Economics and Sociology
Occasional Paper No. 2347

POVERTY AND MICROFINANCE IN BOLIVIA

by

Sergio Navajas

Richard L. Meyer

Claudio Gonzalez-Vega

Mark Schreiner

and

Jorge Rodríguez-Meza

December 1996

Rural Finance Program
Department of Agricultural Economics
The Ohio State University
2120 Fyffe Road
Columbus, Ohio 43210-1099

Abstract

A major accomplishment of development finance in recent years has been the expansion of the supply of financial services for the poor. Little information exists, however, about the extent to which microfinance actually reaches the poor. This study analyzed a sample of clients served by five microfinance organizations in Bolivia. The data revealed that these organizations reach many rural and urban poor, but not the poorest of the poor. Group-based lenders reach a somewhat poorer clientele than those organizations making individual loans. The individual lenders, however, seem to be able to better adjust loan sizes to fit the creditworthiness of the client. Therefore, individual lenders appear to face fewer constraints in increasing loan sizes in response to client demand. The ability of these organizations to adjust to loan demand may be important in influencing their ability to retain clients as competition among organizations increases.

POVERTY AND MICROFINANCE IN BOLIVIA[1]

Sergio Navajas, Richard L. Meyer, Claudio Gonzalez-Vega,
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I. Introduction

A major accomplishment of development finance in recent years has been the expansion of the supply of financial services for the poor. A variety of organizations are experimenting with different types of products, lending technologies, and institutional arrangements designed to give poor people much greater access to microfinancial services than is available through traditional bank and nonbanking institutions. Today in Indonesia and Bangladesh, for example, millions of household-enterprises are reached by these new arrangements, and in other developing countries the numbers of clients reach tens of thousands. A recent World Bank (1996a) inventory revealed that 206 institutions had about US$7 billion in outstanding small loans made to more than 13 million individuals and groups as of September, 1995.

Many microfinance institutions claim they reach the poorest of the poor, but little empirical evidence is available to demonstrate the poverty level of clients or the extent to which certain

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[1] A preliminary and shorter version of this paper was submitted to the Selected Paper Competition of the American Association of Agricultural Economists Meetings to be held in Toronto, Canada, July 1997. The paper presents results based on data collected in a survey of clients of five microfinance organizations in Bolivia in November-December of 1995. Funding for the survey was provided by the Mission in Bolivia of the Agency for International Development, under purchase order No. AID 511-0000-0-00-6005. This paper is part of a series of studies of five Bolivian microfinance organizations undertaken by the Rural Finance Program at The Ohio State University. Financial assistance for the project was also received from Interdizciplinäre Projekt Consult (IPC) in Frankfurt, Germany, the Organisation for Economic Co-operation and Development (OECD), and the Department of Agricultural Economics at The Ohio State University. The authors gratefully acknowledge this support but assume full responsibility for the results presented here.

[2] Meyer is Professor Emeritus of Agricultural Economics, Gonzalez-Vega is Professor of Agricultural Economics and Director of the Rural Finance Program, and Navajas, Rodríguez-Meza, and Schreiner are Graduate Research Associates, all at The Ohio State University. The individuals and organizations that made this research possible are too numerous to cite here, but the authors want to express their special gratitude to Steve Smith, Kimberly A. Brown, and Gabriela Salazar de Santa Cruz at USAID/Bolivia, as well as Fernando Prado, Miguel Hoyos (FUNDAPRO), and numerous representatives of the five microfinance organizations studied, whose tireless collaboration made these efforts both fruitful and enjoyable.

programs and methodologies reach a poorer clientele than others.[3] Such demonstration is not an easy task. Moreover, there is a major gap between the emerging literature on poverty assessments and attempts to collect systematic information about access to financial services by various poverty groupings. Attempts to close the gap are often constrained by a lack of data on either the clients or the population in areas served by microfinance organizations (*e.g.*, Hulme and Mosley).

