

PROFITABILITY AND SOCIAL PERFORMANCE OF
MICROFINANCE INSTITUTIONS: EMPIRICAL EVIDENCE
OF RELATIONS BETWEEN DIFFERENT TYPES OF VARIABLES.

*RENTABILIDAD Y DESEMPEÑO SOCIAL DE LAS
ENTIDADES MICROFINANCIERAS: EVIDENCIA EMPÍRICA
DE RELACIONES ENTRE DISTINTOS TIPOS DE VARIABLES.*

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ABSTRACT.

Microfinance is often considered a “double bottom line” sector, which refers to organizations that take care of their financial side and their social responsibility, trying to give minimum coverage to both. An optimistic vision of microfinance programs as a new key for development considered that they had, in themselves, an important social value. This paper contributes to the study of the relations between variables linked to social and financial purposes of a wide database of Microfinance Institutions. The data reflect large differences between the entities, but no relation is found between the size, profitability and social performance of institutions.

Keywords: Microfinance; Financial Institutions; Development Strategies.

RESUMEN.

Las Instituciones Microfinancieras se contemplan como organizaciones que deben atender a objetivos económico-financieros, al tiempo que atienden a una finalidad social. Desde una perspectiva optimista, se ha considerado a los programas de microfinanzas como una nueva clave para el desarrollo, suponiendo que tienen por su propia naturaleza un importante valor añadido social. Este artículo contribuye, a partir de una amplia base de datos, al estudio de las variables asociadas a los objetivos sociales y financieros de las Instituciones Microfinancieras. En el conjunto de los datos, que reflejan grandes diferencias entre las entidades, no se observan relaciones entre el tamaño de las mismas, su rentabilidad y desempeño social.

Palabras clave: Microfinanzas; Instituciones financieras; Estrategias de desarrollo

JEL Classification: G21, O16, F30.



1. INTRODUCTION.

Microfinance programs currently reach 154 million people in all sorts of countries and environments. One hundred and ten million of these clients are women, and 107 millions are considered “poorest clients”, according to the latest report of the Microcredit Summit Campaign (Daley-Harris, 2009). These figures depict a well developed sector that has grown fast in the last two decades.

Microfinance responds to a basic lack of access to the financial system in many parts of the world. In high income countries, access difficulties are limited to small percentages of people suffering social exclusion, or to those who voluntarily refuse to deal with the financial system. In middle and low income countries, however, large sections of the population are in practice excluded from standard services like loans, deposit accounts, credit cards and other means to facilitate payments. Beck, Demirgüç-Kunt and Martínez (2007a) collected data from 209 banks in 62 countries to give a clear picture of the problem. The minimum amounts for loans and maintenance fees are very high in many countries, as are documentation requirements. In some cases, the minimum amount to open a deposit account is higher than the country’s per capita income. Barriers like these are higher in countries with lower income, making access to the financial system unaffordable for large sections of the population. In terms of access facilities, a 99 country report by Beck, Demirgüç-Kunt and Martínez (2007b) listed the major differences regarding the number of bank branches per inhabitants and per square kilometre. Once again the results show that problems are considerably worse in lower income countries.

In practice, these shortcomings have been solved in part through informal finance, which is still present in many places. This financing is accomplished through relatives, Rotating Savings and Credit Associations (ROSCA), private lenders and other agents. Different techniques and practices, including group lending, the increasing amount of loans, physical and cultural proximity and simple, speedy working methods make microfinance a technological improvement on these traditional forms of informal finance. Microfinance today is a consolidated sector that combines advantages of both formal and informal sectors. Advantages of the former are lower interest rates (in comparison with private lenders) and a higher degree of formality and security, while the latter’s advantages are nearness and availability, as well as lower collateral requirements.

Similar experiences to current microfinance programs include government-backed banks in rural areas, cooperatives and savings and loan associations that have operated since the mid-nineteenth century. Postal savings and savings bank services are other examples of this kind of activity. Hollis and Sweetman (1998) looked into several European organizations developed in the eighteenth and nineteenth centuries that performed in ways similar to some NGOs providing microfinance services today.

However, these earlier cases never matched the sector's current development, which began in the 1970s principally with the activities of Grameen Bank and Accion. The sector began to expand more rapidly in the 1990s. These two pioneering institutions are still operating today, and their early and parallel development (in Bangladesh and Latin America) demonstrates the need and opportunity for such instruments in different settings and places.

The best known case is that of M. Yunus, who started a programme of small group loans to poor women with his own funds. According to Yunus (2003), with adequate funding these women were able to improve their income and also improve their situation in terms of self-esteem and empowerment. High rates of return, and progressively more efficient functioning of microfinance institutions, would also facilitate the institution's sustainability. This combination of sustainability and positive social impact led many agencies to support the programs, which were seen for a while as a panacea for problems of underdevelopment. Thus, the World Bank, United Nations Development Program (UNDP), foreign aid agencies from a number of countries, private foundations and many others began to fund programs to support microfinance, giving further impetus to the sector. More recently, traditional financial institutions (banks, savings banks and credit cooperatives) have taken this commitment on board, usually as part of Corporate Social Responsibility policy rather than any business vision, at least in the short term. Many financial organizations include microfinance as part of their socially-oriented activities, funding these programmes through related foundations or similar non-business channels.

The nature of the sector's activities has gradually changed and the term "microcredit" has given way to the broader one of microfinance, in recognition of the importance of providing other services such as savings, means of payment, insurance and remittances at the micro level. Extending the framework has been hailed as a positive move for institution and client sustainability alike. It is remarkable how important savings are in covering the need for deposits from customers, and in enabling institutions to obtain funds in a more natural and economic way. On the demand side, Rutherford (2000) looked into the needs of the poor, and concluded that it was essential to facilitate deposits to provide adequate coverage of their needs for financial services. Gulli (1999) also noted the possibility of saving, even among the poorest, and the demand for such services. Lacalle (2008)

reflected the progress of the sector in this regard, and identified the provision of savings services as one of the challenges for the immediate future. From the perspective of the microfinance institution, and in the framework of the German Development Cooperation (GTZ), Wisniewski (1999) examined the advantages and drawbacks of deposits as a means to financing these institutions, noting their relatively low cost, their potential synergies with loans, and other potential comparative advantages in relation to other means of funding.

The present paper studies the main variables relating to the financial and social performance of a major sample of Microfinance Institutions. This paper is primarily aimed to the study of the relationships between variables in the sample, and to analyze some possible implications. The determination of the causes of potential conflicts between variables or goals are issues that remain for further research. The following section analyses the objectives of these institutions and their possible problems. The third and fourth sections explain data sources, variables and the Principal Components methodology used. The conclusions are given in the final section.

2. MICROFINANCE INSTITUTIONS: FINANCIAL AND SOCIAL OBJECTIVES.

With the opportunity and need for microfinance services recognized and accepted, the progressive development of the sector is clarifying some issues, while also raising others.

By way of example, the likelihood of becoming self-sufficient through working with small amounts of money and people with limited income was questioned until recently. Critics argued that microfinance institutions took advantage of direct or indirect subsidies and external support, and that this was what enabled their work and their actual feasibility. Today, sustainability is undoubtedly possible, and the debate now focuses on what kind of measures must be taken to achieve it. In the sample we analyzed, for example, 587 institutions (three out of four) covered all their operating expenses, an achievement reflected in their operational self-sufficiency values (above 100%). This group includes institutions from different continents and of all kinds, from banks to NGOs.

