Credit Risk Assessment and Decisions of Credit Officers in Microfinance Institutions: The Example of Banco do Nordeste in Brazil

Bachelor Thesis

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Executive Summary

This paper studies the role of credit officers as central figures of the risk assessment and decision processes in microfinance institutions (MFIs). Following a case study approach it reviews the heuristics of credit officers of Crediamigo, the largest Brazilian MFI. In addition, the institution's target market, the appropriateness of operations and credit officers' informational and incentive situation are described and evaluated. The results suggest that the judgments of credit officers are embedded into a rigid and highly standardized risk assessment process consisting of formal conditions and quantitative and qualitative analyses. It was found that credit officers (i) focus strongly on group cohesion, (ii) respond quickly to arrears, (iii) use surprise effects in customer visits and check the veracity of the obtained information by (iv) interviewing neighbors and by (v) comparing it to their experience with other microenterprises. Further, the study suggests that (vii) good relations to customer have a positive impact on the risk assessment process and that (viii) the monetary incentive scheme for credit officers is focused on portfolio quality.

Table of Contents

List of Figures

List of Tables

List of Acronyms

BNB	Banco do Nordeste do Brazil
BRL	Brazilian Real (conversion rate as of August 2, 2010: 1 BRL = 0.57 USD)[1]
CC	Crediamigo Comunidade (product)
CEAPE	Centro de Apoio aos Pequenos Empreendimentos, governmental MFI
CPF	Cadastro de Pessoa Física (credit record identification number)
DSOR	Days Sales Outstanding Ratio (financial indicator)
FI	Fixed Investment (product)
IWC	Individual Working Capital (product)
MFI	Microfinance Institution
NIWC	Necessary Investment in Working Capital (financial indicator)
NPO	Non Profit Organization
PNMPO	Programa Nacional de Microcrédito Produtivo Orientado (national program of productive oriented microcredit)
PSWC	Popular Solidarity Working Capital (product)
STR	Stock Turnover Rate (financial indicator)
SWC	Solidarity Working Capital (product)

[1]Source: Financial Times Deutschland, „Currencies, USD/BRL“, Website of the Financial Times Deutschland,

1. Introduction

Microfinance aims to provide high quality financial services to low-income clients who are considered not creditworthy by conventional banks. The financial intermediation is supposed to help them build up assets and manage their highly irregular cash flows (Collins, et al. 2009). In order to spread this form of assistance to the poor more rapidly and to make it independent from the benevolence of donors, the sustainability and profitability of the institutions play a central part. The decade of the 1990s has seen institutional transformations, away from non-profit-organizations (NPOs) towards regulated and commercial institutions (Moya 2009). While profitability increases the outreach of microfinance, it also carries undesirable forms of discrimination and mission drift with it, that is the subtle reorientation towards wealthier clients. These issues must be included in a trade-off perspective of opposed social and commercial goals (Labie, Méon and Szafarz 2009).

Two fundamental requirements for the profitability of microfinance institutions (MFIs) are excellent loan portfolio quality and high efficiency of lending operations. Portfolio quality is mainly created and safeguarded by credit officers, while their efficiency in the lending operations contributes essentially to the overall efficiency of the institution (Holtmann 2001). The risk assessment of loan applicants in MFIs usually involves a judgment of character by a credit officer. The required knowledge for that is to a large degree of idiosyncratic nature and grows out of personal work experience (Agier and Assunção 2009). Credit officers are also responsible for the implementation of non-discrimination policies. Herein, incentives to credit officers play an important role (Labie, Méon and Szafarz 2009). So far microfinance research has only sparsely addressed the interlinkage of credit officer's work with the above mentioned factors.

The thesis at hand tries to fill the vacuum and concentrates on the credit risk assessment and the decisions of credit officers including their informational and incentive situations. It aims to reveal their most important heuristics on the target customers, on the available loan products and on the lending process. To hold research conditions constant one specific institution has been surveyed. Partner in this research is the Crediamigo microfinance program of Banco do Nordeste do Brazil (BNB). The program was elected by Mix Market, an information plat form for the microfinance industry, MFI of the Year 2010 in the Americas and called an outstanding example of the group lending methodology (Mix Market 2010).

The thesis is organized as follows. To capture all relevant aspects, it contains three contextualizing chapters. Section two outlines a theoretical perspective on the underlying challenges of risk assessment in microfinance. The problems arising from asymmetric information are specified and strategies of microfinance to mitigate and reduce the resulting costs are presented. Section three discusses interviews and observations as means of information gathering and motivates the choice of Crediamigo as the object of study. The procedure of the research stay is illustrated and retains important lessons learned. Section four provides the socio-economic context of the Crediamigo microfinance program, which is important to understand the national characteristics of the program. Brazil's social stratification and the living conditions of microfinance clients are outlined. Relevant market players and providers of microfinance substitutes are presented. Section five presents the program and its ethical and strategic guidelines. It defines Crediamigo's target customers and describes the offered products. The product directed to the poorest clients is focused in particular, both because of its prominent relevance for poverty reduction and its different lending methodology.

The centerpiece of this thesis is a thorough analysis of Crediamigo's credit risk assessment and credit decision process with particular attention to the contributions of credit officers. The processes are split up into the three elements formal conditions for loan approval, quantitative analysis and qualitative judgments of applicants. Section eight reviews the monetary incentive scheme for credit officers and compares it to findings of previous research. A conclusion summarizes the most important results and rounds off this thesis.

2. Theoretical description of microfinance risk assessment

This section provides the theoretical background to the challenges of credit officers' risk assessment processes. This is fundamental for a structured understanding of the central topic. Information economy describes and classifies problems in microfinance as the consequences of different types of information asymmetry. The lending situation is structured as a principal-agent relationship. Applied to the microfinancial lending situation the MFI acts as principal that contracts an agent, the borrower, to act on its behalf. That is investing the credit and paying back the amount with a predefined interest. The principal suffers from hidden characteristics, hidden intentions, hidden actions and hidden information concerning the agent. These elements are specified in the following chapters. From information asymmetry the problems of adverse selection and moral hazard arise (J. E. Stiglitz 2000). Microfinance has developed several characteristic approaches to handle and mitigate these problems. The following chapters outline the problems and present the most important approaches of the microfinance industry.

2.1. Aspects of information asymmetry

Hidden characteristics, hidden intentions, hidden actions and hidden information characterize the relationship between borrower and lender. Assuming that both parties maximize their utility, the agent will not act in the best interest of the principal. The costs arising to the principal from opportunism of the agent are called agency costs.

2.1.1. Hidden characteristics

Hidden characteristics are qualities of the agent that are unknown to the principal ex ante. This eventually can lead to the phenomenon of adverse selection, which was discovered and described by Akerlof (1970) as a market for used cars. He argues that markets with goods of different and indiscernible qualities, thus hidden characteristics, eventually finish up only with goods of bad quality. Sellers of good quality refrain from selling, because their goods are not valuated at their fair value but at the average market value. This mechanism eventually leads to market breakdowns or monopolies. Akerlof (1970) argues that credit markets in underdeveloped countries usually have the same qualities. Potential borrowers who are good risks cannot be identified. In these countries, a successful moneylender either needs to have personal knowledge of the character of borrowers to discern good from bad risks or possess means of enforcing the contracts. Enforcing can imply threats such as violence, seizure of household goods but also formal threats such as a credit record entry. In the context of microfinance hidden characteristics can be undeclared indebtedness or irregular cash flows. Microfinance results from the necessity to make up for market shortages because of asymmetric information and has come up with new ways of dealing with the problem (Schreiner 2002).

2.1.2. Hidden intentions

Hidden intentions of agents are unobservable to the principal ex ante and ex post of the completion of contract. Thereof hold-up situations can arise, which are defined as the extortion of the principal by the agent. It can be avoided by strategies of signaling; for instance the agent can build up reputation capital. One assumes that an agent with a good reputation will continue to act in the principal's interest (Hänni 2009).

2.1.3. Hidden action

Hidden action is an element of information asymmetry ex post. It requires potential harmful actions on the part of the agent, which are unobservable and which damage the interests of the principal. The problem arising from hidden action is moral hazard. The agent reduces his effort level or does not reduce risk because he will face no consequences. Strategies to mitigate costs are incentive contracts and control mechanisms (Hänni 2009). Moral hazard in microfinance can occur if the borrower does not invest the loan as declared to the bank. This can mean to invest the credit into a venture that carries more risk or to buy unproductive consumer goods. Both deviations endanger the repayment to the MFI.

2.1.4. Hidden information

Hidden information refers to different states of nature that cannot be observed by the principal because he lacks interpretational knowledge. This situation can eventually lead to moral hazard. A borrower who is reluctant to repay can declare bankruptcy. There is no way for a credit officer to verify this declaration (Hänni 2009).

2.2. Challenges to microfinance risk management

Microfinance service providers have to deal with the above described consequences of information asymmetry. MFIs, by definition, serve populations that are considered not creditworthy by formal banks. Important signals are unavailable to low-income populations and the cost of screening is considered too high for the profits at stake. Schreiner (2000) lists the following characteristics of microfinance customers as reasons for the failure of conventional lending methodologies in microfinance:

- Lack of material collateral
- Absence of formal ownership titles
- Lack of credit history
- No approved balance and income statement
- No formal education
- No stable source of income
- Lack of contract enforcement mechanisms

The lack of collateral does not only result from poverty but also from the absence of ownership titles, as described by De Soto (1989). Lack of enforcement systems, especially in underdeveloped countries, and prohibitive small effects of scale of enforcement actions are barriers to market entry for conventional banks (Stiglitz and Hoff 1990). Clients cannot produce a credit history and thus cannot build up reputational capital, because of missing credit information systems or perpetuating exclusion from these facilities. Microfinance clients are characterized by having no formal education, which is an important signal for creditworthiness. They do not hold formal accountability in their businesses, which is reserved to formal enterprises. Moreover, microfinance clients are self-employed thus they lack a stable source of income from a salaried job (Agier and Assunção 2009).

2.3. Strategies of microfinance

The microfinance industry has come up with solutions to these problems to provide credit profitably with low interest rates to people, who lack the above mentioned signals. The following chapter presents the most important strategies.

Extensive screening

Extensive screening by credit officers, despite high marginal costs, is a major feature of microfinancial credit risk assessment and decision policies. Screening is carried out by credit officers who visit the home and business place of loan applicants. They interview applicants thoroughly to assess their financial situation and make a judgment of their character (Schreiner 2002).

Joint-liability groups

In joint-liability groups the members are liable for each other's loans. The peers perform the initial screening and the monitoring of the loan upon which the bank saves screening and monitoring costs. The installments can be collected group wise which generates effects of scale. Social ties serve as reputation capital and represent a sort of social collateral. In case of non-repayment the person faces social sanctions. The joint-liability lending methodology already dates back to the mid-19th century but has been reintroduced into the development context by the Grameen Bank (Ghatak and Guinnane 1999).

Repayment incentives: Increasing loan size and decreasing interest rates

Good repayment behavior can be incentivized by increasing loan size according to the timely payment of installments. Clients who want to grow their loan size will avoid falling into arrears. Accordingly, interest rates can be reduced in the course of the customer relationship to incentivize long adherence to the program. Dropouts are costly for MFIs because they can destabilize loan groups and represent a loss of reputation capital (Wright 2001).

Statistical credit scoring

A relatively recent approach, derived from conventional lending methodology, is statistical credit scoring. Schreiner (2000) proposes to use regression models to predict the future performance of clients upon the past performance of clients with the same characteristics. Schreiner (2000) also points to the sensitive issue of discrimination. Statistical scoring implies the consideration of inalterable determinants such as age, business activity or place of residence. If not applied with due care statistical scoring can lead to discrimination.

3. Applied research methodologies

The formal approach of the thesis at hand is a qualitative case study of one specific MFI. The data collection included a research stay of six weeks at two local branches and the regional headquarters of the Crediamigo program of BNB in Pernambuco, Brazil. The applied methodological approaches include interviews and observations of credit officers and branch managers as well as the analysis of internal and publicly available documents of the institution. These qualitative research methods originally derive from social sciences and aim to captivate human behaviors, habits and attitudes (Brusky and Fortuna 2002). The findings are compared to the applied literature of Schreiner, Norell and Holtmann.

Qualitative methodologies are particularly suited to open up new fields of research and to collect detailed and diverse impressions on actions, perceptions and operational processes. Its limitations are uncertainty about generalizability of findings and dependence on the eloquence and competence of interviewees.[2] In the following chapters the applied methodologies of interviews and observations are discussed and reasons are given for the choice of Crediamigo as the object of this case study. Practical problems as well as lessons learned from the design and the implementation of the research methodology and the research stay are retained.

3.1. Reasons for a case study of Crediamigo

Several reasons motivate the choice of the microfinance program Crediamigo of BNB as object of this case study. According to Mix Market (2010), Crediamigo represents an important model for the group lending methodology. In 2009 it was placed sixth in Mix Market's top 100 of the Americas. In the 2010 report Crediamigo was even elected best MFI of the Americas. In this report Crediamigo figures as the second MFI in terms of number of outstanding loans, number 17 in terms of market penetration, number 5 in terms of efficiency and number 10 in terms of profitability (Mix Market 2010). The second reason is that Brazil's northeast still offers a high market potential for microfinance products (Neri 2008), which implies the importance of studying and disseminating the knowledge of credit officers of successful MFIs, to support the growth of other institutions in the same region. Third, Crediamigo's

[2] Source: Flick 2006 in Rössel and Szydlik 2010.

broad range of products allows to study credit officers' risk assessment and credit decisions operations for different lending methodologies. The program's combination of different lending methodologies and the inclusion of profitable as well as non-profitable products extend the representativeness of this study.

The single focus on Crediamigo allows to collect in-depth information about credit officers of one specific institution and to keep institutional and environmental conditions constant. Conducting the interviews with a number of credit officers of two different branches allows to point out singularities, differences and analogies between branches and credit officers. The single focus on Crediamigo however excludes the possibility to compare the findings to first-hand information of other institutions.

Some practical aspects posed problems to the execution of the study. Crediamigo's size and its affiliation to BNB entail long-winded communication lines and a certain degree of bureaucracy, which hampered the accessibility of middle and senior managers of the program. The commercial orientation of Crediamigo imposed constrictions on information sources, particularly internal documents and numbers on the profitability of the individual products. The institutions employees however must be given credit for their open attitude, especially for their smooth collaboration and the assistance on the part of the branch managers.

3.2. Research preparation

The thesis at hand results from a development process of several months. The decision to explore an applied research question based on field work using qualitative survey methods marked the beginning of this process. The predefinition of the research approach was central and determinative for the further preparations. The derived requirements for the research question were practicability and relevance for MFIs. Under these constraints a provisional field of research was formulated as *Credit Risk Assessment and Decisions of Credit Officers*.