This paper contributes to closing the gap by reporting on a comparative study of five microfinance organizations in Bolivia. Bolivia is a particularly interesting developing country to study because considerable experimentation in microfinance is occurring and the total number of clients served now exceeds 120,000. One of this country's most important microfinance institutions, BancoSol, is the first non-governmental organization (NGO) in Latin America to transform itself into a formal private commercial bank specifically catering to the poor (Glosser). Several other microfinance organizations exhibit strong outreach and sustainability outcomes (Gonzalez-Vega *et al.*, 1997b). Furthermore, the country's per capita GNP is estimated at only US$ 770 (World Bank, 1996b) and income distribution is highly skewed so that 86 percent of the rural population is estimated to live in poverty (UNDP).

The present study includes BancoSol and four other organizations recognized for innovativeness in serving poor urban and rural clienteles. The next section of this paper briefly describes these five organizations and the data collected from their clients. This is followed by a discussion of the procedure used to measure client poverty. The following sections report the comparative results on clientele distribution by poverty level and the relationship between poverty and size of loan received. The last section presents implications of the findings.

II. Data

The analysis reported in this paper is part of a larger research project designed to examine the evolution of five comparatively successful microfinance programs in Bolivia.[4] They are BancoSol - a private, fully-chartered commercial bank; Caja de Ahorro y Préstamo Los Andes - a private, non-bank regulated financial institution, and three NGOs: Fundación para la Promoción y Desarrollo de la Microempresa - PRODEM, Centro de Fomento a Iniciativas Económicas - FIE, and Fundación Sartawi. All five have reached fairly high levels of success measured by international standards such as those considered in Christen *et al.* All received considerable amounts of technical assistance and concessionally priced loans and grants. Some have already achieved and the others are gradually approaching subsidy independence.

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3 Moreover, not all microfinance organizations granting loans to poor people are sustainable. This highlights the challenge of reaching this clientele in a cost-effective manner.

4 Additional information about the project, its objectives, and results can be found in Gonzalez-Vega *et al.* (1997b).

There are several differences amongst the five organizations. BancoSol, PRODEM, and Sartawi rely heavily on a group lending technology while FIE and Caja Los Andes use mostly individual lending. Most clients of BancoSol, FIE, and Caja Los Andes are located in urban areas, while PRODEM and Sartawi cater mostly to a rural clientele. The five organizations share a commitment to serve a population largely excluded from commercial bank services. They grant fairly small first-time loans and increase loan sizes with repeat loans, charge relatively high interest rates, and develop close client relations by even hiring staff who speak indigenous languages. They pursue aggressive collection policies so arrears rates and write-offs are very small.

We surveyed a random sample of clients with active loans as of September, 1995. Logistical and cost considerations required that interviews were limited to the urban areas of La Paz and El Alto and the rural Altiplano around Lake Titikaka. The total number of clients of these organizations in the study areas exceeded 52,000 and this number represented a significant portion of their total clients. A total of 622 clients were interviewed and the sampling proportions varied from just under 1 to over 3 percent of the clients to assure a significant representation from each organization and avoid sampling errors. For the present analysis, due to some missing values, 588 observations with complete data were included. The distribution was 221 BancoSol clients, 124 for Caja Los Andes, 91 for FIE, 83 for Sartawi, and 69 for PRODEM.

Two unique features were incorporated into the data collection. First, data were collected on some client characteristics that could be compared to poverty information available about the Bolivian population. Second, complete borrowing histories for the clients were provided by the loan officers and corroborated by credit dossiers. The mean number of loans per client ranged from 2.5 in FIE to just over 5 for BancoSol. These data permit a comparison between the poverty of the clients and the general population as well as an analysis of loan sizes relative to client poverty.

III. Poverty Measurement in Bolivia

Poverty can be measured in a variety of ways and there is a vast literature exploring the alternatives and their limitations (*e.g.*, Blackwood and Lynch). The purposes of this study and the objectives of many microfinance institutions are to utilize a methodology that provides reasonable estimates of client poverty levels using data readily observable or obtainable. Comprehensive income and consumption surveys are too costly and time consuming from this perspective.