The potential conflict between economic and social objectives is, on the other hand, a recurring subject of debate in the sector, and has yet to be resolved. The present paper contributes to this debate through a study of different variables and their mutual relationships.

It is widely believed that microfinance programs always have a positive social impact. From this point of view, the issue is not one of particular interest. However, a brief review of recent experiences gives us some cause for concern. There have been cases (the best known is the Bolivian one) in which microfinance institutions have become larger, losing their social orientation in the process. Indeed, critics of microfinance argue that such “microdebts” do

not help the poor, who are worse off with some financial costs to pay. For such critics, it is clear that not everyone is cut out to be a businessman/woman, and that these programmes (in regard to microcredits) have forced debts that do not improve the situation of the clients thus affected.

Furthermore, microfinance practices vary widely, and they include loans with different methodologies (groups, village banks, individual loans and so forth) and diverse objectives. Thus, in the microfinance sector, loans from NGOs to very poor people for small productive projects rub shoulders with loans of up to several thousand dollars granted by banks to small to medium enterprises.

This explains the pressing need for better classification and differentiation in the sector. In particular improved comprehension and clarity is required with regard to compliance with social objectives, their measurement and effects.

2.1. THE TWO APPROACHES TO MICROFINANCE.

The discussion about social and economic objectives is reflected in the two approaches that have traditionally dominated microfinance, depending on the emphasis given to one aspect or the other.

Reviewing the opinions of some important players in the industry, Van Maanen at Oikocredit (2004) described these two approaches as “sound business” and “development tool”. Rhyne, from Accion (1998) addressed the debate in terms of a “sustainability camp” and a “poverty camp”. Robinson (2001) distinguished between the “financial systems approach” and the “poverty lending approach”. This latter description is particularly common, so we will use it from now on.

The poverty lending approach is the best known and is based on the Grameen Bank model, focusing on the social aspects of this instrument. Today, the Microcredit Summit Campaign is the main representative of this vision of microfinance. This initiative brings together thousands of organizations and works towards a range of social objectives. By 2015 the target for credit and other services is 175 million of the poorest families, especially women. The idea is also to ensure by that year that 100 million of the poorest families have passed the poverty line of those living with less than US\$ 1 at 1993 PPP¹ or US\$ 1.25 at 2005 PPP². From this perspective, activities are sustainable, even if they need initial support. In any case, sustainability would be a secondary issue, being basically a means for working with a larger number of people, many of them women, amongst the poorest of all.

Under the financial systems approach, the main purpose should be to serve people traditionally excluded from the financial system. It is important

¹ PPP: Purchasing Power Parity.

² The Campaign also includes families starting in the bottom half of their nation’s poverty line and moving above that marker.

to avoid subsidizing these activities, and brokerage is assumed to be positive for customers and for the economy as a whole. Attention focuses on efficiency, on the study of appropriate and viable projects, on the setting of accurate interest rates to cover all costs and on other technical issues. Low income earners will logically be regular customers, but reaching the poorest among those excluded from the financial system is not a priority. The elimination of subsidies means efficient work and a good selection of investments, thereby promoting the sustainability of the initiative. The poorest will benefit indirectly from the growth of microenterprise activities (finding a job, for example). In the same way, and going beyond the view of the microfinance institutions, the importance of a joint vision of the financial system, and the measures to improve it, has recently been stressed. This is the approach of organizations such as the United Nations (2006), the World Bank (2008) and the benchmark institution CGAP (2004)³. Supporters of this approach argue that microfinance institutions facilitate access to the financial system, leading to economic and structural improvements to increase income and reduce poverty. In a practical contribution to this debate, Spencer and Wood (2005) used a matrix to analyze the problems and responses of the two main approaches to intervention in the financial sector from a pro-poor perspective. The first seeks to stimulate economic growth by helping the financial sector to develop, while the second focuses on helping the poor directly.

Studies attempting to prove the positive relationship between the expansion of the financial system and broader objectives of economic and social development include Jalilian and Kirkpatrick (2002) and, more recently, Beck, Demirgüç-Kunt and Levine (2007). Both report some improvements in terms of income and income distribution as the financial system develops in several countries. Even so, as the authors themselves acknowledge, the evidence is not sufficient to clarify these relationships, their causes, and how they take place.

Moreover, in times like the present, with a financial crisis causing serious problems in the real economy, detailed study is required to identify the kind of financial system that would be positive for other purposes and the conditions required for it to be so. FitzGerald (2007) makes a critical contribution to the relationship between financial system and economic growth, challenging some common ideas and highlighting the need for contextualized studies in relation to the phases of economic development in each case. In this respect, Gutiérrez-Goiria and Unceta (2009) study the different behaviour of variables linked to the development of the financial system according to the different levels of income of the countries, highlighting the importance of identifying

³ Although formally independent, the Consultative Group to Assist the Poor (CGAP) is based at the World Bank. Comprising public and private entities, it includes major foreign development agencies, multilateral donors like the World Bank, UNDP or the European Commission, and private foundations like Ford or the Bill & Melinda Gates Foundation. Since 1995, it has worked on the development of the microfinance sector, and is now an essential organization.

new indicators of the financial sector development, which should include a measurement of its coverage in social terms (i.e. their ability to be truly inclusive and reach more segments of the population).

2.2. THE CONFLICT BETWEEN SOCIAL AND FINANCIAL OBJECTIVES.

The attention to the poorest populations could cause a decline in profitability. Firstly, small amounts per client are necessary to work within this sector. Therefore, a larger number of accounts and customers would be needed to achieve the same amount of funds that other entities get. This would increase some fixed costs of operations, and hinder the achievement of economies of scale. These poorer customers may require some extra work too, due to illiteracy, problems in accessing documentation and their general lack of experience with this kind of activity, all of which would require greater levels of support. Although it remains debatable, it has also been suggested that late payments could be higher in cases of extreme necessity.

In the annual report of the Microcredit Summit Campaign, Daley-Harris (2009) comes out clearly in favour of giving priority to social objectives. He calls on the World Bank to lead the bid for initiatives targeting customers living on less than US\$ 1 a day and to support the creation of centres of excellence to display and extend the possibility of successfully serving the poorest. In the Campaign's view, the World Bank should focus on initiatives aimed at the poorest, since there are enough private investors interested in other kinds of programmes considered more secure or profitable (in Latin America or Eastern Europe mainly), and they have already begun to intervene.

Conning (1999) develops a model to study basic tradeoffs between outreach, impact and sustainability, and compares its predictions with available data of microfinance institutions performance. The study concludes that reaching the poorest is more costly than reaching other segments even when there are not fixed lending costs.

García and Olivé (2003) detail various practical and theoretical reasons that explain the conflict between outreach (defined as care for the poorest) and complete self-sufficiency (which involves the complete independence of subsidies). The analysis is complemented with a review of 27 evaluations of several programmes and their results. Even if they do not find an absolute incompatibility, the paper concludes that institutions that focus on the outreach will usually have to give up the achievement of complete self-sufficiency, and will depend on subsidies. On the other hand, they find that the most profitable entities rely on methodologies similar to those of commercial banks.

Armendáriz and Morduch (2005) argue that there are good examples (as ASA in Bangladesh) of profitability reaching the poorest, but it is not the most usual case, and subsidization remains the norm for microlenders focusing on the "low end". They also found major differences in profitability between large

institutions from South America and most of those in Southeast Asia, which were less profitable. This reflects differences in approach and objectives in each context.