Search for a partner institution

The search for a partner institution as object of this study started with a review of the website Mix Market[3]. The website contains list of MFIs, classified according to countries and rated

[3] Mix Market, "Microfinance Institutions by Region, Brazil", Website of Mix Market, accessed on 24 Jan 2011.

according to the standards of Mix Market. Besides this basic information, the websites of the institutions in question were studied. By virtue of their lending methodology and product range the three institutions Crediamigo, Vivacred and CEAPE appeared suitable.[4] Subsequently several branch managers of the programs were contacted by telephone. Managers of Vivacred and Ceape Pernambuco stated that they had already cooperated with researchers in the past but were not interested this time. The first contacts with three managers of Crediamigo were instantly successful. They signaled interest and were willing to authorize observations and interviews with credit officers working in their branches. However a formal permission of Crediamigo's administrative headquarters had to be obtained beforehand.

Pre-established interview questionnaire

Prior to the research a loose interview schedule was prepared with the purpose to conduct semi-structured interviews. This method allows to collect samples of answers that can be compared and evaluated quantitatively, while deviations from the interview schedule are possible. The key topics of the prepared questions were taken from the applied research of Schreiner (2002) and Norell (2001). The questions aimed at deriving and assessing credit officers' decision criteria concerning the creditworthiness of clients. The developed questions centered mainly on the relevance that credit officers attached to specific factors, such as the participation of clients in lottery, attendance of religious services and their membership in neighborhood committees or church groups. Most of the previously conceived questions proved not applicable for the specific context of Crediamigo's risk assessment. The interviews therefore didn't follow the structure of the questionnaire. Nonetheless, the catalogue of questions was valuable in providing topics of conversation and so serving as a guideline.

Prior research on lending methodology and products

The study of Crediamigo's website[5] provided information on the lending methodology and offered products. The website contained detailed information on the offered products and their general terms and formal conditions. The detailed knowledge of the products was essential for a quick grasp of the risk assessment of the different products.

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[4] Vivacred is an MFI actuating in the suburbs of Rio de Janeiro. It was recently incorporated into the Crediamigo program. CEAPEs are governmental MFIs actuating in various regions of Brazil.

[5] BNB, "Crediamigo, Products", Website of BNB, accessed on 24 Jan 2011.

Research stay

The research took place in July and August 2010 at the two branches of Paulista and Recife Centro. The former branch serves mostly a mostly suburban and rural clientele, whereas the latter serves mainly urban micro-entrepreneurs. Upon arrival a meeting with the Crediamigo human resources responsible of the state of Pernambuco was arranged, whereby the research plan and the research methods were proposed. The proposal was approved but a formal request for authorization had to be processed to the headquarters of the institution. The authorization took 17 days and lead to a down-time during which interviews and observations of credit officers were not allowed. This showed the importance of obtaining the approvals of all involved charges beforehand. During the seven weeks of the stay, interviews and observations could be only conducted during approximately four weeks.

3.3. Interviews with credit officers

The initial plan was to collect data mainly by conducting interviews with credit officers at the branch offices. However credit officers were not given spare time for interviews, so the interviews had to be conducted during their working time. Questions could only be asked during the trips to clients and during the frequently occurring waiting periods. The interviews on the road finally proved valuable. The encountered challenges provided a good basis for questions and allowed to link observations to interviews. The idiosyncratic nature of the topic required frequent requesting. Identifying valuable questions was an essential strategy and helped to improve the quality of the interviews considerably. Interviews about specific topics require high competence and knowledge of the context on part of the researcher (Mey 2000). In the course of the research stay the competence of the interviewer increased and contributed to a better quality of interviews. Another means to improve the quality of the interviews was to identify particularly eloquent and competent credit officers and accompany them several times. Moreover, questions that proved suitable were asked repeatedly and to several credit officers in order to obtain a larger sample of answers and capture general patterns. On several days the credit officers could not be accompanied because they were assigned to a different area on a short notice. A way to avoid this was to meet the credit officers at the branch offices at start of work.

3.4. Observations of credit officers' routine

Credit officers were inevitably aware of being observed and informed about the object of study. The awareness may had an impact on their self-reflexivity and thus may have changed or reinforced certain behaviors (Brüsemeister 2000). However the researcher did not contribute in any way to the credit officers' work. The observations were focused on credit officers' actions and behaviors concerning the credit risk assessment process. Frequently the observations served as an inspiration for interview questions. Observed characteristics were often discussed with the credit officers.

Interviews and observation notes

Notes were taken simultaneously during interviews and observations. Ideally the handwritten notes were structured and digitized on the same day. The typewriting allowed to gain scientific distance to the information and to draw methodological and theoretical conclusions. Theoretical conclusions in terms of abstractions and intermediary hypothesis were drawn. Methodological reflections centered on topics that had to be investigated further and on important questions that arose through rereading the notes.

3.5. Further research methods

Further methods include the study of documents and the technique of comparing information from different survey methods. Official documents of the institution served to understand the technical features of the lending methodology. Unfortunately access to detailed documentation on the productivity of products was not granted. The application of more than one survey method permitted triangulation, a strategy of comparing information from different frames of survey. The method can yield additional insights because it reveals differences and contradictions between gathered information from interviews and observations (Brüsemeister 2000).

4. Socioeconomic context

This section provides a general background of the social, economic and legal circumstances of Crediamigo in Brazil, specifically in the Northeast. The program's risk assessment and credit decision processes can only be evaluated in its context. The discussed particularities are competition from other credit facilities directed to consumption, a pronounced social stratification and well-established social programs of high outreach.

4.1. Social stratification

The distinction of poverty levels in Brazil generally draws on models of social classes. Such a model is presented at this point to illustrate the living situations of microfinance clients and to evaluate Crediamigo's poverty orientation qualitatively. Institutes of opinion research usually classify Brazilian society into five or more distinct social classes, which are defined by qualitative indicators such as household goods and by quantitative measures such as household income. Household income is measured in fractions of the national minimum wage. The minimum wage as of September 2010 was BRL 510.00.[6] Importantly, families and not individuals are the reference entity, while the models abstract from the number of family members. The below presented model was published in the business magazine Exame.[7] It draws a relatively accurate picture of household goods and consumption of the classes E to A.

Class E

Households of Class E have a household income of less than 2 minimum wages. They tend to live in rural areas, at the outskirts of cities or in favelas. Those households often depend on governmental subsidies such as the Bolsa Família program.[8] Families of class E typically have to send their children to public schools, which are infamous for their relatively low standards. Their homes are typically equipped with a refrigerator, second-hand furniture and a simple television set. They normally don't have a landline but use prepaid cell phones. The percentage of self-employed workers in the Northeast living in this income band was 27% in 2003.[9] Although not stated explicitly, class E contains populations living under much worse conditions than described. In the northeastern region of Brazil 49.70% of the population live in absolute poverty, defined by a per capita income of half a minimum wage.[10]

[6] Source: Portalbrasil, „Economia, Salário Mínimo" Website of Portalbrasil, accessed on 24 Jan 2011.
[7] Source: Stefano 2010.
[8] Bolsa Família is a conditional cash transfer program outlined in chapter 4.2.
[9] Source: Neri 2008, p. 106.
[10] Source: Calvancanti 2010, p. 20.

Class D

Household income lies between 2 and 4 minimum salaries. Families may possess more elaborated household devices such as microwaves and fit their homes out with furniture from discount stores. Sometimes families manage to send children to affordable private schools. Households typically have no computer at home but use internet-cafés. Some families may possess a motorbike or a second-hand car. The impression gained from the visits to Crediamigo clients showed that most of them belonged to the social classes D or E. Higher loan size appeared to correlate strongly with better living conditions. In 2003, 31% of self-employed workers in the Northeastern were part of class D.[11]

Class C

Families of class C, defined by an income of 4 - 10 minimum wages, form the Brazilian middle class. They participate strongly in the consumer market and make heavy use of consumer credit. In addition to the goods of classes D and E they typically own a washing-machine, a large refrigerator and a computer with internet access and a car. Children of class C attend private schools and private universities. Families typically live at the outskirts of cities and can afford domestic travels. 29% of the northeastern population in 2003 belonged to this category.[11]

Classes A and B

Families of class A and B earn more than 10 minimum incomes and form the Brazilian upper class. Although Crediamigo imposes no restriction on applicants' income levels, no visited client appeared to belong to class A and B. Only 13% of self-employed workers belong to the classes A and B.[11]

4.2. Social programs

A variety of social security measures exist in Brazil, whereof the majority is reserved to formal workers. Social programs of income distribution directed to families working in the informal economy have grown considerably since 1995. Meanwhile several governmental and non-governmental income distribution programs have been pooled in the conditioned cash transfer program Bolsa Família. Potential beneficiaries are identified through a single data-

[11] Source: Neri 2008, p. 106.

base of federal scope where living conditions of families are registered. The cash transfers are conditioned on regular school attendance for children and adolescents and on the completion of vaccines and regular health and growth checks of children. The paid amounts range from BRL 20.00 - 182.00 depending on the number of family members, their age and the family situation (Galiza 2009) and (Lindert, et al. 2007). Other social programs directed to the extremely poor don't include direct money transfers. Examples are the Literate Brazil Project, the Pro Youth, the National Biodiesel and the Light for All programs. Lindert et al. (2007) pay in particular tribute to the Bolsa Família program, praising its target accuracy and impacts on reducing poverty and inequality. Bolsa Família reaches over 46 million people, which makes it the largest conditional cash transfer program in the world.

4.2.1. Collaborations with social programs

Lindert et al. (2007) and Galiza (2009) attribute Crediamigo the vital function of a complementary income-generating opportunity in addition to social programs. It is important to retain that microfinance in Brazil is backed by other social policies. This justifies the program's predominant focus on owners of microenterprises.

The visited Crediamigo branches cooperate closely with governmental and non-governmental social initiatives. As an efficient outreach strategy microcredits are promoted among graduates of governmental centers for professional formation. Ideally, the colleagues know each other from the courses and thus have no problems to form joint-liability groups. Another form of collaboration with social initiatives occurs in terms of risk assessment. When credit officers enter a new area of town, they draw on the knowledge of social workers, pastors and community leaders. They are contacted by branch managers and asked to indicate persons who are suitable to form the first joint-liability groups. Following this invigorating assistance, the further dissemination of microfinance services is assured by word-of-mouth advertising. When credit officers have gained knowledge of the area they can continue their work without further assistance.

4.3. Competitive environment

An important characteristic for microfinance service providers is Brazil's highly profitable and sophisticated banking sector. Formal banks generally don't make lump sum disbursements and impose stringent requirements to applicants such as a proof of minimal income. However some of them have lowered the entrance barrier for low-income clients. They offer microcredit in commercial ways using post offices, supermarkets and lottery officers as innovative delivery channels. Other banks founded separate entities to provide microfinance services in a non-commercial way. Other important credit facilities include payment plans from retail stores, informal moneylenders and supplier credit (Fiori and Young 2005). Crediamigo's credit officers try to convince clients not to recur to these offers. The offers generally come with high interest rates and clients run the risk of becoming over-indebted (Nichter, Goldmark and Fiori 2002).

Microfinance in Brazil has a high potential demand. In 2003 only 1.3% of 22.5 Mio microenterprises were MFI clients.[12] Considering the number of microenterprises stable, the market penetration has risen to 3.6% in 2010.[13] Subsequently the most important providers of microfinance services and substitutes are presented with special regard to competitive aspects and threats to Crediamigo's credit portfolio.

Microcredits from MFIs and conventional banks

Although many MFIs in Brazil are governmental initiatives, Crediamigo faces the fiercest competition from commercial microfinance programs. Banco Bradesco was the most important competitor to Crediamigo in the visited neighborhoods. It offers microloans between BRL 20.00 and BRL 1920.00 with reimbursement periods of 4 - 12 months. The interest rate is 2% per month with a one-time credit opening tax of 3%. Banco Bradesco's lending methodology does not include solidarity groups or home visits but requires a proof of income.[14] Micro-entrepreneurs normally cannot comply with this requirement, thus the bank's policy excludes large fractions of the population that are in need of microcredits. On the other hand it is known among Crediamigo clients that Banco Bradesco grants higher loan sizes. A Crediamigo client, who didn't obtain a demanded loan increase, complained about Crediamigo's rigid policies and threatened to cross over to Banco Bradesco. The bank seems to be a viable alternative to clients who can provide a proof of income.

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[12] Source: Neri 2008, p. 47.
[13] Source: Mix Market, "Microfinance Institutions by Region, Brazil", Website of Mix Market, accessed on 24 Jan 2011.
[14] Banco Bradesco, „Prime, Microcrédito", Website of Banco Bradesco, accessed on 24 Jan 2011

Another important commercial microfinance service provider in the region is Banco do Brasil. Its microfinance program offers amounts between BRL 250.00 and 15'000.00 to clients with interest rates of less than 3.9% per month. A proof of income is not required. The lending methodology doesn't include joint-liability but a visit to the business place of applicants. In contrast to Crediamigo and Banco Bradesco a business activity of more than one year is required.[15] To date, serious competition from commercial banks has been confined to higher income segments. Whether downscaling commercial banks will pose a threat to Crediamigo's profitability in the future remains to be seen.

In the past Crediamigo has already experienced excessive competition from other MFIs. Credit officers mentioned the intrusion of BancoSol of Bolivia. BancoSol's market entry was perceived damaging to Crediamigo and even opposed to the social purpose of microfinance services. BancoSol opted for a market penetration strategy trying to attract Crediamigo's credit officers with better work contracts. The contracted credit officers were supposed to offer an additional loan to their clients. Many clients accepted a loan of BancoSol but eventually fell into arrears because the sums were not invested productively. Another issue arising from competition is that the term *microcredit* is not always applied to define an ethical and social lending concept. Consumer credits with high interest rates are also called microcredits, indistinctively of their social orientation. This has lead to the dilution of the related social concept and skepticism on the part of potential borrowers.

Payment plans

Payment plans, offered by large retailers, serve to finance furniture, household appliances, clothes, shoes and similar products. They are the most popular source of credit among the populations studied by Brusky and Fortuna (2002), appreciated for their convenience, even though they require the same documentations as microfinance loans. The reimbursement periods can be extended to decrease the installment size and let them appear unproblematic, even though clients are aware of the interest rates. Payment plans are aggressively marketed. For amounts as small as BRL 30.00 customers are asked whether they want to pay debit or by credit card. The highly competitive retail market has lead to payment plans with zero interest rate. However it is highly probable that these retailers pass on the cost of the missed out inter-

[15] Source: Banco do Brasil, „Você, Microcrédito", Website of Banco do Brasil, accessed on 24 Jan 2011.

est to the price, making products more costly for everybody. Many microfinance clients using these credit facilities end up in a vicious circle of installments (Brusky and Fortuna 2002).