The selection of Bolivia for this study was fortuitous because of its nationwide poverty assessment in the form of a *Mapa de Pobreza* (Poverty Map). This assessment was prepared using an Unsatisfied Basic Needs (UBN) approach common in Latin America to determine some of the physical and nonphysical requirements for a meaningful life. The method consists of:

(a) defining basic needs and their satisfiers,
(b) selecting variables and indicators that express degrees of satisfaction,
(c) defining a minimum level for each indicator below which the need is considered unsatisfied, and

(d) classifying households as poor when one or more basic needs are unsatisfied (Boltvinik).

The UBN approach measures poverty directly in terms of characteristics of goods and services. Because of the difficulty of defining individual poverty, everyone in a poor household is considered to be poor.

The *Mapa de Pobreza* employed the standard UBN methodology. Four basic concepts were selected as the components of a comprehensive poverty index: (a) housing, (b) access to public services, (c) education, and (d) access to health services. The first two reflect the physical environment and the quality and availability of public services. The last two reflect two necessary conditions for human capital formation in the form of education and access to health services. In other Latin American studies, health is usually not included.

The following characteristics were then defined for the components:

1. Housing:

   (a) Quality of construction materials for floors, walls and roof.
   (b) Availability of rooms relative to number of occupants.

2. Public Services:

   (a) Type and origin of water and sewage systems.
   (b) Availability of electricity and fuels used for cooking.

3. Education:

   (a) Years of school completed.
   (b) Attendance in school now.
   (c) Literacy.

4. Health: Access to health services (formal or informal).

A norm or minimum level was defined for each variable. When the norm is not reached, the household is considered to have not satisfied that basic need. The methodological problem involves defining a sensible norm for each concept. The process required defining minimally acceptable levels, then comparing them with Census data. If the modal values in the Census were compatible with the proposed norm, then the norm was accepted. Otherwise, the second most frequently observed value for the concept in the Census was used as the norm. Except for water, sewage, and some building materials, the same norms were used for urban and rural areas.

Once the norms were established for each component, a ratio was calculated between the norm and the observed value. This ratio is defined as the Index of Achievement and is specified as follows:

$$Ix_j = x_j / x*$$

where Ix_j = standardized Index of Achievement.
x_j = value of the variable in household j.
x^* = value of the norm.

The range of this ratio depends on the range of options in the Census. When the observed value is equal to the norm, the Index of Achievement is equal to one. The ratio may be greater than two, in which case it is rescaled to a maximum value of two, so the range of variability is kept constant. This truncation means that the index is a better proxy of poverty than it is of wealth, particularly for higher income households that far exceed the norms.

For the education variable, a comprehensive index was specified for each person in the household as:

$$ane_{ij} = (ap_{ij} + as_{ij} / ap* + as*)al_{ij}$$

where ane_{ij} = Index of Achievement of education of individual i in household j.
ap_{ij} = years of schooling of individual i in household j.
as_{ij} = school attendance of individual i (1 if attending, zero otherwise).
$ap_{ij}*$ = norm for years of schooling by age of individual i.
$as_{ij}*$ = norm for attendance of individual i.
al_{ij} = literacy of individual i (1 if literate, zero otherwise).

The norms for years of schooling, literacy, and attendance are determined by the age of the individual. A family education index was constructed by averaging the indices for all persons in the household.

The overall poverty Index of Achievement for the household was calculated by simply averaging the indices for the four components:

$$I_j = 1/4 (CV_j + CSB_j + RE_j + CSS_j)$$

with CV_j, CSB_j, RE_j, CSS_j referring to housing, public services, education, and health, respectively.

Given the Index of Achievement, an Index of Poverty was constructed as:

$$cx_j = 1 - Ix_j$$

The critical levels of this poverty index are -1 (highest level of basic needs satisfaction), 0 (household poverty line), and 1 (lowest level of basic needs satisfaction).

Using the Index of Achievement, the *Mapa* methodology classified households into two broad categories: poor and non-poor. In turn, each category was broken down into further sub-categories:

(a) The **Poor Household** category is divided into three subdivisions of "poorest," "indigent," and "moderately poor." The poorest are those households that achieved 0 to 30 percent of the Index, while the indigent reached 30 to 60 percent of basic needs satisfaction, and the moderately poor achieved 60 to 90 percent.