Cull, Demirgüç-Kunt and Morduch (2007) conducted an in-depth study using data from 124 institutions in 49 different countries. They shed some light on the debate, but their conclusions are not decisive. Firstly, they notice the importance of the credit methodology applied (individual, village banks or solidarity groups) and its relation to amounts, costs and social orientation. The results of their study vary according to the groups in several cases. They find that institutions that make small loans are not necessarily less profitable, and they remark some examples of institutions that are profitable with notable outreach to the poor. Nevertheless, these cases are exceptions within their sample, and they find trade-offs between outreach and profitability. For instance, larger loan sizes in the sample are associated with lower average costs. Since larger loan sizes are considered as an indicator of less outreach to the poor, this means a trade-off between outreach and profitability. Therefore, the higher costs of organizations working with village banks and solidarity groups are, at least partially, a consequence of the lower average size of loans and the work with poorer clients. Furthermore, institutions that offer individual loans are clearly the most profitable, while they give the biggest loans and reach a smaller proportion of women.

Cortés (2007) considered the difficulty of reconciling the debate between sustainability and scope. Nevertheless, he noted that consensus was widespread among professionals about the need for institutional self-sufficiency, as this would involve the absence of subsidies, a degree of professionalization, the development of a specific methodology, suitable scales and several other conditions.

In practice, there are major differences in the institutions and their programmes. Although cases vary widely in all zones, two main models are usually followed. The first, representative of Latin America, involves giving relatively large amounts of credit, and is geared to working with small and micro enterprises and informal sectors excluded from the usual credit, which does not necessarily include the poorest people. The second model represents the widespread practice in South Asia (Bangladesh, India and Pakistan primarily) and opts for smaller amounts, working with the poorest people.

3. DATA SOURCES AND VARIABLE DEFINITIONS.

In recent years, internal and external factors have helped to increase the amount of information available on the microfinance sector. Internally, the institutions have understood the benefits of displaying their financial positions and social achievements, particularly in drumming up funds from donors and investors and developing management tools. It also helps in monitoring institutions and comparing them with similar initiatives. Externally, the agencies

that support such programs and prospective investors alike are increasingly demanding better, more standardized reporting systems for microfinance institutions.

As a result of this union of interests, a first version of the Mix Market portal started as an United Nations Conference on Trade and Development (UNCTAD) project, and was subsequently supported by CGAP. This website gives a wide range of information to researchers, investors and microfinance sector agents. It collects the values of several basic variables from hundreds of microfinance institutions worldwide. Reports are published regularly to analyze average market values, to work on variable definition and standardization and to achieve greater transparency in the performance indicators for microfinance institutions. The database can be freely consulted online⁴.

The website is a good source of data for the study of variables on financial issues. It collects up to 26 variables indicative of balance sheet, income statement, productivity, efficiency, risk and other values. Information on social issues, however, is more limited. Within the general category of outreach (comprising 13 variables), some do not in themselves guarantee a social value, such as the total number of savers and borrowers. Data is generally scarce on the really representative variables, particularly the ones classified in the “depth of coverage” section⁵.

The information collected from the available variables and data includes the type of institution, the geographical area, and 10 selected variables that define the main characteristics whose relations and conflicts are the aim of the study. These key variables measure the size of the institutions, their number and type of customers, profitability (measured in a number of ways) and social impact. This last issue is measured through some variables covering the organizations’ social approaches and work done with clients of lower incomes or those in a worse situation. The data was collected according to their values as of 31 December 2007, the closing date for the last complete financial year. The sample obtained by selecting the variables in the Mix Market portal produced information from 801 institutions, of which 10 were discarded because they had anomalous values or lacked sufficient data. Finally, the sample comprised 791 entities of different types and areas. Appendices 1-4 summarize information on the data.

The variety of areas and types of institutions listed makes the sample highly representative. Of course, some microfinance institutions, usually with a certain background and means, are more likely to submit their data to the portal than others. So it is possible that smaller and weaker institutions in the sector were not sufficiently represented.

⁴ www.mixmarket.org.

⁵ The percentage of clients below the poverty line, for example, is reported only in 38 of the 791 entities of the sample. The percentage of loans below US\$300 is reported in 75 of the 791.



3.1. EXPLANATION OF VARIABLES.

Type of institution.

They are grouped into six different categories: Banks, Rural Banks, Cooperative/Credit Unions, Non-Bank Financial Institutions, NGO and Others⁶.

Geographical area.

In line with the Microfinance Information Exchange classification, the following areas are considered: Africa, East Asia and the Pacific, Eastern Europe and Central Asia, Latin America and The Caribbean, Middle East and North Africa, and South Asia.

Variables related to the size of the institution, the number and type of customers and the profitability.

- Total assets: expressed in US dollars.
- Gross loan portfolio: all outstanding principal for all outstanding client loans, including current, delinquent and restructured loans, but not loans that have been written off. It does not include interest receivable. It does not include employee loans. Expressed in US dollars.
- Number of active borrowers.
- Number of savers.
- Return On Assets (ROA): net operating income (post tax) divided by period average assets. It is expressed as a percentage, and measures the profitability of the institution before leverage.
- Return On Equity (ROE): net operating income (post tax) divided by period average equity. It is expressed as a percentage, and measures the profit that the institution generates using the money that shareholders have invested.
- Operational self-sufficiency: financial revenue in relation to total financial expenditures, operating expenses and loan loss provision. Expressed as a percentage, it reflects the ability to cover the expenses with the revenues generated.
- Profit margin: net operating income in relation to the total financial revenue, expressed as a percentage.

Variables to measure social outreach.

A restrictive interpretation of social outreach was preferred for the present paper. Under the financial systems approach, the provision of financial services to excluded sectors is normally considered to generate a positive social impact by itself. Variables identified as representative of outreach, such as the number of borrowers or depositors, could by themselves mean added social value. However, the effects of the mere inclusion in the financial system, and the way this affects broader goals of economic and social development are not yet clear. Furthermore, following for instance ethical banking criteria, an investment

⁶ See Appendix 1 for a full explanation of each type of entity.

should include (in order to be considered of added social value) a clear purpose to support disadvantaged groups, ecological or cultural objectives, or similar purposes. It is difficult to include in these projects some loans of several thousand dollars given to small and medium businesses, which seem to be covering an unattended niche in the market. For this reason, and with the limitations of the information available, only two variables were chosen:

- Percentage of women borrowers: even if it is not a guarantee of impact, the percentage of women out of the total number of borrowers is an indicator of the social orientation of the entity, which is addressed to this impoverished group with the worst development indicators around the world.
- Average loan balance per borrower: a small amount indicates work with lower income population, sacrificing potential economies of scale and possibly reflecting a commitment to social objectives.

4. METHODOLOGY, DATA INTERPRETATION AND RESULTS.

4.1. METHODOLOGY.

The analysis was performed using the Principal Components Analysis (PCA)⁷ and completed with the values of some common descriptive statistics, such as averages, medians, standard deviations and correlations between variables. We believe all of them are well known and need no explanation. A few notes will be given on PCA to aid understanding and interpretation of the work done, but the present paper was not designed to provide theoretical disquisitions on the technique applied. An introduction to PCA is given in Jolliffe (2002).

