.

Although it is possible to use statistical software to perform the Kendall rank correlation coefficient test it could also be done using a simple spreadsheet. Let $(x_{1,}y_1),(x_{2,}y_2),\ldots,(x_n,y_n)$ be a set of observations of the random variables X and Y[8]. A pair of observations (x_i,y_i) and (x_j,y_j) can be either concordant or discordant. A concordant pair is when the *ranks* for both elements agree, so if both $x_i>x_j$ and $y_i>y_j$ or if both $x_i<x_j$ and $y_i<y_j$. A pair is set to be discordant if $x_i>x_j$ and $y_i<y_j$ or when $x_i<x_j$ and $y_i>y_j$.

Please note the rationale behind the concordant and discordant pairs. Under

8 To test for statistical relevant correlation between interest-rate and turnover growth the interest rate would be X and turnover growth would be Y and similar for the tests between maturity and company growth and company growth and hired employees.

perfect correlation between X and Y, if the rank of x_i is larger than the rank of x_j than the rank of y_i must also be larger than the rank of y_j . In case of a tie, either $x_i = x_j$ or $y_i = y_j$, the pair is neither concordant nor discordant.

To perform the Kendall rank correlation coefficient test one counts the total amount of concordant or discordant pairs, manually or using basic spreadsheet skills. As a check, the total number of pairs is equal to $\frac{1}{2}n(n-1)$.

After counting all concordant or discordant pairs we calculate our test-statistic τ using the following formula.

$$\tau = \frac{(number\ of\ concordant\ pairs) - (number\ of\ discordant\ pairs)}{\frac{1}{2}n(n-1)}$$

If X and Y are statistically independent than τ will have a value close to zero. When we find a value “too far away” from zero we will reject H0 and accept the alternative hypothesis. To determine when something is “too far away” we need a critical value. Under H0 the distribution of τ can not be described as one of the common distributions, but for small values of n it can be calculated exactly. Tables listing the critical values for the Kendall rank correlation coefficient test can be found online.

Now we need to know α. In the case of a one-sided test (which we are performing) and a statistical significance of 0.95 α is calculated as following:

$$\alpha = \frac{(1-0.95)}{2} = 0.025 \quad .$$

Thus, after calculating τ we use a table with critical values of Kendall rank correlation coefficient test to find the critical value for α=0.025 and n. If the τ that we have calculated is larger than the critical value we reject H0 and accept the alternative hypothesis. If τ is smaller than the critical value we say that there is not enough evidence to reject H0, in other words, we cannot statistically claim correlation between X and Y.