Brusky and Fortuna (2002) observed differences in the perception of credit modalities. Buying goods by payment plans is seen as the natural behavior while borrowing a sum of money to buy the good is seen as non-natural behavior. Therefore, most people prefer payment plans over borrowing money. Credit officers try to raise awareness of the high interest rates and the threats imposing to their credit record.[16]

Supplier credit

Micro-entrepreneurs are usually granted credit by their suppliers that include high interest rates (Brusky and Fortuna 2002). Credit officers inform them about the high cost of the interest rates. They usually ask: "*Do you buy your merchandise on the spot?*" They also point out that by buying goods in large amounts, discounts can be granted.

Informal moneylenders

Informal moneylenders are disliked but pervasive in poor neighborhoods. The cost of their loans is rather seen as a premium than as an interest rate and usually adds up to about 20% per month. The name in Brazilian Portuguese is *agiotas* which refers to the word *ágio*, 'premium', as they are considered as coverers of premiums. Risk assessment and enforcement of contract are completely based upon the social proximity between lender and borrower. However more professional moneylenders sometimes require collaterals and formal documentations. If the debtor defaults, agiotas frequently resort to the seizure of household assets or bank cards. Violence and threats are common recovery tactics. The measures of debt collection are seen as disproportionate to the amounts at stake (Brusky and Fortuna 2002).

Incidents linked to informal moneylenders can pose threats to reimbursement and endanger the harmony of Crediamigo solidarity groups. Assessors said that they would like to ban their clients from dealing with informal moneylenders. Especially in poor neighborhoods problems with informal moneylenders occur frequently. Even family members of clients are sometimes acting as informal moneylenders. This fact is retained as a risk factor by credit officers but does not justify exclusion of the program.

[16] Brazil has a credit information system, which is described in chapter 6.1.1

Informal store credit

This form of credit is granted by small stores and requires no documentation. The amount per client does not exceed BRL 50.00 and is usually paid back after two to four weeks. As the rule it comes with no interest rate. Clients almost certainly pay back because this form of credit is needed to compensate for income fluctuations. Shopkeepers see no other way to grant advances; otherwise they would lose a lot of customers. The accounts receivable of Crediamigo clients was typically around BRL 500.00.[17] The decreasing payment morale of clients was once pushed by forward by a client as the cause of his outstanding payment.

Borrowed credit

People, who are unable to fulfill the requirements of credit providers, almost systematically draw on the name of an acquaintance. For the person, who is asked to lend his name, it is difficult to decline because the practice is considered natural (Brusky and Fortuna 2002). Crediamigo's policy does not allow to grant borrowed credits. Credit officers use several methods to expose this practice. The interviews with applicants about the business' key numbers most certainly reveal applicants who demand credit for someone else. Interviews with neighbors about the applicants also serve to detect borrowed loans.[18] If credit officer are still suspicious about an applicant, they usually make a follow-up visit to check whether the sum has been invested as promised. However, in many cases applicants frankly tell that they are applying on behalf of a friend.

5. The Crediamigo microfinance program

Crediamigo was founded 1996 as a microfinance program by BNB. The governmental development bank BNB provided large governmental credit lines to develop infrastructure and industry in the poor northeastern region of Brazil. In the mid 1990ies BNB made an effort to modernize and increase its efficiency. Responsibilities and operations were decentralized in order to focus on micro and small businesses in the region. In an attempt to scale operations further down the Crediamigo microfinance program was launched in partnership with the

[17] The exemplary balance statement (compare Appendix I) shows amounts of BRL 220.00, 500.00 and 2'000.00.
[18] The mentioned techniques are explained in chapter 6.3.

World Bank that offered its expertise (Fiori and Young 2005). The following guidelines were set to the program:

- The program would charge interest rates to market conditions
- Staff salaries would be based on results
- Credit decisions would be decentralized

The implementation of the program was carried out slowly because the lending methodology of microfinance was completely new to BNB. A pilot project named Crediamigo was started in five BNB branches, directed by recently trained BNB executives and transition agents of Accion Internacional.[19] The first loan officers were recruited and trained by Accion, which also implemented an information system. The initial phase was financed by a World Bank grant of 0.9 Mio USD. After four months of successful operations, BNB senior executives decided to expand the project to 50 branches. Emphasis was laid on growth and credit officers were pushed to expand their loan portfolio with disregard for risk management. The precipitated start resulted in a 2 Mio USD loss and a recovery phase of six months under the assistance of Accion. As a consequence of this experience new rules were set. From that point on, branches were evaluated individually and new bonus schemes for loan officers were based on portfolio quality. In 1999 World Bank approved a 50 Mio USD loan with the condition to maintain good portfolio quality. Crediamigo works profitable and is able to pay its investors interest rates according to market conditions (Fiori and Young 2005).

Neri (2008) postulates that in the decade of 2000 Crediamigo has delivered the demonstration effect needed by the Brazilian microfinance industry. From 2002 to 2009 the active loan portfolio has increased 1175% while the number of active clients has increased 444%. This corresponds to annually compounded growth rates of 42% and 23% respectively.[20]

5.1. Mission statement

The area of actuation, the principles and moral convictions of MFIs are often expressed in a mission statement. The Crediamigo program has a set of values, a vision and a mission state-

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[19] Accion Internacional, further mentioned as Accion, is an NPO that provides technical assistance to MFIs.
[20] Source: BNB, Annual Report Crediamigo 2009.

ment that define its ethic purpose and specify its target customers. The visited branches had posters of the statements in prominent places. Branch managers and credit officers were well aware of the program's values and frequently referred to them. For the purpose of this case study it is sufficient to review only the mission statement, which reads as follows:

> *"Contribute to micro-enterprise development by offering sustainable, timely, and accessible financial services and business consulting, providing new income and operation opportunities in Brazil."*[21]

The first line specifies *micro-entrepreneurs* as Crediamigo's target customers. Crediamigo's operations are indeed exclusively directed to the productive sector. *Sustainable, timely and accessible financial services* are typical claims of microfinance services. *Business consulting* of Crediamigo includes workshops and information material about business improvements through planning, quality- and sales improvements. *New income opportunities* refers to the created jobs in the informal and micro-economy. The subsequent chapters will provide evidence for the supposition that Crediamigo widely complies with its mission statement.

On the surface Crediamigo's corporate mission does not differ significantly from that of conventional banks. Moreover the central social values of the program are communicated subtly, which implies that the MFI does not want to stand out from conventional banks. An analysis of a corpus of advertizing messages reveals that the terms *microcredit* and *microfinance* are not mentioned at all.[22] The exemption may be due to the ignorance of the concept among the targeted population or to its dilution by informal moneylenders, as was suggested in chapter 4.3. As only hints to the program's ethical dimension, the words *crescer*, 'grow', and *desenvolver*, 'develop', appear with significant frequency in Crediamigo's advertising material.

5.2. Target customers

The mission statement predefines the target population as micro-entrepreneurs. In fact, the definition of the target market is already given because Crediamigo implements the national

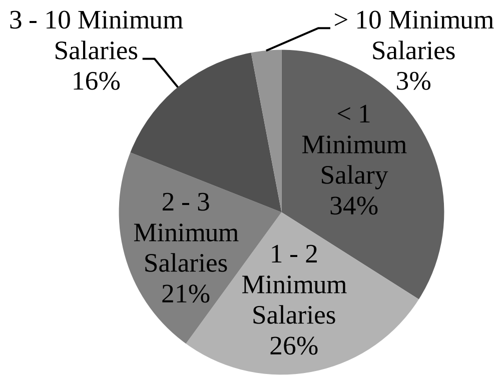
[21] Source: BNB, Annual Report Crediamigo 2009.
[22] Compare Appendix II: Corpus of selected advertising messages.

productive oriented microcredit program PNMPO.[23] The postulation of this chapter is that micro-entrepreneurial activities correlate strongly with poor living conditions and thus make microfinance in this region an important instrument for poverty reduction. The comprehensive study of Neri (2008) about the client profile of Crediamigo concludes that the credit directed to micro-entrepreneurs automatically benefits the low-income population. 65% of the clients' families declared having difficulties to ensure their alimentation until the end of the month. 19% stated that their alimentation is regularly not sufficient.

Client profile

Approximately 65% of the clients are women although the program has no specific gender policy. The income distribution of the clients' families is illustrated in Figure 1. It shows that 81% of clients have family incomes of less than three minimum salaries and thus pertain to class E and D. An analysis of annual reports reveals that income distribution has not changed significantly in the past five years.[24] Figure 1 displays the income distribution of Crediamigo clients. The income of more than half of the clients lies below the mark of two minimum salaries.

Figure 1: Income distribution of Crediamigo clients



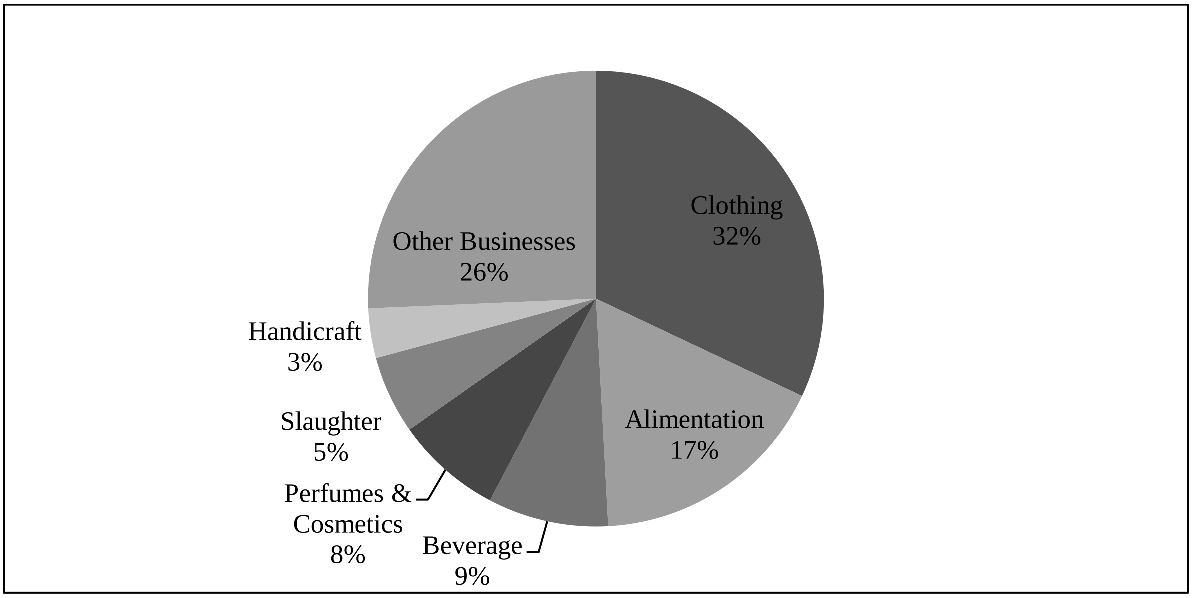
Source: BNB, Annual Report Crediamigo 2009.

[23] Source: Ministério do Trabalho e Emprego, "Emprego e Renda, PNMPO", Website of the Brazilian Department of Labor, accessed on 24 Jan 2011.
[24] Source: BNB, Annual Report Crediamigo 2005 – 2009; BNB, „Crediamigo, Results" Website of BNB, accessed on 24 Jan 2011.

93% of the businesses of clients fall into the category trading activities. 6% of clients are service providers and 1% is self-employed in the manufacturing sector.[25] According to credit officers trading activities bear the smallest risk, because price margins are predictable, working capital turnover is highest and sales are relatively stable. Industrial or manufacturing activities in contrast underlie higher uncertainties of achieved prices and sales. Services, which require expensive equipments such as computers and printers or motorcycles for delivery, are the most risky activities. The amortization of the investments generally takes longer and the profits are difficult to predict. Those investments are financed with the fixed investment loan, which accordingly covers the highest interest rates of the program and requires minimal adherence to the program of one year.

Figure 2 shows the distributions of clients' occupations. *Clothing business* refers mostly to trading of clothes, while the category *perfumes and cosmetics* comprises mostly credits for franchisees of cosmetics labels.

Figure 2: Distribution of customer's occupations



Source: BNB, Annual Report Crediamigo 2008.

[25] Source: BNB, Annual Report Crediamigo 2009.

5.3. Products

Crediamigo offers five loan products and one insurance product. The product range has been gradually extended since the beginnings of the program in 1997. The products are tailored to different living conditions and income levels. As observable in Table 1, the minimum loan size was continuously reduced from BRL 1000.00 in 1997 to BRL 100.00 in 2003. With the implementation of a life insurance, Crediamigo followed the industry trend towards providing comprehensive financial services (Collins, et al. 2009). Since 2006 no further products have been implemented, although the BNB's annual report of 2008 still lists product innovations as an element of the Crediamigo's of strategy.

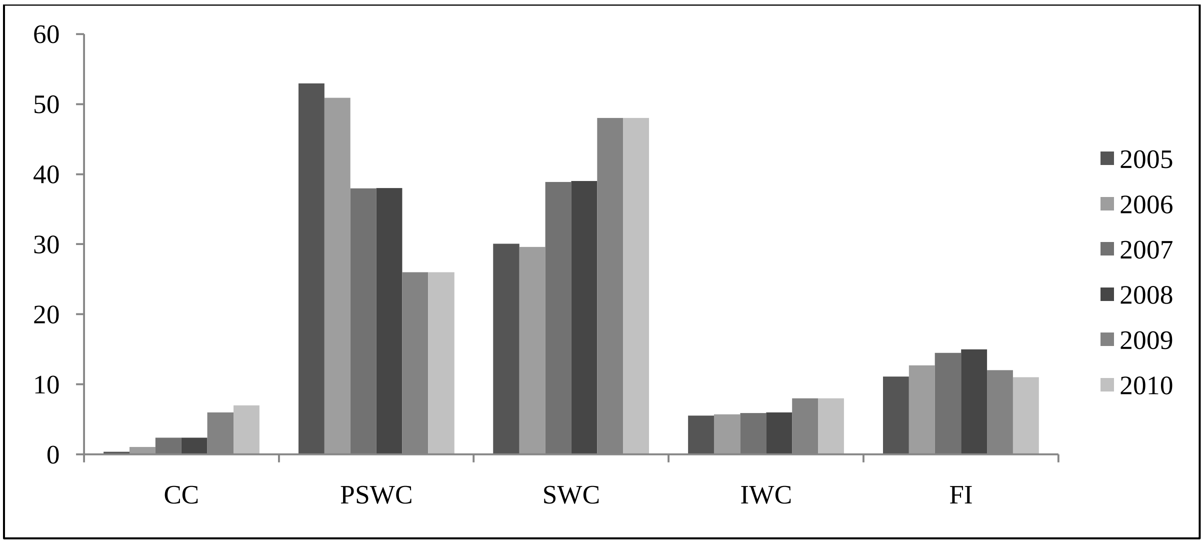
Table 1: Product innovation and loan size

Year	Loan Product	Abbreviation	Amount
1997:	Solidarity Working Capital	SWC	BRL 1000.00 - 10'000.00
1999:	Individual Working Capital	IWC	BRL 300.00 – 15'000.00
2001:	Fixed Investment	FI	BRL 300.00 – 8000.00
2003:	Popular Solidarity Working Capital	PSWC	BRL 100.00 – 1000.00
2005:	Crediamigo Comunidade	CC	BRL 100.00 – 1000.00
2006:	Crediamigo Life Insurance		

Source: BNB, Annual Report Crediamigo 2009.