PCA is a descriptive multivariate technique that studies the sample data. The multivariate character involves a simultaneous analysis of groups of data in which several variables are available for individuals or subjects studied (in the present paper, each financial institution). Like other factor analysis, PCA combines the variables, searches for common elements and seeks to eliminate redundancies, transforming the initial variables into a few artificial variables or factors that explain a high percentage of the information. PCA has graphical representations (on the artificial variables or factors) that simplify the relationship between the original variables and the relations between objects (financial institutions) as well, to show what entities are similar in the whole of variables analyzed. A helpful point of PCA is the chance to use observations and variables that are not properly included in the analysis. These supplementary or illustrative observations, such as categories or groups of elements, allow a better interpretation as a whole.

It is also a method of interdependence, since there is no distinction between dependent and independent variables. Its objective is to identify

⁷ This methodology was originally developed by Hotelling (1933).



variables and/or objects of study that are related and show how they are related. The independence of PCA from any hypothesis about data and probability distribution can be considered both as an advantage (since no previous knowledge is required) and as a disadvantage, because the prior understanding can not be incorporated when it is available, incurring in a loss of information. The study of the relationship between the variables starts from the matrix of correlations between them. This is sometimes considered as a limitation of this technique, since only linear relationships among the variables are considered.

4.2. RESULTS.

Principal Components Analysis of the data suggests interpreting the first three axes or factors, which explain almost 70 per cent of the total variability⁸. These three axes, without any rotation, leave variables clearly divided into three groups, which are interpreted in a very clear and exclusive way.

The first factor or axis can be considered as representative of “size”. It explains 31 per cent of the total variability and is associated with the variables Total assets, Gross loan portfolio, Number of borrowers and Number of savers.

The second factor explains 26 per cent of the variation in the data, and is associated with the variables of “profitability”: Return on assets (ROA), Operational self-sufficiency, profit margin and, to a lesser extent, Return on equity (ROE).

The third factor explains 13 per cent of the variability, and is associated with the variables Percentage of women borrowers and Average loan balance per borrower.

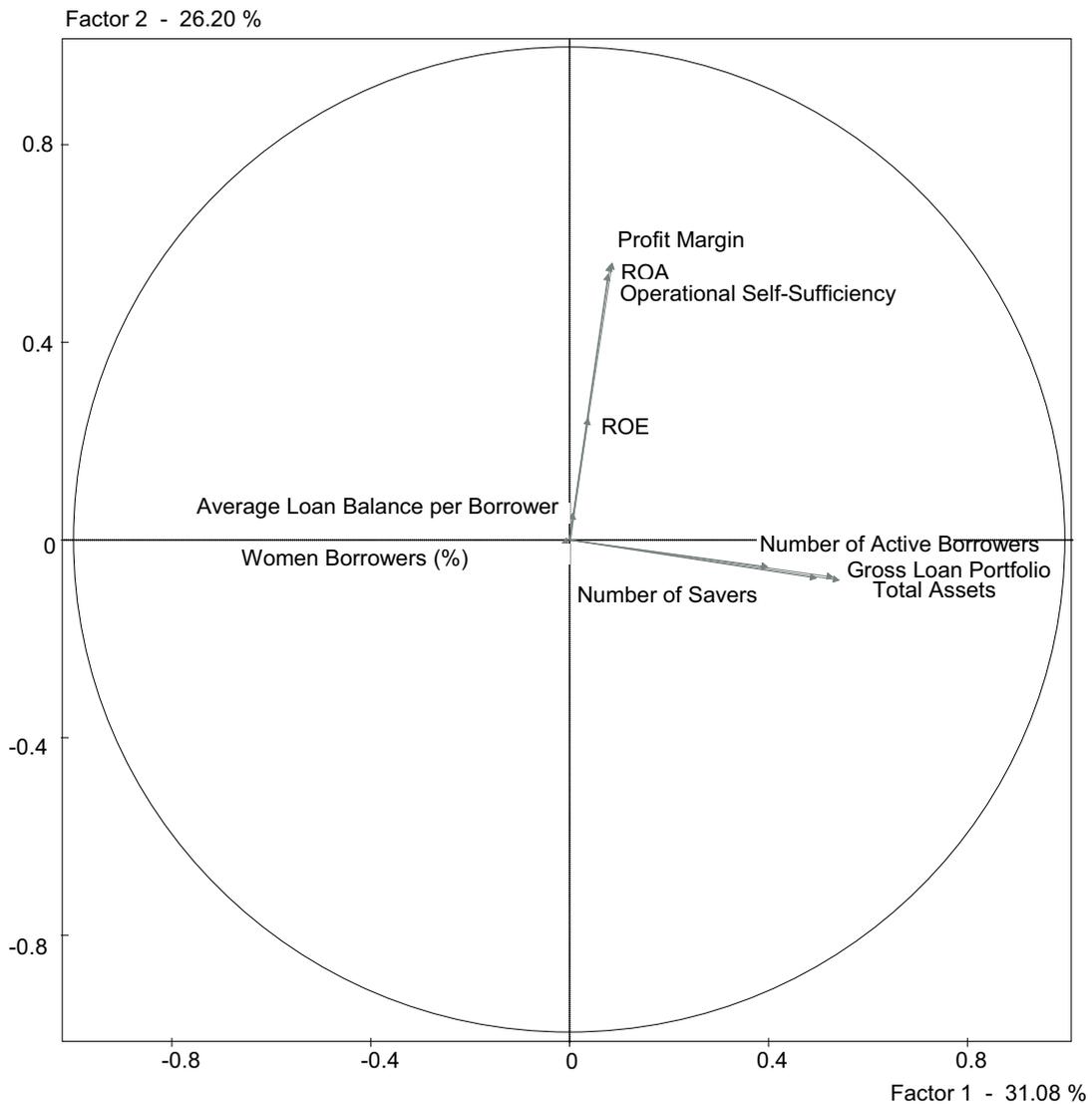
Proximity between the variables is interpreted in terms of correlations. Thus, two variables will be very close if they are positively correlated; if they are negatively correlated one will be distant from the other, and they will be placed at an intermediate distance if they are independent. Moreover, the distance from origin indicates the quality of representation of the variable on that plane. Therefore, the variables represented close to the origin (graphically seen as short indicators) should not be considered in the interpretation of these factors, which in this case concerns the variables Percentage of women and Average loan balance.

As regards the first two axes or factors, note first the high intra-group relation of the four size-related variables, as well as that of the four associated with profitability. In both cases the relationship is evident in Figure 1 and

⁸ The selection of the number of factors to retain or interpret is at the discretion of the researcher. Among the established methods, we selected the Kaiser’s criterion. According to this, only factors with eigenvalues greater than 1 are retained (see Appendix 5). This means that each factor extracts a proportion of variance that means at least as much as the equivalent of each original variable.

also according to their correlations (see correlation matrix in Appendix 2). This result is not unexpected, since variables such as Total assets, Gross loan portfolio and Number of borrowers may naturally grow or decrease together. The same applies to ROA, ROE, Operational self-sufficiency and Profit margin, whose meanings are related.

FIGURE 1: FACTORS 1 AND 2 OF PRINCIPAL COMPONENTS ANALYSIS.



Source: The authors.

The almost total lack of intergroup relation between the variables (the ones representatives of size with the ones of profitability) is well worth noting. This means that economies of scale, which could make larger institutions more profitable, are not observed according to the sample. Given the possible



existence of a critical minimum size, or perhaps of hidden differences caused by the enormous changes in size between entities, the analysis was repeated by dividing the entities into four groups by quartiles according to their total assets, without relevant changes.