(b) The **Non-Poor Household** category has two subdivisions. By definition, a household reaching 90 percent of basic needs satisfaction is considered non-poor. "Threshold" households are those that on average satisfy 90 to 110 percent of the basic needs, while the "satisfied" are defined as those satisfying 110 percent or more. A heterogeneous aggregate of non-poor households beyond the threshold is included in the category of "satisfied."

Not all the *Mapa de Pobreza* questions could be included in our client questionnaire. Those that were included represented about 56 percent of those used for the *Mapa*. With them we constructed an equivalent index for the clients of the microfinance organizations, using the same weights for the variables common to the *Mapa*. We also divided the sample into the same five poverty categories as reported in the *Mapa*.

IV. Clientele Distribution by Poverty Level

The results presented in Table 1 show the incidence of poverty as measured in the *Mapa* in the urban and rural areas of La Paz province, which correspond to the regions from which the clients were sampled. The table also shows the distribution of clients of the five microfinance organizations by poverty level.

Table 1. Distribution of Clients by Index of Basic Needs Achievement by Region and Organization (percentages).

	NON POOR			POOR			
Area/Organization	Satisfied	Threshold	Total	Moderate	Indigent	Poorest	Total
La Paz - urban	**26.6**	**17.0**	**43.6**	**39.0**	**16.7**	**0.7**	**56.4**
FIE	34.0	45.7	79.8	18.1	2.1	0.0	20.2
Caja Los Andes	23.4	50.8	74.2	22.7	3.1	0.0	25.8
BancoSol	21.3	42.3	63.6	33.9	2.5	0.0	36.4
La Paz - rural	**0.9**	**2.3**	**3.2**	**21.0**	**64.0**	**11.9**	**96.9**
PRODEM	10.8	8.1	18.9	66.2	14.9	0.0	81.1
Sartawi	4.7	19.8	24.4	57.0	17.4	1.2	75.6

Striking features of the data are both the high incidence of poverty in Bolivia and the depth of rural poverty compared to urban. About 56 percent of the urban population of La Paz province were classified as poor compared to almost 97 percent in rural areas in the same province. Furthermore, almost 12 percent of the population in rural areas were in the poorest category compared to less that one percent in urban areas. Likewise, 64 percent of the rural population were classified as indigent compared to 17 percent of the urban population. Clearly, poverty is pervasive and especially deep in rural Bolivia. There is tremendous scope, therefore, for microfinance institutions that can develop lending and deposit mobilization methodologies to serve the poor.

Data in Table 1 show that Sartawi is the only organization to reach any clients in the poorest category, but these borrowers represent only a little more than one percent of its total number of clients in the sample. All five organizations reach some clients in the other four categories, but the proportion of indigent clients reached is far less than their share of the total population. There is relatively little difference among the three urban programs or between the two rural programs in the share of clients represented by the two poorest categories.

If the objective of these organizations is to reach the very poor in their respective market areas, it can be concluded that they have not succeeded very well, at least given this method of poverty measurement. This paper cannot evaluate, however, if the poorest and the indigent are creditworthy. If they are not creditworthy, granting them loans would be misguided and counter-productive and these microfinance organizations are correct when they do not lend to this segment of the population. Other interventions would be more appropriate to lift them out of poverty (Gonzalez-Vega, 1994).

BancoSol stands out in reaching the category of moderately poor in urban areas: 34 percent of its clients belong to this group. This organization is followed by Caja Los Andes, for which 23 percent of its clients are moderately poor, while FIE ranks third in urban areas, with only 18 percent of its clients among the moderately poor. In rural areas, 66 percent of PRODEM and 57 percent of Sartawi borrowers are moderately poor. Therefore, by adding the three poor categories as a proxy of their depth of outreach, these organizations can be ranked by proportion of their poor clientele as: PRODEM (81 percent), Sartawi (76 percent), BancoSol (36 percent), Caja Los Andes (26 percent) and FIE (20 percent). The last two are organizations making individual loans, while the first three rely on group loans.