In recent years the importance of the popular solidarity working capital product has shifted to the solidarity working capital. Figure 3 shows the relative proportion of the different loan products in the loan portfolio from December 2005 to August 2010. The loan product, directed to the poorest fraction of the population, Crediamigo Comunidade, still accounts for a small proportion of Crediamigo's loan portfolio. Unlike the other products it cannot be cross-sold to existing customers but has to build its own customer base among a poor fraction of the population.

Figure 3: Relative proportions of products in terms of portfolio volume.



Source: BNB, Annual Reports Crediamigo 2005–2009; BNB, „Crediamigo, Results“ Website of BNB, accessed on 24 Jan 2011.

The different loan products in terms of lending methodology are subsequently presented and their most important aspects concerning the risk assessment are mentioned. Particular attention is given to the Crediamigo Comunidade loan because of its distinct lending methodology, risk assessment and credit decision process. Sources are the Crediamigo website[26], the facts sheet Crediamigo on loan products (Banco do Nordeste 2010) and the Crediamigo annual report 2009.

Solidarity Working Capital

Solidarity Working Capital was the first product of Crediamigo and exists since the pilot project in 1997. The product has a stepped lending scheme and decreasing interest rates. Table 2 summarizes the product’s key data. The loan is granted to solidarity groups of three to ten persons. After every third repaid loan the interest rate per month decreases 0.25% percentage points. Group members can apply for individual loan sizes. The repayment periods of the members have to be identical and can lie between 4 to 12 months. Clients often chose the shortest possible period, to increase their loan size rapidly. The members have equal rights, but one of them is appointed as group coordinator, serving as liaison to the bank and being in charge for the execution of the payments.

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[26] BNB, “Crediamigo, Products”, Website of BNB, accessed on 24 Jan 2011.

Table 2: Key data of the SWC product

Working capital for raw materials and trading goods	
Amounts:	BRL 1000.00 – BRL 10’000.00*
Liability:	Groups from 3 to 10 persons
Interest rate:	2% – 3% per month, 3% TAC**
Payment terms:	4 - 12 months, monthly installments
* Amounts are per person	** Tax on opening of credit

Source: Banco do Nordeste 2010

Popular Solidarity Working Capital

The lending methodology of the PSWC product is identical to that of the SWC. Table 3 summarizes the key data of the PSWC loan. The main difference to the SWC loan are the fixed instead of decreasing interest rates. Solidarity groups often evolve from PSWC to SWC loans. The transition between the two products can cause problems, if the demand for credit of the individual members requires different products. In this case one member either has to modify his requested loan size or the member with the highest demand has to apply additionally for an individual loan. The discontinuity around the separating threshold of BRL 1000.00 can have an impact on credit risk, because members are asked to modify their requested amount. Considering the similar lending methodology of the two products it should be possible to flexibilize the change from one to the other loan.

Table 3: Key Data of the SWC product

Working Capital for raw materials and trading goods	
Amounts:	BRL 100.00 – BRL 1’000.00*
Liability:	Groups from 3 to 10 persons
Interest rate:	1,19% per month, 3% TAC**
Payment terms:	4 - 12 months, monthly installments
* Amounts are per person	** Tax on opening of credit

Source: Banco do Nordeste 2010

Fixed Investment

This product provides financial resources for investments in machinery and equipment or for shop or home reforms to individuals. It is the only credit that allows nonproductive investments. Because fixed investments bear more risk, the loan comes with a relatively high fixed interest rate. In addition the bank requires a guarantor with a proof of income as security. Table 4 lists the main features of the fixed investment product.

Table 4: Key data of the FI product

Capital for equipments, store or house reform	
Amounts:	BRL 300.00 – 8'000.00
Payment terms:	≤ 36 months, monthly installments
Liability:	Individual, guarantor with proof of income
Interest rate:	2,95% effective per month, 3% TAC*
* Tax on opening of credit	

Source: Banco do Nordeste 2010

The demand for shop and store reform among the visited clients was very high. Thus the condition of being Crediamigo client for more than 12 months is an important incentive for adherence to the program.

Individual Working Capital

Individual Working Capital is, like the FI product, exclusively granted to existing clients. The requirement of a guarantor with proof of income applies as well. Several visited clients alleged that this criterion is very hard to meet, because almost no one is willing to serve as guarantors.

Table 5 lists the key data for the fixed investments. The amount of BRL 15'000.00 is at the same time the maximum amount of overall indebtedness in the Crediamigo program.

Table 5: Key data of the IWC product

Working capital for raw materials and trading goods	
Amounts:	BRL 300.00 – 15’000.00
Payment terms:	≤ 12 months, monthly installments
Liability:	Individual, guarantor with proof of income
Interest rate:	2- 3% per month, 3%*
* Tax on opening of credit	

Source: Crediamigo 2010

Individual loans are repeatedly demanded by clients of group loans who require more capital than their group loans would allow. The individual lending methodology was appreciated for its convenience by some visited clients and therefore preferred to group loans. However it is remarkable that the majority of loans are granted to joint-liability groups and not to individual borrowers. MFIs in emerging markets typically rely heavily on individual loans (Hänni 2009).

Crediamigo Life Insurance

Since 2006 Crediamigo offers a life insurance at the annual cost of BRL 25.00. It grants a total compensation of BRL 3’850.00 to a beneficiary in the case of death of the insured person. Additionally the insured person participates in weekly lottery draws of BRL 1’500.00. It is characteristic for microinsurance products in Brazil that the insurance is bundled with benefits in life (Bester, et al. 2010). The life insurance is mostly cross-sold to existing Crediamigo clients. 94’000 policies were sold in 2009, which accounts for 17% of active borrowers.[27]

5.3.1. Crediamigo Comunidade

This product was introduced in 2005 and constituted a significant reduction of the entrance barrier for customers by virtue of its small minimal loan size and lowered requirements. As the first and still only product it requires no prior business activity for up to 30% of the group members. It targets mostly financially inexperienced micro-entrepreneurs and persons who want to initiate a business activity. According to branch managers CC loans are supposed to

[27] Source: BNB, Annual Report Crediamigo 2009.

foster clients' social capital, teach them to make financial decisions and build up a relationship to the bank. Table 6 summarizes the key facts of CC loans. The product offers the lowest interest rates in the program.

Table 6: Key data on Crediamigo Comunidade

Working capital for raw materials and trading goods	
Amounts:	BRL 100.00 – BRL 1'000.00*
Payment terms:	≤ 12 months, biweekly or monthly installments
Liability:	Solidarity group (15-30 persons)
Interest rate:	0.99% per month, 3% TAC**
* Amounts are per person ** Tax on opening of credit	

Source: Banco do Nordeste 2010

The most important characteristic is that the risk assessment process, similar to the Grameen model, is left to a large degree with the solidarity group. The minimal size of the solidarity groups is 15 persons, which is considerably larger than the 3 persons required for the other products. The joint-liability groups are called *bancos comunidade* or simply *bancos* in Portuguese, which can be translated into 'village-', respectively 'community bank'. A further characteristic is that 10% of the loan always has to remain in an account and can only be withdrawn with the consent of the three leading members. The retained amount covers outstanding payments and thus serves as collateral for the bank. As a negative effect this reduces the effective loan size and thus increases the interest charges on the invested money.

Lending methodology

The forming of the community banks requires particular effort on the part of credit officers and branch managers. In the first of four visits, the assessor meets the founding members of the bank for an information session and explains the functionality of the loan. Thereafter the founders are asked to recruit additional members among friends, colleges and neighbors. According to a community leader with experience in the forming of community banks the evaluation of candidates involves an extensive judgment of their character and behavior. Sought traits are entrepreneurial spirit, ability and the steadiness of the source of income. Local vendors contribute their knowledge about the candidates' payment behavior. A person that is unknown to the other peers can only be brought in, if his acquaintance guarantees for him. Close family members cannot be member of the same group but cousins are allowed.

A second meeting takes place when at least 15 members are designated. The candidates are registered and have to bring a proof of residence, an ID card and their credit record identification. The credit records of all candidates are checked. Applicants with payments in arrears have to acquit their debt beforehand or are excluded. In the third meeting the members elect a board with a president, a cashier, a secretary and two substitutes. Under its direction the loan size of every member is being negotiated and the period and frequency of installments chosen. Every member can apply for a sum between BRL 100.00 and 1000.00, even though the highest granted loan is in fact BRL 500.00. Not disclosing the maximum amount retains a self-revealing mechanism. Clients with high bids raise suspicion. Although the bids are generally prudent and small, credit officers can reduce the loans size according to their impression. Credit officers call the first loan *educational* both for clients and Crediamigo because both parties get to know each other.

The last meeting is a festive inauguration of the bank where all community bank members and both the branch manager and the involved credit officer take part. Symbolism and rituals play an important role. The members of the village bank share drinks and food, chose a name for their bank, plant a tree and hold a ribbon cutting ceremony. The branch manager explains again the functionality of the credit and underlines in particular the differences to social grants, which many clients receive in addition.

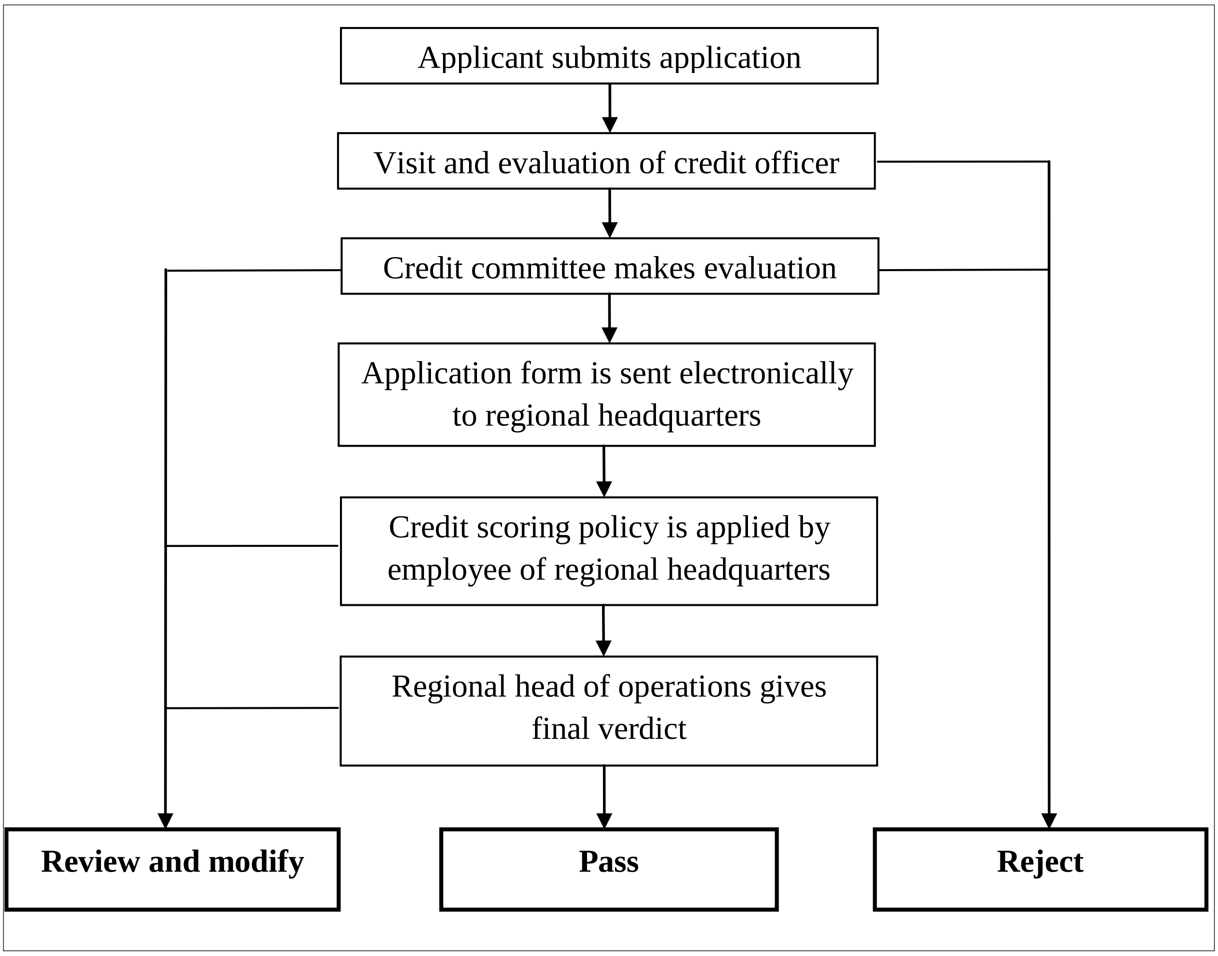
Monitoring of Crediamigo Comunidade loans

A few hours after the inauguration members can withdraw their credit at the bank. They will receive a debit card to withdraw the credit from any ATM. The date of the first installment can be chosen either one or two months after disbursement. To collect the installments the village bank members assemble one day before the due date of the installment. Ideally, the concerned loan officer takes part in the assemblies. Those should be transformed into convivial events to incentivize the participation and the commitment of the members. One visited village bank had in fact suspended the assemblies because the loan officer didn’t take part anymore. Some members delayed their payments and one member even defaulted on his quit the bank. According to credit officers the commitment to attend and contribute to the assemblies correlates with payment morale.

6. Credit risk assessment and decision process

The following section outlines the common methodological features of the risk assessment and credit decision process of all loans, with exception of the CC product. Applications for new loans and for loan renewals have to pass three instances and are being evaluated by formal, quantitative and qualitative criteria. Figure 4 gives an overview of the credit decision process.

Figure 4: Crediamigo's credit decision process



Source: Own research

The process starts with the credit officer's visit of the solidarity group at the residence or business place of one of the members. The solidarity groups are always formed by the applicants themselves without any assistance or interference of Crediamigo. The credit officer interviews every group member individually. The interview is organized according to the required information of the application form, which contains the following nine sections:[28]

- I Summary
- II Financial indicators
- III Credit record inquiry
- IV Other contracted products
- V Seasonality
- VI Cash flow statement
- VII Balance Statement
- VIII Group Composition
- IX Observation

During the interview the credit officer carefully observes the applicants' behavior and judges their statements according to his personal experience. If all formal and quantitative conditions are met and the credit officer has not detected any discrepancies he agrees with the members on their individual loan sizes and the collective repayment period. The credit officer's contribution to the risk assessment and credit decision process ends with a presentation of the solidarity group in front of a credit committee. The committee gathers occasionally at the local branch offices and is constituted of an impair number of at least three employees, always including the branch manager. The third member is usually a colleague who has worked or will work in the future with the concerned solidarity group. The credit committee can decide upon modifying, rejecting or passing on the application. Modifications frequently concern the loan size. The modification is based upon the quantitative analysis, explained in chapter 6.2. Importantly, if applicants comply to the formal and quantitative conditions they are almost certainly granted a first loan.