Another interesting aspect in these first two axes is the clear alignment of the variable Number of savers with the variables associated to the size of the entity, and its lack of relation with the ones related to profitability. Although a positive correlation between the Number of savers and variables such as Total assets would appear to be logical, it would not have been surprising to find a less direct relationship between these elements, given the existence of large institutions that do not provide savings services (SKS in India, or Financiera Independencia in Mexico, among others). On the other hand, the theory often emphasizes the importance of savings to the institutions, their adequate financing and feasibility. From this point of view, savings could positively affect profitability, but data analysis belies this assumption.

The sample of 791 institutions depicts a sector in which credit still dominates (in comparison to savings), even if there are wide variations depending on the cases. In relation to the type of institution, as seen in Appendix 3, the number of savers is greater than the number of borrowers in the case of banks, rural banks and cooperatives, although in much smaller proportions than the usual ones in the formal system. In contrast, the clients of NGOs and Non-Bank Financial Institutions are basically borrowers and in fact their median values of zero indicate that more than half of the institutions of this type have no savers.

Table 1 divides the entities into two groups, depending on whether they have savers or not, and examines their profitability, with no differences observed.

TABLE 1: PROFITABILITY AND SAVINGS (AVERAGES).

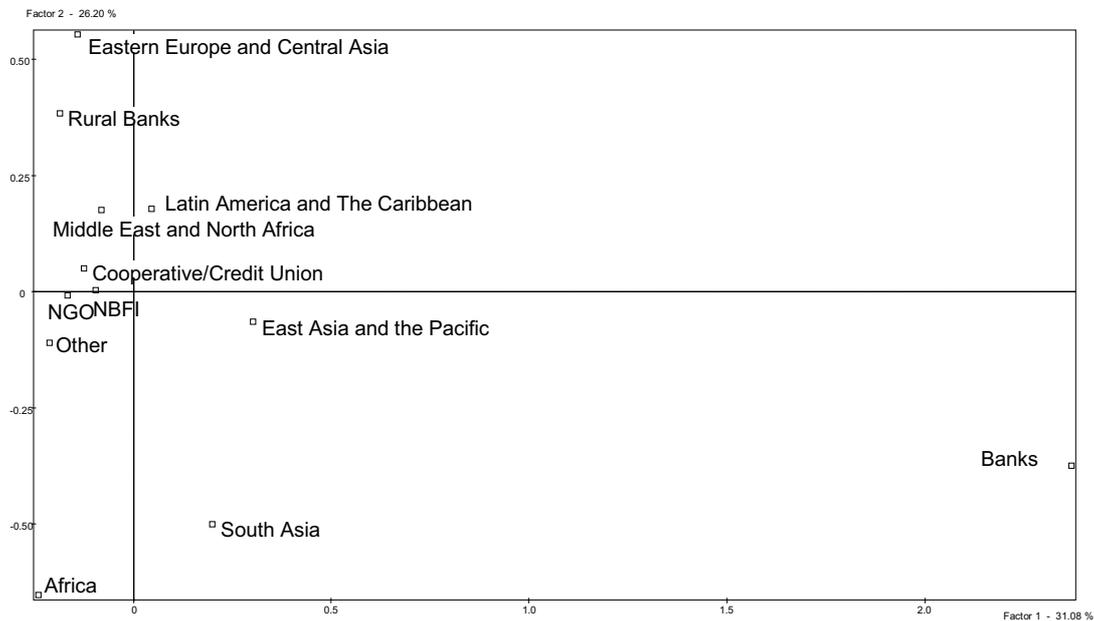
| | Nº | ROA | ROE | Operational self-sufficiency | Profit margin |
|----------------|-----|-----|-----|------------------------------|---------------|
| Without savers | 442 | 2.3 | 7.8 | 119.1 | 3.8 |
| With savers | 301 | 1.0 | 9.9 | 115.4 | 3.1 |

Source: The authors.

Although they are not shown in Figure 1, due to the large number of individuals, the projections of each financial institution revealed a similar pattern to the variables. Thus, we find large organizations whose performance is around the average. This is the case of Bangladesh Rural Advanced Committee (BRAC) and ASA in Bangladesh, Caja Popular and Caja Libertad in Mexico, Banco Estado in Chile and Equity Bank in Kenya among others. Profits generated by some less well known small or medium institutions are, however, a long way from the average.

Figure 2 shows the representation on the axes 1 and 2 of the averages of all the institutions belonging to a particular area or type.

FIGURE 2: TYPE OF INSTITUTION AND GEOGRAPHICAL ZONE IN AXES (FACTORS) 1 AND 2.



Source: The authors.

In relation to the size (axis 1, abscissa) Banks are clearly beyond the average size of the microfinance institutions. Bank Rakyat Indonesia, Vietnam Bank for Social Policies, Grameen Bank and Banco Caja Social Colombia banks are distinguished by their large size. At the other extreme, the smallest institutions are the NGOs. Indeed, the average for this group would be even lower without the significant effect of some large NGOs like BRAC and ASA. Although institutions of Africa are smaller, differences in size by geographical areas are less pronounced than differences due to the type of institution.

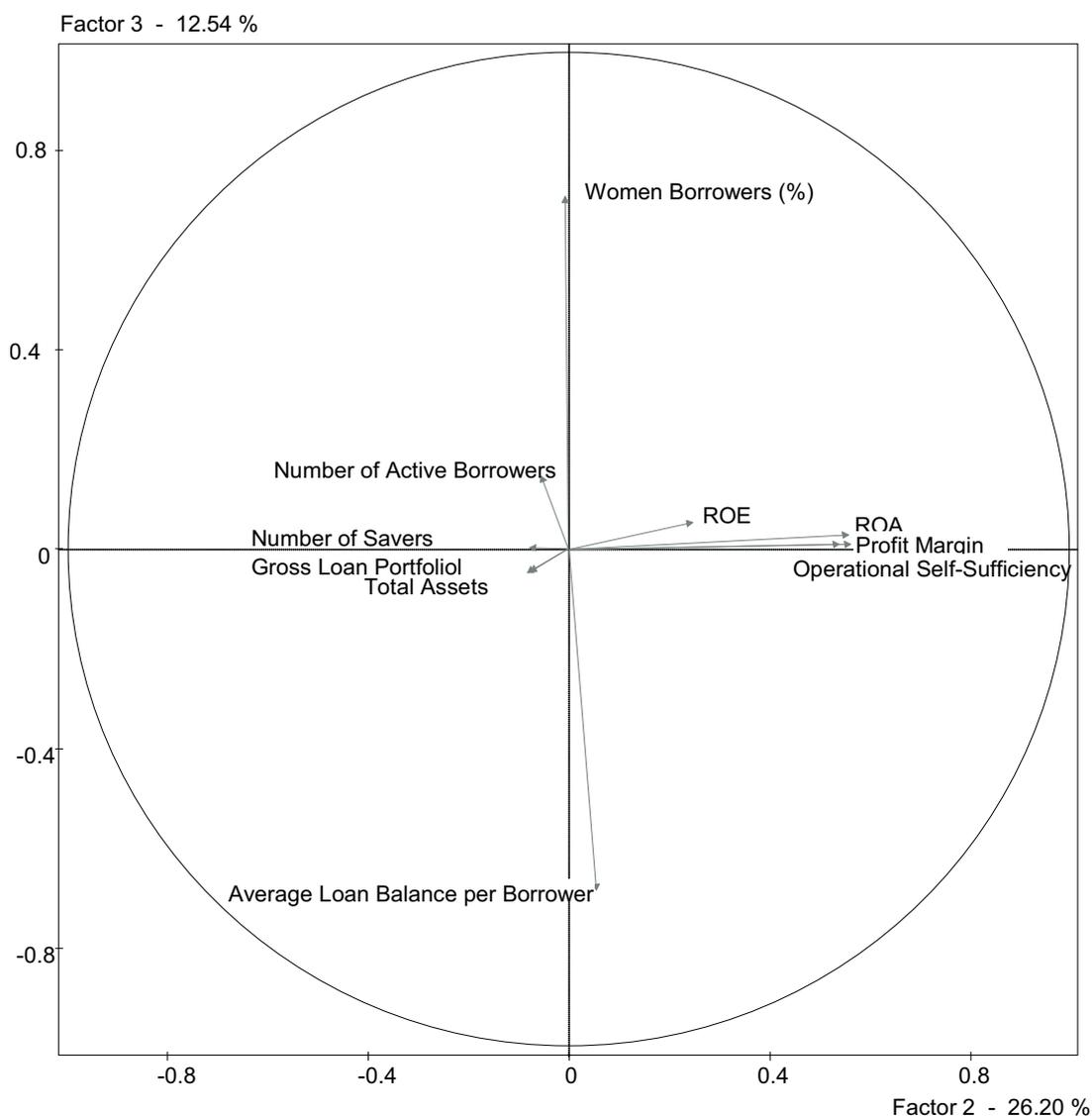
In terms of profitability (axis 2, ordinate), Central Asia and Eastern Europe have the highest average values, while Africa and South Asia are the areas where smaller profits are obtained. There is an important difference between South Asia and Latin America, which could confirm the different models attributed to these areas. Unlike what occurs with size-related variables, differences in profitability are not especially relevant between the different types of institutions.