Additional differences among the organizations emerge in the higher wealth categories of clients. About a third of FIE clients have satisfied their basic needs fully compared to a quarter for Andes or a fifth for BancoSol. The proportions are one in ten clients for PRODEM and one in twenty clients for Sartawi. Although these clients have been classified as non-poor according to this methodology, it is not possible to determine how wealthy they may be. It is logical to expect, however, that few truly wealthy people would be attracted to these five organizations when they have access to commercial bank loans with lower interest rates.

While the largest portion of the clientele of the rural organizations are moderately poor, the greatest share of the clientele of the urban organizations is at the threshold. This share ranges from 42 percent for BancoSol to 51 percent for Caja Los Andes. There may be some debate about how poor are those who have just satisfied minimum basic needs in education, housing, and access to public services (the threshold), but clearly the typical clientele of these organizations are neither wealthy nor among the poorest of the poor.

Compared to FIE (80 percent) and Caja Los Andes (75 percent) with large shares of non-poor clients, in BancoSol less than 64 percent of the clients are non-poor. In turn, BancoSol has a third of its clients in the moderately poor group compared to about one fifth for the other two institutions. This suggests that BancoSol borrowers belong to a lower tier of the population, a perception suggested in our earlier descriptive analysis of the survey data (Gonzalez-Vega *et al.*, 1996).

The rural comparison shows that PRODEM has a larger share of satisfied and of moderately poor clients than Sartawi but a smaller share of threshold clients. Adding up these categories, only about one fifth of PRODEM clients and one fourth of PRODEM clients are non-poor. Both institutions, however, have poor clients that in total are closer to the proportion of poor in the rural population than do any of the urban organizations in comparison to the incidence of urban poverty.

Two generalizations emerge from these results. First, the rural microfinance lenders seem to have reached a poorer clientele than their urban counterparts. This is an interesting result because there is a general belief in the microfinance community that a lending technology of small short-term loans with frequent repayments is not easily replicable in rural environments.[5] Part of the explanation of this success in terms of depth of outreach may be that many of these rural clients live relatively close to La Paz and El Alto and, like the urban poor, they are heavily engaged in trading activities.

Second, the group lending technology adopted by BancoSol, PRODEM, and Sartawi seems to reach a somewhat poorer clientele than either of the two individual lenders. This is not unexpected because the use of the collateral substitute of peer pressure and peer monitoring through joint-liability solidarity groups allows households without traditional real collateral to gain greater access to loans than permitted through individual lenders. The clients, however, must pay higher interest rates for the higher average costs of making smaller loans and incur the additional transaction costs of group borrowing (Gonzalez-Vega *et al.*, 1997a)

Figure 1 graphically summarizes these results and depicts the distribution of the Index of Achievement by lender. The five categories of poor and non-poor clients are shown in the horizontal axis and the percentages of clients represented by each category are plotted on the vertical axis. The graphs for the five microfinance organizations are presented according to their depth of outreach. The distributions of the index for the urban and rural areas of La Paz province are shown for comparison. Three tiers of clients are identifiable: (a) FIE and Caja Los Andes, (b) BancoSol, and (c) Sartawi and PRODEM.

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[5] This paper does not evaluate the levels of cost incurred, which are higher in rural areas, and it does not assess the sustainability of these organizations. It appears, however, that the rural organizations are either more subsidy dependent (PRODEM) or less institutionally viable (Sartawi) than their urban counterparts. This is not the place to discuss the tradeoffs involved (Gonzalez-Vega *et al.*, 1997b).

Figure 1: Distribution of Clients by Poverty Group by Organization.