The application form contains only one field for credit officers' qualitative impressions. For new loan groups the field contains a short presentation of the group and its members. In loan renewals the field is usually left blank and only used to justify an overriding of the formal

[28] For an exemplary application form compare Appendix I.

policy. The following chapters focus on the three main elements of the risk assessment and credit decision process which are formal criteria, quantitative- and qualitative analysis.

6.1. Formal criteria

Applicants of all loan products have to fulfill five formal criteria. Crediamigo herein benefits from governmental frameworks that provide proofs of personal identification, age, residence and credit record. The criteria are as follows:

- Identity card
- Being of legal age (18 years)
- Proof of residence
- Clean credit record
- Business activity for at least six month

The required proof of residence can pose a problem for applicants residing in poor areas. Water and electricity bills serve as proofs of residence. People of class E often live in areas without water and electricity supply. This excludes them from the program, which is an undesirable discriminatory effect.

In the following subchapters the function of the two most exclusive criteria, clean credit record and previous business activity are discussed. The focus is set on how credit officers collect and verify the proofs. They chapters also include a discussion of the advantages and potential discriminatory effects.

6.1.1. Clean credit record

Brazil has a well developed credit information system in place that provides lenders with juridical and economic information on loan applicants. The information is tied to the national identification system on natural persons called *Cadastro de Pessoas Físicas*, abbreviated CPF. Crediamigo's administrational staff consults three different credit bureaus to check the applicants' debt status. No outstanding debt must be registered as a condition for a first loan.

Credit information systems are important for microfinance service providers, especially in competitive credit markets. The transparency serves as *reputation collateral* and is an excellent predictor for repayment (Miller 2003). However, the over-indebtedness of a large fraction of the targeted population poses a problem to MFIs in Brazil. The situation is due to the excessive use of payment plans in combination with financial and budgetary inexperience. A survey of Brusky and Fortuna (2002) showed that 20 – 30% of the surveyed population had a marred credit record.

The criterion creates dilemmas for credit officers, especially in the case of loan renewals. Long-lasting customer relationships can be lost due to clients' temporary indebtedness. Credit officers deal with this problem by scheduling visits for loan renewals up to one month in advance. If clients have a marred credit record they can be averted and have enough time to acquit their debt. In pressing cases Crediamigo also accepts receipts as proof of debt settlement. Updates of the credit information system may be delayed. Another option to assure loan renewal is to override the criterion, further explained in chapter 6.3.3. Brusky and Fortuna (2002) propose that MFIs ease up the requirement of a clean credit record. They even suggest offering loans for debt recovery. They argue that people with a marred credit record are stuck in a situation of both financial and economic semi-marginality. Thus they are eager to reestablish their credibility and fulfill their financial obligations. Applicants of Crediamigo loans who are not yet registered in the CPF system are required to issue an identification number. Credit officers underlined the symbolic character of the registration as a step towards citizenship.

6.1.2. Ongoing business activity

A preliminary business activity of six months or more is required for applicants of all loan products. A partial exception holds for the CC loan, where up to 30% of members can start up a business. Credit officer don't ask applicants to prove their business activity formally. However they have two important means to verify the applicants' statements. One is the impression gained during the cash flow interview. The promptness of answers is a good indicator for sufficient business experience. Another means is to interview neighbors on the history of the applicant's business. Besides credit officers mentioned that many applicants are not aware of this condition and thus will automatically respond truthfully about their business activity.

The criterion is an excellent proof for the viability of the financed investment. Working capital loans have to be directed to already existing businesses. The loan must not be used to finance different activities. Furthermore, the business experience bases the cash flow statement on empirical values.

One can argue that the condition discriminates against the poorest population, who has typically no ongoing business activity. Nevertheless, the mission statement mentions the program's focus on micro-entrepreneurship. As argued in chapter 5.3.1., the implementation of the CC loan has lowered the program's entrance barrier for poorer populations considerably. Other MFIs that implement the Brazilian productive oriented microfinance program typically require an ongoing business activity of their clients.[29] The policy of the CEAPE program for instance requires six months of previous business activity as well.[30]

6.2. Quantitative analysis

Though not representing the focus of this study, the quantitative analysis has to be reviewed because of its predominant role in the risk assessment and credit decision process of Crediamigo. The quantitative predominance is illustrated by the high proportion of numerical data on the loan application form. Of the 64 gathered factors, 27 are part of the balance and cash flow statement. Of the remaining factors, 19 are numerical, 16 are variables with two or three manifestations and only two are of qualitative nature.[31] An identical quantitative analysis is applied in the applications process of SWC, PSWC, FI and IC products. Again an exception holds for CC loans. The analysis consists of a cash flow and a balance statement of every group member. The collected data is converted into financial indicators, which define the upper and lower boundaries of the potential loan size. In addition the data is evaluated by a credit scoring system, which gives important feedbacks to the credit officers.

This chapter presents the cash flow and the balance statement as the two elements of the quantitative analysis. Furthermore, the definition of loan size and the credit scoring system are evaluated.

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[29] Source: Brazilian Department of Labor, "Emprego e Renda, PNMPO", Website of the Brazilian Department of Labor, accessed on 24 Jan 2011.
[30] Source: CEAPE PE, „Microcrédito Produtivo Orientado, A quem se destina", Website of CEAPE Pernambuco, accessed on 24 Jan 2011.
[31] The two qualitative fields contain observations and a description of business activity.

6.2.1. Cash flow statement

The cash flow statement collects data on the monthly flow of funds of every single group member. Table 7 shows an exemplary cash flow statement of a joint-liability group with three clients.

Table 7: Exemplary cash flow statement

Item	Client 1	Client 2	Client 3
Operating Revenue	1’500.00	21’500.00	2’100.00
Sales Revenue	1’500.00	21’500.00	2’100.00
Cost of Goods Sold	1’000.00	17’000.00	1’300.00
Cost of Materials	1’000.00	17’000.00	1’300.00
Gross Profit	500.00	4’500.00	800.00
Total Operating Costs	45.00	1’700.00	50
Personnel costs	0.00	1’300.00	0.00
Transportation and freight costs	0.00	100.00	0.00
Water, Electricity, Telephone	45.00	100.00	50.00
Taxes and Duties	0.00	0.00	0.00
Other Expenses	0.00	200.00	0.00
Operating Profit	455.00	2’800.00	750.00
Non Operational Income	112.00	0.00	510.00
Other Income (Family, Pension)	112.00	0.00	510.00
Other Non Operational Expenses	150.00	150.00	200.00
Other Family Expenses	150.00	150.00	200.00
Installments of Other Loans	0.00	0.00	0.00
Capacity to Pay per Month	417.00	2’650.00	1’060.00
Real Capacity (70%)	291.00	1’855.00	742.00

Source: Application form of a SWC loan (compare Appendix 1).

The statement draws a picture of the applicant’s income and expenses. Importantly, not only the business cash flow is considered but also family income and expenses. From this data, several financial indicators are derived. The bottom line states the capacity to pay per month. Thereof, the real capacity to pay is calculated by deducting 30%. The bank considers this number as the upper boundary of the monthly installments.

6.2.2. Balance statement

The following table shows an exemplary balance statement:

Table 8: Exemplary balance statement

Item	Client 1	Client 2	Client 3
Total Assets	14’220.00	86’800.00	11’800.00
Current Assets	2’220.00	32’000.00	1’500.00
Bank Balance	0.00	0.00	0.00
Accounts Receivable	220	2’000.00	500.00
Stock	2000	30’000.00	1’000.00
Other	0.00	0.00	0.00
Productive Immovables	0.00	14’800	300.00
Real Estate	0.00	0.00	0.00
Machinery & Equipment	0.00	800	300.00
Real Estate and Utensils	0.00	2’000	0.00
Vehicles	0.00	12’000	0.00
Others	0.00	0.00	0.00
Family Assets	12’000.00	40’000.00	10’000.00
Real Estate	12’000.00	40’000.00	10’000.00
Total Liabilities	14’220.00	86’800.00	11’800.00
Current Liabilities	90.00	200.00	100.00
Crediamigo Financings	0.00	0.00	0.00
Other Financings	0.00	0.00	0.00
Supplier Credit	0.00	200.00	100
Client Credit	0.00	0.00	0.00
Other	0.00	0.00	0.00
Long Term Liabilities	0.00	0.00	0.00
Financings	0.00	0.00	0.00
Net Equity	14’130.00	86’600.00	11’700.00
Equity Capital	14’130.00	86’600.00	11’700.00

Source: Application form of a SWC loan (compare Appendix 1).

The balance statement lists the loan applicant’s business and family assets. Some clients believe that their personal assets are evaluated because they will serve as collaterals. Credit officers are aware of this misconception and usually clarify this question beforehand. Detailed information about the customer interviews is given in Chapter 6.3.1.

6.2.3. Financial indicators

The application form for applications of joint-liability groups and individuals contains nine financial indicators that are derived from the cash flow and balance statement. On the one hand, the indicators are part of the credit scoring; on the other hand they facilitate a quick grasp of the main risk factors for credit officers. Credit officers and branch managers referred frequently to the indicators Necessary Investment in Working Capital, Real Capacity to Pay and Debt/Equity Ratio. The nine financial indicators are subsequently listed according to their importance:

- $(Debt/Equity\ Ratio =$
  $Current\ and\ Short\ Term\ Liabilities/Total\ Assets) * 100\%$

Norell (2001) sees the Debt/Equity Ratio as key determinant for loan size. He postulates .50 as maximum allowable ratio for all applicants. In contrast to Crediamigo he only includes the net value of the business equity. Crediamigo includes the value of the total assets, which yields considerably lower ratios. In the presented balance statement of Table 8, the initial Debt/Equity Ratio of all applicants is below 1%. Upon the granted loan disbursement of the exemplary loan group, the ratios rise to 5.7% and 7.8% respectively, while the ratio of the most affluent member only rises to 1.3%. Moreover, the analysis shows that the demanded loans sizes have not been granted to the less wealthy clients 1 and 3. The amounts have been cut by approximately BRL 300.00 and BRL 200.00.[32]

- *Real Capacity to Pay*

Norell (2001) lists Real Capacity to Pay as the second most important quantitative factor. By measuring this factor the MFI ascertains that the client can cope with the size of the monthly installments. The Real Capacity to Pay of Crediamigo is basically the bottom line of the cash flow statement with a deduction of 30%.

[32] The numbers are taken from the exemplary loan application, (compare Appendix I).

- $NIWC = Stocks + Accounts\ Receivable - Supplier\ Credit$

NIWC stands for Necessary Investment in Working Capital. It represents the applicant's average working capital. According to branch managers it serves to define the upper boundary of loan size.

- $Working\ Capital\ Cycle = (NIWC/Cost\ of\ Goods\ Sold) * 30\ days$

The Working Capital Cycle is an indicator for the adequate repayment period. It measures the time it takes to sell and renew the stock. The accompanied credit officers didn't mention this indicator.

- $STR = (Stocks/Cost\ of\ Goods\ Sold) * 30\ days$

STR or Stock Turnover Ratio represents the average period that money is tied up in stocks. The ratio is expressed in days. Small ratios designate fast revolving stocks and thus allow shorter repayment periods. The indicator was not frequently mentioned by credit officers. Capacity to pay is the preferred factor to define repayment periods.

- $DSOR = (Accounts\ Receivable/Sales\ Revenue) * 30\ days$

DSOR stands for Days Sales Outstanding Ratio. It measures how long accounts receivable are outstanding and thus how well clients manage their accounts receivables. The accompanied credit officers didn't refer to this ratio.

- $Operating\ Cycle = STR + DSOR$

The sum of the stock turnover and debt collecting period shows the period of time it takes to turn stocks into sales revenue. This ratio was not mentioned by the accompanied credit officers.

- $Current\ Ratio = Current\ Assets\ /Current\ Liabilities$

The ratio indicates whether clients' liabilities endanger their working capital. Credit officers pointed out that their clients should never have to reduce their working capital to cover liabilities. They frequently admonished clients to buy their goods at the spot to avoid high interest rates. The presented balance statement of Table 8 shows ratios for the three applicants ranging from 15 to 160, which indicate almost no indebtedness.

$$Operating\ Margin = (Operating\ Profit/Operating\ Revenue) * 100\%$$

The operating margin represents the profitability of the business. Credit officers sometimes discussed the operating margin with clients to check their financial know-how.

6.2.4. Definition of loan size

The financial indicators are used to define the appropriate loan size. The requested loan size also underlies the verdict of the credit scoring system. According to this method loan size always has to lie between Real Capacity to Pay and Necessary Investment in Working Capital.

Loan size disparity

The maximum disparity between loans is measured by the ratio built between the largest and the smallest loan in size. The measure must not exceed 100%. This imposes a problem for joint-liability groups whose members' businesses grow at different speed. To help joint-liability groups comply with this criterion, individual loans can be granted to the member with the maximum loan size.

6.2.5. Credit scoring

The credit scoring system is an integral part of Crediamigo's credit risk assessment and decision process for new loans and for loan renewals. The credit scoring is based on an electronic application form filled out by credit officers once the application has passed the credit committee. Thereafter, the form is sent to the regional headquarters where administrational employees apply the credit scoring policy. The evaluation labels the applications with verdicts ranging from A to D. A stands for approval, while B, C and D stand for rejection and require either a modification of the loan size or of the repayment period. Importantly, the credit scoring system always states the risk factors which account for the rejection of a loan. This information is passed to the credit officers, who accordingly modify the application. The verdict of the credit scoring is strongly weighted and dominates completely the personal judgments of the credit officers. Overriding occurs rarely and has to be well justified by the branch manager.

Statistical credit scoring is defined by predicting the performance of future loans based on the characteristics of past loans. Schreiner (2002) claimed that statistical scoring would be the next jump in efficiency for the microfinance industry. He sees several advantages of a statistical scoring system in contrast to subjective scoring. Statistical scoring can quantify risk as a probability. In contrast subjective scoring can only judge risks approximately as average, below or above average. The results of statistical scoring are consistent, and do not underlie subjective biases such as mood and variations of loan officers. Moreover, statistical scoring can be easily communicated. Finally, it can take in account a wide range of risk factors and weigh them according to their importance. Schreiner (2002) argues that credit scoring cannot replace the subjective judgment of credit officers because two of the most important risk predictors are missing in microfinance. These factors are information on wage jobs and a comprehensive credit history. Almost all microfinance borrowers are self-employed and cannot provide a formal credit history.