As explained above, the third main factor or axis is associated with variables capable of showing an approach to the social factor. Figure 3 depicts the third axis (ordinate), representing it with axis 2.

The Percentage of women borrowers and Average loan balance per borrower variables are clearly aligned with axis 3, although in opposite directions. According to this interpretation, a higher value for the Average loan balance indicates, logically, that the level of social commitment is lower. The negative correlation between the two variables shows that lower amounts primarily

relate to entities with a higher percentage of women, who generally have lower incomes.

FIGURE 3: FACTORS 2 AND 3 OF PRINCIPAL COMPONENTS ANALYSIS.



Source: The authors.

It is interesting to note the weakness of the relation between size and profitability variables and the variables that reflect the approach to social concerns. As in the case of Axes 1 and 2, we can talk about practical independence between variables associated to different axes, as observed in the correlation matrix and in Figure 3 (small indicators representing the alignment of variables of size and profitability in relation to axis 3). Accordingly, there is no conflict (or relationship) observed in the sample between variables of social outreach and profitability, and we find institutions

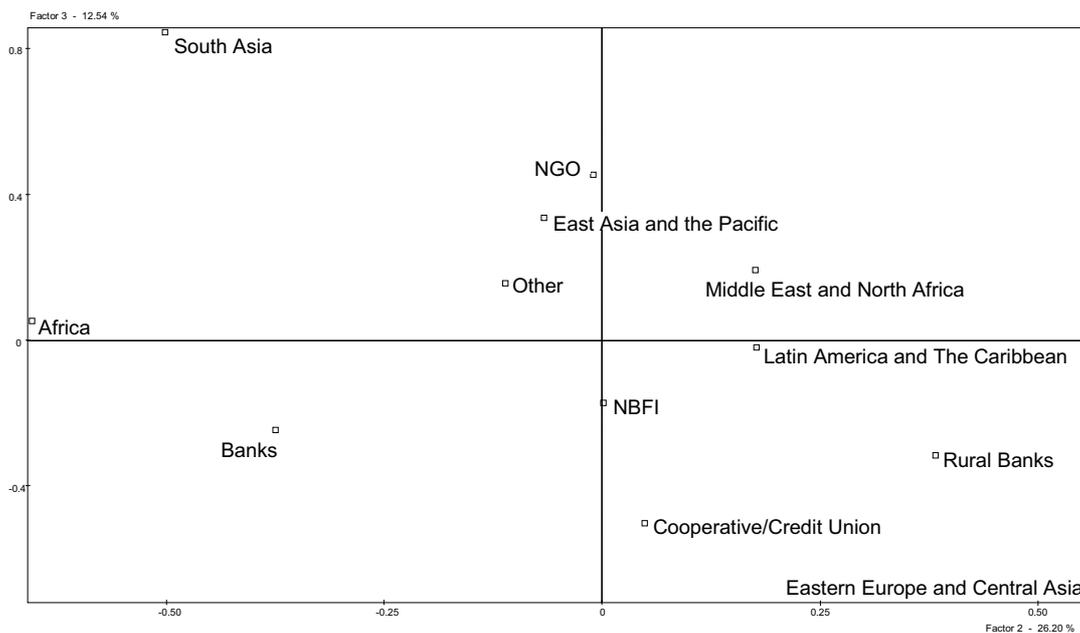
with high Percentages of women and low Average loans that obtain yields above average, and also the opposite.

According to this measure of social concern, BRAC and ASA (both NGOs) and the Grameen Bank score the highest values. These three major institutions are situated in Bangladesh. On the negative side, some small institutions in Central Asia and Eastern Europe, mostly Cooperatives or Non-bank financial institutions are deserving of attention.

Geographically, institutions with a greater social orientation are located mainly in South Asia and East Asia and Pacific, with their opposites being located in Central Asia and Eastern Europe (see Figure 4). The difference between Latin America and South Asia here also reinforces the idea of two models. In any case, we must take into account the influence of per capita income, especially for the variable Average loan, which naturally tend to be higher in areas with higher incomes.

Institutions with the highest social outreach values are mostly NGOs. Cooperatives have the lowest values, and Non-bank financial institutions are below average in terms of their social performance.

FIGURE 4: TYPE OF INSTITUTION AND GEOGRAPHICAL ZONE IN AXES (FACTORS) 2 AND 3.



Source: The authors.

5. CONCLUSIONS.

The present paper studies a large, representative sample of the rapidly developing microfinance sector that is already present under different institutional guises in all kinds of countries.



The variety of data and institutions studied is striking. As Appendixes 3 and 4 show, the central values (means and medians) are very different depending on the area and type of institution, and deviations from the average are very high both within each group and globally. It is, therefore, difficult to draw general conclusions and any conclusions reached must be properly contextualized. This concern is shared by many microfinance actors, who demand better classification and definition to distinguish between activities and services with different target groups and purposes. In short, the sector is heterogeneous, and any assessment of the institutions' activities must look further than simple membership of the sector.

In relation to the analysis of social and economic issues, we found that the available information is asymmetric, economic data being much more detailed and more structured. Given the nature of the sector and its dual economic and social purpose, more information is needed to measure the added social values of these initiatives. Especially when public support, foreign aid for development or non-profit organizations are involved, better measurement of social impact is vital in justifying support to one initiative or another, beyond the idea that any program is positive. The lack of adequate data for measuring social performance is a general limitation; this is reflected in the paper, which has made full use of the limited information available.

The variables selected produced three clear factors in the Principal Component Analysis. The first was the size of the institutions, the second one profitability and the third social outreach. The clear alignment of each group of variables with its factor or axis is a result that might be expected in some cases, given the similar meaning of some of the measures. However, what is striking is the almost total independence observed between the variables of different groups. For a sample of nearly 800 institutions, it is remarkable to find near-zero correlations between size-related variables, those associated with profitability and social variables. No relationship was found between size and profitability; economies of scale appear not to have any importance. There is no contradiction (or connection) between profitability and social impact in the sample. Even with all the limitations of the measurement of this scope, it was reasonable to expect a negative influence of the lower average loan on profitability, but this effect was not detected in the sample organizations. We may conclude, therefore, that it is possible to work with the poorest populations.

Savings services, demanded by customers and institutions, are often regarded as a key factor for the sector to develop properly. In contrast, the importance of savings is not reflected in terms of profitability. The Number of savers variable is clearly aligned with other variables representing organizational size, and has no relation with variables covering issues of profitability and sustainability. There are no differences in profitability between institutions that provide savings services and the rest.

In geographical terms, the differences in the size of institutions are not relevant. Profitability, however, shows significant differences. Central Asia and

Eastern Europe show highest average returns; profitability is lowest in Africa. In terms of social impact, outreach is lowest in Central Asia and Eastern Europe, while South Asia displays a greater focus on working with women and with small amounts of money. The differences in terms of profitability and social impact between Latin America and South Asia reinforce the idea of two main models representative of (although not exclusive to) these areas. For subsequent work, the introduction of income-related variables could help to explain some geographical differences.

Size clearly distinguished banks from the rest, the smallest institutions being the NGOs. Average profitability does not vary too much between the different types of institutions. In the analysis of social issues, only NGOs stood out, being the only type of institution with a showing above the average.

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APPENDIX 1: NUMBER OF INSTITUTIONS BY REGION AND TYPE OF INSTITUTION

| Regions | Number of institutions | Type of institution * | Number of institutions |
|---------------------------------|------------------------|---------------------------------------|------------------------|
| Africa | 142 | Banks | 43 |
| East Asia and the Pacific | 99 | Rural banks | 35 |
| Eastern Europe and Central Asia | 162 | Cooperative/Credit Union | 140 |
| Latin America and The Caribbean | 268 | Non-Bank Financial Institution (NBFI) | 258 |
| Middle East and North Africa | 33 | NGO | 296 |
| South Asia | 87 | Other | 19 |
| Total | 791 | Total | 791 |

(*) Type of institution (according to the Microfinance Information Exchange classification and glossary)

Bank: a licensed financial intermediary regulated by a state banking supervisory agency. It may provide any of a number of financial services, including: deposit taking, lending, payment services, and money transfers.

Rural bank: banking institution that targets clients who live and work in non-urban areas and who are generally involved in agricultural-related activities.

Cooperative/Credit Union: a non profit, member-based financial intermediary. It may offer a range of financial services, including lending and deposit taking, for the benefit of its members. While not regulated by a state banking supervisory agency, it may come under the supervision of a regional or national cooperative council.

Non-Bank Financial Institution (NBFI): an institution that provides similar services to those of a Bank, but is licensed under a separate category. The separate license may be due to lower capital requirements, to limitations on financial service offerings, or to supervision under a different state agency. In some countries this corresponds to a special category created for microfinance institutions. These institutions often derive from NGOs, being regulated as they grow.

NGO: an organization registered as non-profit making for tax purposes or some other legal charter. Its financial services are usually more restricted, usually not including deposit taking. These institutions are typically not regulated by a banking supervisory agency.

Others: institutions that could not be classified in any of the previous categories.

APPENDIX 2: CORRELATION MATRIX

| | Total assets | Gross loan portfolio | Number of active borrowers | Number of savers | ROA | ROE | Operational self-sufficiency | Profit margin | Women borrowers (%) | Average loan balance per borrower |
|-----------------------------------|--------------|----------------------|----------------------------|------------------|------|------|------------------------------|---------------|---------------------|-----------------------------------|
| Total assets | 1.00 | | | | | | | | | |
| Gross loan portfolio | 0.97 | 1.00 | | | | | | | | |
| Number of active borrowers | 0.51 | 0.56 | 1.00 | | | | | | | |
| Number of savers | 0.84 | 0.72 | 0.52 | 1.00 | | | | | | |
| ROA | 0.02 | 0.02 | 0.03 | 0.01 | 1.00 | | | | | |
| ROE | 0.01 | 0.01 | 0.00 | 0.00 | 0.30 | 1.00 | | | | |
| Operational self-sufficiency | 0.01 | 0.01 | 0.02 | 0.02 | 0.70 | 0.23 | 1.00 | | | |
| Profit margin | 0.03 | 0.03 | 0.02 | 0.02 | 0.81 | 0.20 | 0.76 | 1.00 | | |
| Women borrowers (%) | -0.05 | -0.06 | 0.07 | -0.01 | 0.01 | 0.02 | -0.02 | 0.00 | 1.00 | |
| Average loan balance per borrower | 0.01 | 0.02 | -0.05 | -0.01 | 0.05 | 0.02 | 0.04 | 0.06 | -0.24 | 1.00 |

APPENDIX 3: MEANS, STANDARD DEVIATIONS AND MEDIANS BY REGIONS.

| Regions | Total assets (millions) | Gross loan portfolio (millions) | Number of active borrowers (thousands) | Number of savers (thousands) | ROA % | ROE % | Operational self-sufficiency % | Profit margin % | Women borrowers % | Average loan balance per borrower % |
|----------------------|-------------------------|---------------------------------|--|------------------------------|-------|--------|--------------------------------|-----------------|-------------------|-------------------------------------|
| Africa | 27.11 | 16.19 | 36.69 | 54.26 | -3.14 | 6.35 | 105.36 | -17.23 | 59.62 | 626.47 |
| East Asia, Pacific | 99.12 | 65.74 | 120.58 | 230.86 | 1.25 | -6.72 | 118.62 | 6.15 | 70.09 | 503.91 |
| East Eur. Cent. Asia | 17.50 | 13.80 | 8.07 | 1.40 | 5.04 | 25.72 | 128.01 | 14.10 | 50.94 | 3156.84 |
| Latin Ame Caribbean | 64.48 | 51.62 | 41.79 | 34.45 | 2.86 | 9.22 | 118.46 | 10.45 | 62.23 | 1276.60 |
| Mid East North Afri | 35.66 | 29.47 | 60.07 | 0.00 | 3.44 | 9.02 | 123.07 | 2.23 | 64.14 | 661.26 |
| South Asia | 46.98 | 34.63 | 339.68 | 179.59 | -0.63 | 4.50 | 106.80 | -10.80 | 81.62 | 204.23 |
| Total | 49.67 | 36.44 | 77.55 | 70.70 | 1.65 | 9.23 | 116.98 | 3.05 | 62.81 | 1306.44 |
| Africa | 83.18 | 43.24 | 88.37 | 187.53 | 14.74 | 121.43 | 45.17 | 66.92 | 25.00 | 938.19 |
| East Asia, Pacific | 684.74 | 412.47 | 663.64 | 2154.58 | 10.05 | 105.94 | 35.80 | 36.45 | 34.91 | 703.19 |
| East Eur. Cent. Asia | 30.42 | 24.43 | 13.79 | 9.07 | 6.11 | 81.80 | 38.23 | 31.99 | 21.32 | 4653.90 |
| Latin Ame Caribbean | 236.33 | 182.98 | 114.55 | 182.37 | 7.76 | 63.98 | 32.85 | 24.33 | 22.53 | 3007.86 |
| Mid East North Afri | 72.33 | 63.78 | 111.72 | 0.00 | 8.37 | 15.48 | 47.09 | 77.76 | 26.95 | 613.82 |
| South Asia | 132.24 | 93.15 | 1143.73 | 1029.94 | 8.27 | 117.47 | 41.27 | 56.73 | 29.02 | 243.89 |
| Total | 286.79 | 184.99 | 462.57 | 850.77 | 9.85 | 91.13 | 38.98 | 45.74 | 26.77 | 2957.59 |
| Africa | 4.55 | 2.73 | 10.89 | 3.32 | 0.65 | 3.27 | 101.16 | 1.15 | 61.25 | 257.04 |
| East Asia, Pacific | 2.43 | 1.46 | 6.16 | 0.71 | 3.17 | 12.46 | 116.05 | 13.83 | 85.00 | 211.38 |
| East Eur. Cent. Asia | 4.43 | 3.77 | 2.09 | 0.00 | 4.21 | 14.10 | 121.69 | 17.82 | 46.70 | 1780.31 |
| Latin Ame Caribbean | 8.25 | 6.48 | 11.81 | 0.00 | 3.12 | 11.28 | 114.64 | 12.77 | 60.55 | 775.30 |
| Mid East North Afri | 11.67 | 9.57 | 14.05 | 0.00 | 4.34 | 6.96 | 124.70 | 20.02 | 59.80 | 434.62 |
| South Asia | 10.61 | 6.64 | 42.86 | 0.00 | 0.94 | 9.67 | 107.40 | 6.89 | 99.50 | 147.86 |
| Total | 5.95 | 4.36 | 10.17 | 0.00 | 2.59 | 11.20 | 113.56 | 11.96 | 62.70 | 551.91 |