Comparison to an exemplary credit scoring system

Schreiner (2004) presents a list of factors for an exemplary credit scoring policy. The proposed factors are briefly discussed and compared to the applied factors in the credit scoring policy of Crediamigo:

- Credit scoring information on past arrears

The proposed factors include the longest spell of arrears, the number of spells of arrears and a subjective grade, which is assigned by the credit officer, depending on the seriousness of the cause of arrears. The credit scoring policy of Crediamigo only includes the number of days in arrears of the previous loan.

- Experience as a borrower

Experience can be measured either in number of previous loans or in months since the first disbursement. The credit scoring policy of Crediamigo includes the number of previous loans.

- Borrower demographics

Marital status, gender, age, number of household members, education and presence of telephone in the house are proposed as predictors. Borrower demographics are among the most predictive risk factors but eventually can lead to discrimination (Schreiner 2004). Crediamigo's scoring policy does not include any factors of borrower demographics.

- Business characteristics

Schreiner (2004) suggests including type of business, years in current business, years of experience in current type of activity, presence of a telephone in the business and number of employees. Crediamigo's scoring policy only distinguished between the ambulant or stationary type of business.

- Business and household financial data

Crediamigo's credit scoring policy includes all of the 14 proposed factors which mainly center on the applicant's cash flow and assets. It even includes additional items to gather more detailed financial information. This underlines the preeminent importance of financial data in Crediamigo's risk assessment and credit decision process.

- Other borrower characteristics

The predictors home tenure, period of time at the current address, presence of salaried job are not collected by Crediamigo.

- Characteristics of loan

The proposed factors are type of loan, date of disbursement, requested loan size and presence, type- and value of guarantee. All of them are included in the credit scoring policy of Crediamigo.

The comparison reveals that Crediamigo abstracts almost completely from the categories of borrower demographics, business characteristics and other borrower characteristics. However, according to Schreiner (2004) those categories are very predictive. The abstraction can either be seen as a non-discrimination policy or as a cost-saving strategy. Collecting and verifying more information is time-consuming for credit officers and thus costly. The proposed factors are mostly inalterable for clients. This makes them susceptible for discrimination. The data, which is collected by Crediamigo, is predominantly of numerical nature, which underlines Crediamigo's strong focus on financial information.

6.3. Qualitative assessment

The qualitative assessment of solidarity groups, including the judgment of character of the applicants, is not explicitly rated in Crediamigo's risk assessment process. Nevertheless, it plays the important role of judging the veracity of the applicants' statements. Credit officers' heuristics of the qualitative assessment have mostly been developed individually and can only be revealed by observing and interviewing credit officers. Nevertheless, many features of the qualitative assessment are shared by Crediamigo's credit officers. This fact implies that an effective exchange of know-how inside the institution takes place. Important elements of the qualitative assessment such as the interviews with neighbors, surprise visits and the focus on group cohesion are shared by all credit officers. The following chapters are organized according to the different topics of qualitative assessment: Customer interviews, interviews with neighbors, treatment of arrears and overriding policy.

6.3.1. Customer interviews

The interview takes place at the home or the business place of one of the group members. The simultaneous presence of all group members is only required for new solidarity groups.[33] The interviews are structured by a given set of questions that concern the required information of the application form. Although the data collection is the primary function of the interview, credit officers gain a subjective impression of the solidarity group and its individual members. The impression serves to judge the accuracy and veracity of the given information and the cohesion of the group. The most important means to gain an accurate impression of the applicants is the surprise effect of early arrival, an appropriate relationship to clients and the focus on group cohesion.

Early arrival

Credit officers use a surprise effect to get a more accurate impression of their loan applicants. They purposely arrive about 30 minutes in advance of any arranged meeting. For loan renewals credit officers even use to turn up unannounced or try to arrange meetings on very short

[33] Home visits and interviews with applicants for new loans and loan renewals are similar for the products PSWC, SWC, IWC and FI. Again an exception holds for CC loans, where not all group members are interviewed.

notice. The surprise effect prevents clients from arranging their shop, stock or home for the credit officer's visit. The early arrivals seemed completely acceptable. The visited clients never seemed to feel offended.

Impressions on group cohesion

Ghatak and Guinnane (1999) see the group formation as the main challenge in the lending process of joint-liability groups. Lack of social ties and missing or weak solidarity between the peers are important risk factors. The subjective judgment of Crediamigo's credit officers therefore does not focus on the members' character but on the cohesion of the solidarity groups. Crediamigo's policy requires that groups are formed by colleagues, friends or neighbors, which implies a certain degree of intimacy, affection or acquaintance between the applicants.[34] Thanks to the credit officer's early appearance, the co-applicants usually arrive one after another. This allows to apply a sort of cross-examination technique. To assess the degree of acquaintance of the applicants the following questions are asked:

- Do you have your colleague's phone number?
- Do you know their business activity?
- For how long do you know each other?
- Does anyone have a marred credit record?

Possessing each other's cell phone number indicates that the members know each other to a certain degree. In addition they should know at least their peers' business activity. The questions three and four of the list above reveal whether the answers are consistent and whether the peers are informed about each other's debt status. If the inquiry of the credit record reveals that one member has concealed any debt to his peers, the credit officer normally confronts them with the information and asks them their opinion. If the debt is small it is most probable that the member is asked to acquit the debt. In case the peers distrust him, he will be excluded. The cross-examination-like interview is performed in a natural and spontaneous way, so that no suspicion arises about its purpose. In addition the questions serve to speed up the meeting. The phone number, for instance, is needed to call and inform the peers that the credit officer

[34] Source: BNB, "Crediamigo, Faça um Crediamigo", Website of BNB, accessed on 26 Jan 2011.

has already arrived and they should join in. Other information can already be filled into the application form.

Another means to gain an impression of the group cohesion is observing the behavior of the members and their conversation topics. Credit officers said that they usually observe the following indicators:

- How do they treat each other?
- What do they talk about?
- Are there any serious disputes?

According to credit officers the way people treat and talk to each other is an excellent indicator of their acquaintance. People who know each other, ask questions about their leisure time, such as: *"Have you been to church yesterday; how was the mass?"* Disputes between peers can sometimes be observed even during the costumer visits. A severe dispute between peers is an important risk factor, and can lead to the rejection of the group. Light disputes in contrast are completely neglected by credit officers.

Group constellations where not all peers know each other are possible. The member who brings in a friend is asked by the credit officer to pledge for him. Groups consisting of members who live distant from each other are not allowed. In this case the members are asked to form groups in their respective neighborhoods.

Veracity of quantitative information

The largest part and central element of the interview is the cash flow statement. Besides the primary information about the business figures it reveals whether the applicant is well acquainted with his own business. The credit officer also gains an impression on whether the applicant gives truthful information. The questions are asked in a very specific way so that no financial know-how is required on part of the client.

The following questions illustrate a transcribed interview of a credit officer with a woman who sells clothes from door to door. The interview of the cash flow statement is largely standardized. Credit officers merely adapt the questions to the type of business.

- What is your business activity?

- Do you sell from door to door?
- What products do you sell?
- How much do you sell per month?
- How much of it is profit, in other words: how much can you retain for yourself?
- How much do you spend on acquisition costs per month?
- Do you pay the goods by installments?
- Do you work together with someone else?
- How much do you spend on bus rides to the factory?
- How much do you pay for electricity?
- Do you have any other source of income?
- Do you store money at home, for example under your mattress?
- Do you have debtors?
- Do you owe money?
- What is the value of your stock?
- Do you have a credit card?
- How much credit do you need?

Applicants with more than six months of business activity are expected to have no problems answering the questions. Credit officers regard the two following questions as the most important indicators that show whether an applicant knows his business:

- Does the applicant know his monthly income?
- What is the acquisition, respectively the sales price of every product?

Trouble to disclose accurate information can indicate that the client has no prior or too short business experience. It can also indicate that he lends his name for someone else. Sometimes applicants disclose implausible low values for their belongings. This can occur because clients think that the information will be passed on to the local authorities. They are afraid of losing their social grants or having to pay overdue taxes. Usually, after a short explanation about the privacy of the gathered data, the credit officer can proceed with the interview as normal. This is particularly common in interviews with poor clients. According to credit officers it does not shed negative light on the applicant's character.

Customer relationship

The work style of credit officers and their relationship to customers influences the course of the interviews considerably. The degree of intimacy in the customer relationship seems to be an important factor for successful interviews. Although the intimacy depends on both parties, the credit officer, by virtue of his position, decides on the closeness of the relationship. Credit officers' attitudes towards their clients can be gradually ranged from distanced, formal, professional and affectionate to jovial. A distanced relationship is characterized by a minimum of personal interaction and absence of personal topics of conversation. A jovial relationship means that credit officers treat customer like friends and do not distinguish between personal and professional conversations. Long time customer relationships are usually characterized by a higher degree of intimacy.

The benefit of a more personal relationship is to retrieve additional and more genuine information on the clients. Clients feel free to tell facts about their private life which improves the understanding of their problems and necessities. The personal relationship also motivates the client further to repay in time. On the other hand, a distanced relationship implies psychological authority, which is supposed to have a positive disciplining effect on timely reimbursement. However, one accompanied credit officer who kept the relationship to clients distanced and formal complained about high arrears and seemed to have problems to recover outstanding payments.

The assessor's background can facilitate the relationships with clients. Assessors descending from modest families and without a university degree usually share a common background with their clients. Agier and Assunção (2009) hypothesize that credit officers who live in favelas have on average better loan portfolio qualities thanks to their social skills and knowledge about favelas businesses. However, their supposition is not supported statistically. Credit officers confirmed that a more personal relationship has various advantages. The intimacy frees the flow of information and motivates the client to repay on time. Clients who have a more distanced relationship to their credit officers refrain less from delaying payments.

The majority of the accompanied credit officers had affectionate relations to their clients. Some credit officers managed to switch from a very professional attitude during the explanation of the terms and conditions and the cash flow interview to a more personal approach upon completion of the interview. In conclusion, this seemed the most reasonable approach, which both signals care and professionalism.

6.3.2. Entorno: Interviews with neighbors

In Crediamigo's terminology the word *entorno* describes a means to check the veracity of the applicants' statements by interviewing neighbors. The Portuguese word *entorno* means 'surrounding area'. The questions center on the most important pieces of information, given by the applicant, such as business activity, ownership of the business, residence and relationships between the peers. If the answers are inconsistent with the statements of the client and reveal unfavorable facts, the credit officer usually informs the group members covertly about the issue. He asks them their opinion and wants to see whether they still trust their colleague. In serious cases the credit officer can even plead for the exclusion of the fallible member.

Entornos require tact, respect and genuineness on part of the credit officer. The interviewed people as well as bystanders have to gain the impression that this is a spontaneous chatter and not an interrogation. Questions have to appear to be asked out of genuine interest and not to verify declarations. Credit officers said that neighbors are usually talkative and have time for a chat. The interview with neighbors is always carried out hidden from the applicant. If this is not possible, the *entorno* is usually skipped or postponed.

Credit officers spend around 5-10 minutes per group for the interviews. It can be carried out before or after meeting with the group. Often it goes hand in hand with the search of the applicant's address. Neighbors can be asked about the whereabouts of the applicant's business place. This shows whether the business is well known in the neighborhood. If the assessor once has involved somebody about the direction he can ask further questions about the applicant.

6.3.3. Overriding policy

The verdict of the credit scoring policy is predominant in Crediamigo's credit decision policy. The personal judgments of credit officers and branch managers are subordinated to the rigid rule of the scoring policy. The overriding of the formal conditions and quantitative limits is only allowed in specific cases. The reasons to break the rules have to be communicated in the form field *observations* of the application form.

One of the few criteria that can be overridden is the condition of a clean credit record. For that, the debt has to be less than BRL 200.00 and the character of the borrower is taken into consideration. According to branch managers this measure is sometimes taken to save solidarity groups from breaking up. According to branch managers BRL 200.00 has proved to be a sound limit for the flexibilization in urban regions.

Another overriding policy can apply if a solidarity group is struck by the default of one member. Then the bank can support the remaining members by granting them a discount on the outstanding loan. This is called a revitalization of the credit.

Form field observations

The last field of the application form is the only place for qualitative remarks. However the use of the field is restricted. In applications of new loans the new solidarity group has to be briefly described. The description contains historic facts, presents the relations between the members of the joint-liability group and mentions where they live and since when they know each other. Eventual family ties between the group members and the relation to other Crediamigo clients of the local community have to be mentioned. For loan renewals observations are optional and only made if the proposition has to be supported with qualitative facts. This is necessary when the requested loan size is likely to be rejected by the credit scoring system. The following example was related by a branch manager:

The peers of a carpenter's solidarity group had suddenly disappeared and left him with a considerable debt. Nevertheless, he didn't default and decided to repay the entire debt. He had already managed to pay eight installments. When only two installments were still due, he was unable to pay without divesting a considerable part of his working capital. To help him recover, the branch manager and the involved credit officer wanted to grant him an additional credit to expand the repayment period. His long customer relationship and his previous commitment to repay were underlined in the application form. The regional headquarters however returned the application and required a reduction of the loan size due to his outstanding debt. Consequently, the loan size was slightly reduced in agreement with the debtor and the application was again well justified. But yet again the credit scoring policy rejected the application and required to reduce the loan size further. Only after reducing the loan size a third time the application finally passed.

6.3.4. Treatment of arrears

Arrears are defined as late loans, in contrast to delinquent loans that are written off by MFIs. Causes of arrears are manifold. Some examples according to Norell (2001) are: Loans are too large and go to personal use, clients suffer unpredictable crises, they have to recognize responsibility for crises of family members, loans were based upon favoritism of credit officers and, clients want to test the reaction of the MFI. The fast response of MFIs in case of arrears is crucial. Slackness sends out the signal that the MFI does not care about the exact date of payment, which consequently would increase arrears. Norell (2001) also points out that a credit officer who gets in contact with the client on the first day of arrears will be perceived like someone who cares and tries to help. In contrast, a credit officer who arrives only weeks later, appears like a policeman, who merely comes to enforce the contract. This consequently affects the willingness of the client to cooperate. To react quickly an information system that informs credit officers about arrears has to be in place (Norell 2001).

In the following paragraph it is argued that Crediamigo observes these basic rules and has a largely standardized monitoring procedure for loans in arrears. Credit officers get daily updates on arrears in their loan portfolio. They are admonished to treat arrears with seriousness and communicate this notion to their clients. If a loan group falls into arrears the credit officer calls the group coordinator on the very first day to ask for the reason of the outstanding payment. The bank regards the cause of the arrears as an important predictive characteristic. The cause is graded according to its severity. Arrears due to sickness or accidents of the group coordinator are regarded not severe. Postponing the payment out of convenience on the other hand is seen as a severe cause. The severity consequently affects the loan size increase and can eventually lead to a loan size reduction. A short spell of arrears with a non-serious cause has only a small influence on the next loan size. Although a maximum increase will not be granted. In addition the credit officer demands from the group coordinator to promise the execution of the payment in the next few days. It is important that the phone call is held formally to underline the seriousness of the matter. If the payment is still outstanding on the declared day, the assessor makes a follow-up call and tries to obtain another commitment. If the credit officer is in his vicinity he can make an unannounced home visit. After a spell of 15 days, another phone call is made by the branch manager. The change of the contact person results in a surprise effect. Moreover clients are more impressed by the authority of the branch manager. Spells of more than 30 days are considered unhealthy because the probability of continuing nonpayment is high. Therefore the efforts of credit officers are focused on the first 30 days of arrears.