APPENDIX 4: MEANS, STANDARD DEVIATIONS AND MEDIANS BY TYPE OF INSTITUTION.

| Type of institution | Total assets (millions) | Gross loan portfolio (millions) | Number of active borrowers (thousands) | Number of savers (thousands) | ROA % | ROE % | Operational self-sufficiency % | Profit margin % | Women borrowers % | Average loan balance per borrower % |
|---------------------|-------------------------|---------------------------------|--|------------------------------|-------|--------|--------------------------------|-----------------|-------------------|-------------------------------------|
| Banks | 448.42 | 307.47 | 503.79 | 979.62 | 0.98 | 8.97 | 114.54 | 6.06 | 53.13 | 1376.79 |
| Rural banks | 8.72 | 5.57 | 16.80 | 23.66 | 2.69 | -6.28 | 128.36 | 17.00 | 43.51 | 875.41 |
| Cooperative | 33.59 | 24.63 | 16.18 | 37.23 | 1.28 | 22.48 | 116.61 | 3.31 | 50.52 | 2106.60 |
| NFBI | 36.64 | 28.86 | 55.50 | 15.49 | 1.61 | 13.35 | 116.63 | 1.26 | 58.49 | 1588.18 |
| NGO | 16.82 | 13.85 | 74.24 | 27.29 | 1.86 | 3.82 | 116.37 | 2.34 | 74.82 | 756.24 |
| Other | 19.98 | 17.89 | 20.59 | 2.41 | 0.55 | -22.85 | 117.63 | 2.96 | 65.64 | 791.85 |
| Total | 49.67 | 36.44 | 77.55 | 70.70 | 1.65 | 9.23 | 116.98 | 3.05 | 62.81 | 1306.44 |
| Banks | 1103.29 | 689.18 | 1389.08 | 3617.40 | 6.83 | 21.32 | 29.25 | 29.87 | 25.84 | 1098.53 |
| Rural banks | 12.44 | 8.10 | 26.40 | 37.79 | 4.69 | 138.03 | 33.85 | 22.46 | 41.44 | 895.05 |
| Cooperative | 152.68 | 111.59 | 72.75 | 139.77 | 8.71 | 105.74 | 42.34 | 38.21 | 21.31 | 2770.39 |
| NFBI | 79.01 | 67.76 | 169.50 | 43.68 | 10.67 | 104.10 | 34.69 | 52.81 | 25.64 | 3440.72 |
| NGO | 53.73 | 46.54 | 489.24 | 391.47 | 10.45 | 65.16 | 42.23 | 46.83 | 22.82 | 2907.79 |
| Other | 42.48 | 42.85 | 20.37 | 7.50 | 10.39 | 117.66 | 42.45 | 38.70 | 30.58 | 826.95 |
| Total | 286.79 | 184.99 | 462.57 | 850.77 | 9.85 | 91.13 | 38.98 | 45.74 | 26.77 | 2957.59 |
| Banks | 122.69 | 85.21 | 59.79 | 72.97 | 1.90 | 8.89 | 113.76 | 12.10 | 52.40 | 1150.26 |
| Rural banks | 2.76 | 2.08 | 2.29 | 8.52 | 3.26 | 22.18 | 123.16 | 18.80 | 41.70 | 567.86 |
| Cooperative | 3.34 | 2.62 | 2.21 | 3.20 | 1.08 | 7.31 | 108.05 | 7.46 | 51.40 | 1363.91 |
| NFBI | 10.05 | 7.01 | 12.82 | 0.00 | 3.44 | 14.99 | 118.16 | 15.37 | 53.35 | 683.87 |
| NGO | 4.18 | 3.30 | 11.03 | 0.00 | 2.98 | 8.66 | 112.74 | 11.32 | 78.60 | 280.35 |
| Other | 5.94 | 4.51 | 14.52 | 0.00 | 2.18 | 5.31 | 112.72 | 11.25 | 74.80 | 470.10 |
| Total | 5.95 | 4.36 | 10.17 | 0.00 | 2.59 | 11.20 | 113.56 | 11.96 | 62.70 | 551.91 |

APPENDIX 5: EXPLAINED VARIANCE

Total variance explained by the components

| Component | Total | Percentage | Cumulated Percentage |
|-----------|-------|------------|----------------------|
| 1 | 3.11 | 31.08 | 31.08 |
| 2 | 2.62 | 26.20 | 57.27 |
| 3 | 1.25 | 12.54 | 69.81 |
| 4 | 0.90 | 9.01 | 78.82 |
| 5 | 0.77 | 7.65 | 86.47 |
| 6 | 0.58 | 5.77 | 92.24 |
| 7 | 0.31 | 3.11 | 95.35 |
| 8 | 0.29 | 2.88 | 98.23 |
| 9 | 0.17 | 1.73 | 99.95 |
| 10 | 0.00 | 0.05 | 100.00 |
| Total | 10.00 | 100.00 | |

Proportion of variance of each variable explained by the components

| Label variable | Component 1 | Component 2 | Component 3 |
|-----------------------------------|-------------|-------------|-------------|
| Total assets | 0.91 | 0.02 | 0.00 |
| Gross Loan Portfolio | 0.87 | 0.01 | 0.00 |
| Number of Active Borrowers | 0.49 | 0.01 | 0.03 |
| Number of Savers | 0.77 | 0.02 | 0.00 |
| Return on Assets | 0.02 | 0.81 | 0.00 |
| Return on Equity | 0.00 | 0.16 | 0.00 |
| Operational Self-Sufficiency | 0.02 | 0.76 | 0.00 |
| Profit margin | 0.02 | 0.82 | 0.00 |
| Women Borrowers (%) | 0.00 | 0.00 | 0.63 |
| Average Loan Balance per Borrower | 0.00 | 0.01 | 0.59 |