7. Incentive scheme for credit officers

Monetary incentives are recognized for their impact on risk management, outreach and overall efficiency of MFIs (Holtmann 2001). Nevertheless, the topic has to be critically reflected within the context of commercialization and the institutional approach of MFIs. Commercial MFIs focus on the width of outreach, whereas non commercial institutions concentrate on the depth of outreach, that is reaching out to even poorer populations (Moya 2009). Monetary incentive schemes, especially if not designed accurately, can contort the social purpose of microfinance. They can crowd out employees' intrinsic motivation (Frey 1994) and lead to mission drift and discrimination (Labie, Méon and Szafarz 2009). The excessive use of monetary incentives can undermine employees' loyalty and responsibility towards the institution and its clients and, as argued in chapter 7.2, even lead to fraudulent practices of employees.

On the other hand, a well designed incentive scheme, that follows the basic guidelines, as presented in chapter 7.1., is a powerful instrument to motivate employees and align their goals to those of the institution. This is particularly important because credit officers have a big impact on MFIs' success by creating and safeguarding the quality of the loan portfolio. They are also the point of contact with clients and responsible for the outreach and the perception of the MFI. Furthermore their salary accounts for a significant share of administrative expenses. However, MFIs suffer from considerable asymmetric information concerning credit officers' work effort, because a large part of their work is performed outside the branch. It is thus reasonable to measure the most important indicators of credit officers' efficiency such as issued loans and portfolio quality and reward good performance with variable salary components (Holtmann 2001).

The following chapters outline the most important guidelines, describe pitfalls of incentive schemes and finally present and compare Crediamigo's incentive program with an illustrative scheme proposed by Holtmann (2001).

7.1. Guidelines for successful incentive schemes

Holtmann (2001, p. 6) postulates that the fixed salary component should always cover the basic living expenses of credit officers. In any case it has to outweigh the bonus. The relative proportion of the bonus should always lie between 30% and 50% of total remuneration. Holtmann (2001, p. 7) further enlists four basic requirements to build a successful incentive program. First the program needs to incorporate the institution's basic goals and convert them into quantitative targets such as:

- Number and volume of loans issued
- Number and volume of outstanding loans
- Number of loans to first-time costumers
- Quality of the loan officer's portfolio

Most incentive schemes comprise some or all of these variables. The weight of the individual variables can be adjusted to the goals of the MFI. Institutions have to be aware that the parameters outreach, credit volume and portfolio quality form a trade-off, thus cannot be maximized at the same time. Second, credit officers should perceive the incentives as fair. They have to perceive the rewards as adequate and the goals as achievable. Fairness has to be an overall objective such that changes in the bonus formula are not perceived as a breach of trust or a lack of appreciation. Third, incentive programs should be transparent and easy to understand so that credit officers can adjust their actions to accomplish their goals. Fourth, incentive schemes have to be regularly reviewed and adapted to changes of the business environment and the development of the institution (Holtmann 2001).

7.2. Experiences of MFIs with incentive schemes

One can claim that certain MFIs have experienced the negative consequences of wrongly-designed incentive systems, long before the financial crisis of 2008, which was at least partly caused by misleading incentive schemes. Although the individual mistakes and impacts of the two industries differ, the comparison underlines the enormous influence of incentive schemes on the health of financial institutions. On the other hand, MFIs around the world have provided positive evidence of the appropriate use of incentive schemes. The following two cases illustrate important pitfalls of incentive systems that have to be avoided. While the first case focuses completely on the problems, the second case also includes the institution's successful recovery strategy and an exemplary redesign of the incentive scheme.

The first example concerns Crediamigo in its initial stage itself. Motivated by a premature expansion strategy in 1998, a powerful incentive scheme for credit officers was implemented. Following the expansion strategy, merely quantity based performance targets were rewarded. Portfolio quality was completely exempted of the bonus scheme. Therefore, credit officers were incentivized to concentrate entirely on loan disbursal, disregarding the quality of borrowers. The incentive scheme was successful in expanding the outreach considerably, although it eventually proved not to be sustainable. As a side-effect, the portfolio quality deteriorated considerably. Finally, Accion had to step in and recover the loan portfolio. The losses totaled 2 Mio USD. As a consequence, branches started to be evaluated individually and a bonus for portfolio quality was introduced. After six months the program was working successfully again (Fiori and Young 2005).

The second example draws on the transformation of BancoSol from an NPO into a commercial institution. Because of the negative experiences in the decade of the 1990s, the MFI has today a very skeptical view of staff incentives. Bazoberry (2001), relates them in the expressively entitled case study *"We Aren't Selling Vacuum Cleaners"*. BancoSol implemented its first incentive scheme after various staff incentive schemes worldwide were studied. They managers planned to strongly incentivize employees and thus coupled low base salaries with high variable payments. Those were disbursed monthly and rewarded upon the individual performance of credit officer. The following parameters were rewarded:

- Targeted number of clients
- Maximum percentage of loans in arrears
- Average portfolio per loan officer

The preliminary effect was promising. All indicators of credit officers' productivity improved after the implementation of the incentive program. However, the turnover rate of credit officers started to rise unexpectedly after three years. Part of the credit officers had to be discharged because of cases of corruption and violation of the internal rules, particularly concerning the lending methodology. The bank officials discovered that the aggressive incentive policy had triggered massive delinquent activities: Credit officers formed ROSCAS[35] to cover arrears personally, with the purpose to maintain portfolio quality. Further, ghost loans were created to accomplish high performance standards. Even arbitrary amounts were deducted from the loans creating a fund to cover bad loans. After two years tens of thousands of low-income families were indebted. The high incentives had managed to deteriorate credit officer's loyalty and their responsibility towards the institution and its clients. Credit officers had adopted a short term perspective. The disregarded ability to repay of clients was compensated by breaking the institution's lending methodology.

In consequence BancoSol changed its incentive program completely. It switched to annual bonuses granted for branch performance. Because local characteristics influenced this measure considerably, the bonus was changed again. Finally it was rewarded upon the performance of the whole institution. In conclusion, Bazoberry (2001) suggests seeing financial incentives in a larger picture that includes commercial objectives as well as the social mission of the MFI. For commercial MFIs as well, non-financial rewards can be just as important as monetary incentives.

7.3. An illustrative incentive scheme

Holtmann (2001) illustrates an exemplary bonus scheme for a monthly disbursed bonus. It is presented at this point be compared to Crediamigo's incentive program in the next chapter. The proposed bonus scheme comprises the three parameters Lending (L), Portfolio (P) and Arrears (A). The parameter Lending counts the number of loans disbursed to new and repeat clients. Portfolio represents the number of loans and balance outstanding. Arrears measures the number of loans and portfolio at risk. The parameters are added up in the formula:

$$\text{Bonus} = \text{L} + \text{P} + \text{A}$$

The sum represents the amount the MFI is willing to pay as a bonus. The following explanations are reproduced from Holtmann (2001).

[35] ROSCA: Abbreviation for Rotating Savings and Credit Association.

Number of Loans Disbursed (L)

This parameter measures to which extent credit officers meet the targets for loans disbursed to new and repeat clients. The formula explicitly distinguishes between new and repeat clients. This allows that the targets are weighted individually. Because the actual performance of the credit officer is always compared to preliminary set targets of the institution it is possible that credit officers surpass those targets. Thus the bonus has no upper limit. However the target should be relatively high such that surpassing is, if not impossible, at least unlikely. Number of loans disbursed (L) is calculated by the following formula:

$$L = [(n/g) * w_1 + (o/h) * w_2] * w_8$$

Whereas:

n = Number of loans issued to new clients

g = The loan officer's target for loans issued to new clients

o = The number of loans issued to repeat clients

h = The loan officer's target for loans issued to repeat clients

w_1, w_2 = The weight given to the number of loans issued to new and repeat clients, respectively. w_1 plus w_2 must equal 1.

w_8 = The bonus level factor for L

The first term compares the numbers of new issued loans to a target, set by the institution. The second term measures to which extent the target of loans to repeat clients is attained. Because targets can be surpassed, the bonus has no upper limit. Assuming the monthly bonus for meeting the targets is BRL 500.00, w_9 and w_{10} multiplied by w_8 have to add up to the value of BRL 500.00.

Portfolio Outstanding (P)

Portfolio Outstanding controls the targets for the volume and number of loans outstanding. The formula compares the actual performance of a credit officer with the targets by building two ratios. The ratios are weighted according to the importance of each target. Parameter (P) is calculated by the following formula:

$$P = [(c/a) * w_3 + (d/b) * w_4] * w_9$$

Whereas:

c = Loan officer's total outstanding portfolio

a = Loan officer's target for outstanding portfolio

d = The actual number of outstanding loans

b = The loan officer's target for the number of outstanding loans

w_3, w_4 = The weights represent the importance given to the volume and number of loans outstanding respectively, w_3 plus w_4 must equal 1.

w_9 = The bonus level factor for P

The first term compares the total outstanding portfolio of a credit officer to the targeted outstanding portfolio. The second term compares the number of outstanding loans to the target number of the institution. Similar to w_8, w_9 represents the importance that the institution attributes to portfolio outstanding.

Arrears (A)

The parameter Arrears measures the volume and number of a credit officer's loans in arrears and thus portfolio quality.

$$\mathrm{A} = \frac{\{w_7 - [(\#la/d) * w_5 + (\$la/c) * w_6] * 100\}}{(w_7 * w_{10})}$$

Whereas:

$\#la$ = Total number of loans in arrears in a credit officer's loan portfolio

d = Total number of outstanding loans of a credit officer's loan portfolio

$\$la$ = Total balance of loans in arrears

c = Loan officer's total outstanding portfolio

w_6, w_5 = The weight given to the number and volume of loans in arrears. The sum must equal 1.

w_{10} = The bonus level factor for the parameter loans in arrears

The first term measures to which extent the goal in terms of number of non-delinquent loans is attained. The second term calculates to which extent the goals in terms of non-delinquent balance are attained.

Conclusion

The presented incentive scheme contains the most important target functions of MFIs. It is easy to understand and to calculate. The scheme can be adapted to different environments and changes of MFIs' values. Weights can be attributed according an institution's values and objectives. Institutions can include all or several of the three above presented parameters. The simplicity of the model accounts also for its limitation. Only a few factors that influence the bonus parameters are taken in account. The incentive scheme leaves credit officers with several tradeoffs. The bonuses for the parameter Arrears and Number of Loans Disbursed, respectively Portfolio Outstanding cannot be maximized at the same time (Holtmann 2001).

7.4. Crediamigo incentive program for credit officers

Crediamigo's appliance of employee incentives dates back to the origins of the program and is consistent with its initial set guidelines and its commercial approach.[36] The incentives do not seem to have crowded out credit officers' intrinsic motivation. Their most important source of motivation still comes from the social purpose of their work, customer contacts, as well from the intrinsic satisfaction of their own performance. Credit officers were proud to manage large credit portfolios while keeping arrears low.

The fixed component in Crediamigo's remuneration lies in the range of two minimum salaries and builds the backbone of credit officer's remuneration. Its predominance as postulated by Holtmann (2001) is assured. Credit officers however can almost double their monthly income by virtue of good performance and in particular by virtue of long terms of employment. The incentive scheme for credit officers consists of two variable components. One incentive is awarded for portfolio quality and another stepped incentive is granted for loans disbursed.

7.4.1. Bonus for Portfolio Quality

The bonus for portfolio quality is based upon the Portfolio at Risk, loans 30 to 90 days late. The portfolio at risk is calculated in the following way:

$$\text{Portfolio at Risk} = \frac{\$la}{c} * 100\%$$

Whereas:

$\$la$ = Loan officer's total balance of loans in arrears (30 to 90 days late)

c = Loan officer's total outstanding portfolio

[36] Compare chapter 5: The guidelines read that staff salaries would be based on results.

The target for Portfolio at Risk at the time of the research was less than 2%. A bonus was paid to credit officers with a ratio of less than 3%. In any case the indicator had to be < 4%. The bonus incorporates the very important goal of portfolio quality.

Holtmann (2001) proposes to include also the number of loans in arrears. Crediamigo's formula, in contrast, only includes the balance of loans in arrears. Thus the risk coming with high loan sizes is directly passed on to the credit officers without correcting for the number of loans in arrears. On the other hand, the omission of the number reduces the risk that credit officers have to bear with large joint-liability groups, such as in the case of CC loans.

Two credit officers perceived the bonus as unfair because it does not take into consideration the type of loan. Loan officers sometimes work in areas with very specific customer profiles, for example mostly poor population with CC loans. The credit officers argued that it is harder to maintain good portfolio quality working with this loan product.

7.4.2. Stepped Bonus for New Clients

The second variable component of the bonus scheme rewards the achievement of a certain number of new loans issued. The bonus formula is derived by the number of new loans disbursed within a period of three months. The mathematical expression thereof is:

$$\text{Permanent Salary Increase 1-2} = \begin{cases} \text{BRL 150.00} & \text{if} \quad (\#ldnc \geq 126) \\ - & \text{if} \quad (\#ldnc < 126) \end{cases}$$

$$\text{Permanent Salary Increase 3-11} = \begin{cases} \text{BRL 100.00} & \text{if} \quad (\#ldnc \geq 126) \\ - & \text{if} \quad (\#ldnc < 126) \end{cases}$$

Whereas:

#ldnc: number of loans disbursed to new clients in a period of three months

The bonus is a stepped incentive with eleven levels. A newly recruited credit officer starts on level zero. Every three months he has the chance to step up one level if he manages to disburse at least 126 loans in this period. With the two first steps his monthly wage increases by BRL 150.00. The steps 3 to 11 carry a salary increase of BRL 100.00. The larger increases of step one and two compensates for the inferior experience and the higher difficulties that new employees have to reach the target. The salary increases are permanent, which implies that after 33 months at the earliest an additional salary of BRL 1200.00 per month can be gained regularly. This incentivizes credit officers to enlarge their customer base. Implicitly it also rewards strongly long time of adherence to Crediamigo. One can assume that new credit officers start with a small client portfolio; otherwise the required 126 new clients per month would overcharge their capabilities. The target of 126 new clients every three months breaks down into 42 new clients per month or approximately to two clients per day. Interviewed credit officers said that the number is set low enough such that no trade-off between portfolio quality and new loans issued occurs. If the share of loan renewals is below 100%, credit officers can compensate with new clients. However, loan renewals have to account for at least 80% of total loan disbursements. Otherwise the salary increase is not granted.

The main advantage of the stepped bonus scheme is to avoid the described trade-off between portfolio quality and loans disbursed. Rewarding the outperformance of the benchmark, as the scheme of Holtmann (2001) allows, leaves credit officer with a trade-off decision. On the other hand, Crediamigo gives away potential incentive to reach even more clients. The other element of the bonus, the incentive of adherence to Crediamigo is essential because the institution wants to avoid a high turnover rate of employees. Turnover is highly undesirable because important knowledge of the lending methodology and about clients and the area gets lost. The bank requires well educated and motivated employees, which are strongly wooed by other industries.

7.4.3. Summarizing remarks on the Crediamigo incentive program

Only two of the three elements of an illustrative incentive scheme that are proposed by Holtmann (2001) are included. Crediamigo’s first bonus motivates credit officers to create and maintain good portfolio quality. The second bonus rewards client acquisition and implicitly also rewards long time of adherence to Crediamigo. The formulas follow roughly the recommendations of Holtmann (2001) but are less complex. The bonus program does not reward portfolio outstanding. Portfolios of Crediamigo credit officers vary considerably. New employees are supposed to grow their portfolio continuously. Besides, branch managers control portfolios to a large degree and can move solidarity groups from one employee to another. Thus the two arguments obviate an incentive for portfolio outstanding.

8. Conclusion

The thesis studied the actions and decisions of credit officer within the broader context of Crediamigo's credit risk assessment, credit decisions and loan monitoring processes. An introductory section presented a theoretical explanation of the issues that underlie microfinance risk assessment and credit decisions. The challenges can be described as arising from different types of information asymmetries between borrower and lender. Furthermore, microfinance client's can't provide some of the most important signals, that are material collaterals and formally approved income statements. This requires alternative lending strategies from MFIs such as group lending, extensive screening and repayment incentives. In section three the chosen research methodologies were discussed and motivated. It was concluded that the object of study requires a flexible research approach. The methodologies of interviews and observations and the qualitative description of the results proved most appropriate. The difficulty to capture the idiosyncratic knowledge of credit officers with semi-structured questionnaires was underlined. Observations proved to be essential for conceiving good interview questions. The increasing knowledge about the institutional and environmental context of credit officer's operations improved the quality of the interviews considerably.

In a further section the characteristics of the Brazilian context for MFIs were brought out. A well developed financial market offers expensive substitutes to microfinance products. However, Brazil has a supply gap for financial services of high quality directed to poor entrepreneurs. A powerful regulatory framework provides lenders with a credit information system. At the same time this also leads to the exclusion of large fractions of the population with marred credit records. The credit record is a powerful tool for credit decisions and enforcement of the contract. Because of the credit information system, the credit processes of Crediamigo cannot be compared to MFIs in any country. The abundant supply with expensive credit, almost exclusively directed to consumption and accessible to low-income populations, carries the threat of over-indebting Crediamigo clients. This frequently creates dilemmas in loan renewals. Therefore the condition of a clean credit record can, depending on the borrower's character, be overridden. In addition, visits for loan renewals are scheduled in advance to ask clients to acquit all eventual outstanding payments.

It was outlined that the program implements the national program of productive oriented microcredit PNMPO. A prior business activity of six months for the majority of loan products is required. This, besides being a powerful risk assessment criterion, discriminates against unemployed people living in misery. Nevertheless, the effect is cushioned and the condition is justified by the conditional cash transfer program Bolsa Família, which is supposed to cover the existential needs of these populations. With the CC product Crediamigo even includes low-income populations, which it cannot serve profitably. However the MFI considers very low-income clients in a life time value perspective and implicitly predicts growth and profitability of this segment in a few years.

Subsequently the main features of Crediamigo's risk assessment and credit decision were pointed out. Formal conditions are attributed a high importance. The hierarchically structured credit decision process forms a rigid framework for credit officers and leaves them with few degrees of freedom. The credit officers' subjective judgments do not directly influence credit decision. However they influence some important parameters and serve to verify the accuracy and veracity of clients' statements. For instance the cause of previous arrears is taken in account and seen as an important indicator of the client's character. As such it defines further loan increases. Good personal relations were described as an important base of trust between customers and a catalyst for an effective risk assessment. Very distanced relations seemed to affect the commitment to repay negatively. As an integral component of the program's risk management, the monetary incentive scheme for credit officers was analyzed. The program grants bonuses for good portfolio quality and outreach. The target for outreach is based upon new clients. It is achievable without neglecting portfolio quality and the outperformance of the target is not rewarded. This assures that no trade-off between loan portfolio and loans disbursed occurs.

The effort of this study should be continued by assessing other microfinance service providers with the same research approach. The larger sample of results will allow to detect further heuristics and to compare the findings between MFIs. For an in-depth study of the subjective judgments of credit officers, MFIs in countries without a credit information system however appear more suitable. In the absence of these decision criteria MFIs and particularly credit officers have to draw completely upon their subjective judgments.

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List of Interview Partners

Name	**Function**	**Branch**
Santos, Rosángela	HR Coordinator	Recife Boa Vista
De Souza, Alessandra Fabiana	Branch Manager	Recife Centro
Matte, Marcio Matteus	Branch Manager	Paulista
Ana Carolina	Credit Officer	Recife Centro
Romeu	Credit Officer	Recife Centro
Edjane	Credit Officer	Recife Centro
Josy	Credit Officer	Recife Centro
Ramos	Credit Officer	Recife Centro
Madeline	Credit Officer	Paulista
Elisabeth Cristina	Credit Officer	Paulista
Michelene	Credit Officer	Paulista
António	Credit Officer	Paulista
Amanda	Credit Officer	Paulista
Arthur	Credit Officer	Paulista

Appendix I: Electronic application form, page 1-3

Banco do Nordeste

GIRO POPULAR SOLIDARIO

Proposta: 050.2010.00374 Comitê: 050.2010.00153

Assessor: VANDA KARLA RODRIGUES DA SILVA

Risco do grupo da proposta : A - Aprovar

CREDIAMIGO

PROGRAMA DE MICROCRÉDITO DO BANCO DO NORDESTE

Coordenador do Grupo	Município - Bairro
CLIENTE ESCOLHIDA PARA COORDENAÇÃO - XXXXXXXXXX	CUSTODIA

I - SÍNTESE DA PROPOSTA

Clientes	CLIENTE 1	CLIENTE	CLIENTE 3
Atividade	ARTIGOS DE PASSAMANARIA, FITAS, FILOS,RENDAS E BORDADOS	PRESTACAO DE SERVICOS	ROUPAS DE CAMA E MESA
Tipo de Negócio	FIXO	AMBULANTE	FIXO
Dados do último empréstimo			
Valor do empréstimo	-	-	-
Nº de empréstimos	0	0	0
Vencimento original	-	-	-
Dias de atraso	0	0	0
Dias antecipados	0	0	0
Dados do novo empréstimo			
Empréstimo solicitado	1.000,00	1.000,00	1.000,00
Empréstimo aprovado	726,00	1.000,00	830,00
% de aumento	-	-	-
Prestação aprovada	151,58	208,79	173,30

Nota de caráter do Grupo	% de disparidade do grupo
70%	37,74

Condições de aprovação do Grupo

Valor	Prazo	Prestação	Periodicidade
2.556,00	150	626,37	MENSAL

II - INDICADORES ECONÔMICO-FINANCEIROS

Nº dias - Ciclo Capital Giro / Financeiro	64 dias	56 dias	32 dias
Necessidade Investimento Capital de Giro	2130.00	31800.00	1400.00
Ciclo Operacional (CO)	64 dias	56 dias	30 dias
PMRE	60 dias	53 dias	23 dias
PMRV	4 dias	3 dias	7 dias
Liquidez Corrente	24.67	160.00	15.00
Margem do Lucro Operacional	30.33%	13.02%	35.71%
Endividamento Total	0.63%	0.23%	0.85%

Ciclo do Capital de Giro (CGC) = (NICG / Custo Mercadorias Vendidas) * 30 dias
Necessidade Investimento Capital de Giro(NICG) = Estoque + Contas a Receber - Fornecedores
Ciclo Operacional (CO) = PRME + PRMV
Prazo Médio Renovação dos estoques (PRME) = (Estoque / Custo das Mercadorias Vendidas)* 30 dias
Prazo Médio Recebimento Vendas (PRMV) = (Duplicatas a receber / Vendas) * 30 dias
Liquidez Corrente = Ativo Circulante / Passivo Circulante
Margem do Lucro Operacional = Lucro Operacional * 100/ Receitas Operacionais
Endividamento Total = ((Passivo Circulante + Exigível à Longo Prazo) * 100)/ Ativo Total

III - PESQUISA CADASTRAL

Source: Document provided by R. Santos, August 2010.

Data da Pesquisa	25/03/2010	25/03/2010	25/03/2010
Registro SPC	Não	Não	Não
Registro SERASA	Não	Não	Não
Registro BN/SICAD	Não	Não	Não

IV - OUTROS PRODUTOS

Produto	Nome do Cliente	Valor Contratado	Situação da Operação	Valor do Saldo Devedor	Valor em Atraso

V - SAZONALIDADE

Janeiro	B	B	B
Fevereiro	B	B	B
Março	R	R	R
Abril	R	R	R
Maio	R	R	R
Junho	B	B	B
Julho	B	B	B
Agosto	R	R	R
Setembro	R	R	R
Outubro	R	R	R
Novembro	B	B	B
Dezembro	B	B	B

B - Bom R - Regular M - Má

VI - FLUXO DE CAIXA

RECEITAS OPERACIONAIS	1.500,00	21.500,00	2.100,00
RECEBIMENTO DE VENDAS	1.500,00	21.500,00	2.100,00
CUSTO DAS MERCADORIAS VENDIDAS	1.000,00	17.000,00	1.300,00
PAGAMENTO COM MATERIAIS	1.000,00	17.000,00	1.300,00
LUCRO BRUTO	500,00	4.500,00	800,00
TOTAL DOS CUSTOS OPERACIONAIS	45,00	1.700,00	50,00
PAGAMENTO DE PESSOAL	0,00	1.300,00	0,00
PAGAMENTO DE TRANSPORTE, FRETE	0,00	100,00	0,00
ÁGUA, LUZ, TELEFONE	45,00	100,00	50,00
TRIBUTOS E IMPOSTOS	0,00	0,00	0,00
OUTROS CUSTOS	0,00	200,00	0,00
LUCRO OPERACIONAL	455,00	2.800,00	750,00
OUTRAS RECEITAS NÃO OPERACIONA	112,00	0,00	510,00
OUTRAS RECEITAS (FAMÍLIA,APOSE	112,00	0,00	510,00
OUTRAS DESPESAS NÃO OPERACIONA	150,00	150,00	200,00
OUTRAS DESPESAS DA FAMÍLIA (ED	150,00	150,00	200,00
PAGAMENTO DE OUTROS CRÉDITOS	0,00	0,00	0,00
CAPACIDADE DE PAGAMENTO MENSAL	417,00	2.650,00	1.060,00
CAPACIDADE REAL	291,90	1.855,00	742,00

VII - AVALIAÇÃO PATRIMONIAL

ATIVO TOTAL	14.220,00	86.800,00	11.800,00
ATIVO CIRCULANTE	2.220,00	32.000,00	1.500,00
CAIXA, BANCOS, POUPANTA	0,00	0,00	0,00

Source: Document provided by R. Santos, August 2010.

CONTAS A RECEBER DE TERCEIROS	220,00	2.000,00	500,00
ESTOQUES	2.000,00	30.000,00	1.000,00
OUTROS	0,00	0,00	0,00
IMOBILIZADO (PRODUTIVO)	0,00	14.800,00	300,00
IM=VEIS	0,00	0,00	0,00
MßQUINAS E EQUIPAMENTOS	0,00	800,00	300,00
M=VEIS E UTENSFLIOS	0,00	2.000,00	0,00
VEFCULOS	0,00	12.000,00	0,00
OUTROS	0,00	0,00	0,00
ATIVOS DA FAMILIA	12.000,00	40.000,00	10.000,00
ATIVOS FAMILIARES(TERRENOS,CAS	12.000,00	40.000,00	10.000,00
PASSIVO TOTAL	14.220,00	86.800,00	11.800,00
PASSIVO CIRCULANTE	90,00	200,00	100,00
FINANCIAMENTOS CREDIAMIGO	0,00	0,00	0,00
OUTROS FINANCIAMENTOS	0,00	0,00	0,00
FORNECEDORES	90,00	200,00	100,00
ADIANTAMENTO DE CLIENTES	0,00	0,00	0,00
OUTROS	0,00	0,00	0,00
EXIGÍVEL À LONGO PRAZO	0,00	0,00	0,00
FINANCIAMENTOS	0,00	0,00	0,00
PATRIMÔNIO LÍQUIDO	14.130,00	86.600,00	11.700,00
RECURSOS PRÓPRIOS	14.130,00	86.600,00	11.700,00

VIII - COMPOSIÇÃO DO COLEGIADO

A005113 - CARLOS EDNAILTON DE M.FERREIRA	Credito II	[X]Aprova	[ ]Indefere
A003653 - CARLOS EDUARDO DA SILVA	Credito IV	[X]Aprova	[ ]Indefere
A003134 - THIAGO MARQUES LIMA	Credito V	[X]Aprova	[ ]Indefere
Parecer da Agência Favoravel			

IX - OBSERVAÇÕES DA PROPOSTA

25/03/2010 19:01:40 - A043315 (ASSESSOR ASSISTÊNTE)
Deverá ser prestado todo suporte necessário ao grupo para a manutenção deste primeiro e importantíssimo crédito no Programa, de forma a trabalhar a fidelização dos mesmos através da adequada assessoria. Trabalhar com antecedência a renovação do grupo, com o intuito de incluir mais componentes no próximo empréstimo.
25/03/2010 17:33:26 - a003652 (AGÊNCIA)
Grupo novo com 3 componentes, todos cientes do compromisso assumido e a unidade esta de acordo com os valores aprovados. Data do desembolso 26/03/2010.

Pendente

OBSERVAÇÕES

Atualizar

Source: Document provided by R. Santos, August 2010.

Appendix II: Corpus of selected advertising messages

Equipping, reforming and modernizing your business. Crediamigo realizes your wishes.

Make a Crediamigo and guarantee the reform and the modernization of your business.

Tailored credit (and) with Crediamigo: The ideal support to develop your enterprise.

Who wants to grow must remember on name: Crediamigo.

Crediamigo: The easiest solution for you who needs credit.

There is a time when the best thing is to count upon a friend.

More development. More growth. And the best thing: More credit for your business.

Crediamigo Comunidade. A change of the way of life that everybody wants. Especially your Community.

Indicate Crediamigo: If you can grow, everybody can grow.

Do you want even more advantages? Use always your Crediamigo bank card.

Source: Collected advertizing material of Crediamigo, August, 2010.