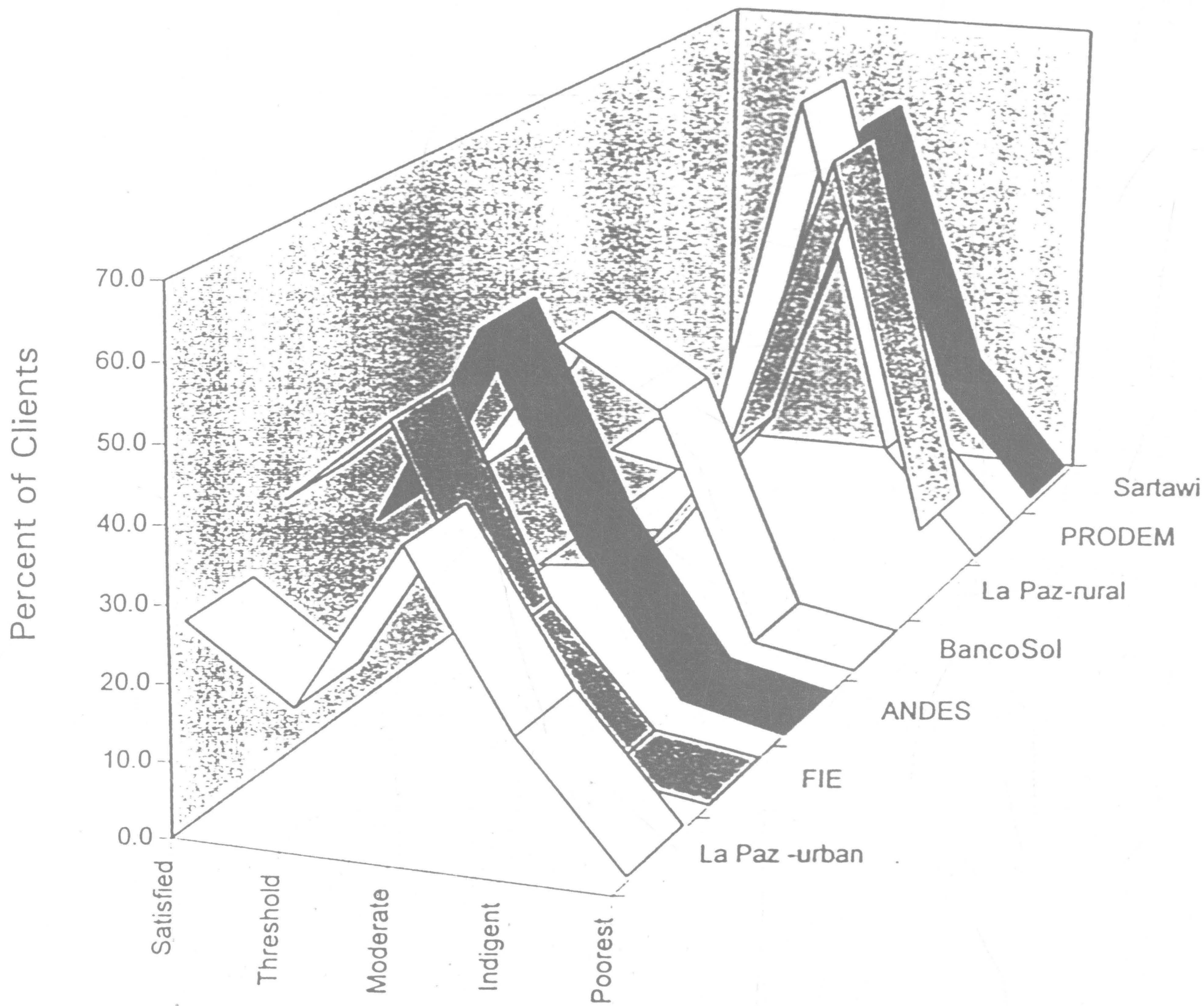

Figure 2 presents a box and whisker plot for the distribution of the Index of Achievement for the clients of the five microfinance organizations. The index is measured on the vertical axis. A value of 0.9 is defined as barely meeting basic needs satisfaction. The width of each shadowed box reflects the relative number of clients included in the study from each of the respective organizations. The height of the boxes is equal to the interquartile distance (IQD), *i e.*, the range of values for the index contained within the second and third quartiles of the distribution. Shorter boxes represent a more concentrated distribution. The box for FIE, for example, shows that 50 percent of its clients are heavily concentrated around the values of 0.9 to 1.1 for the index. This is the threshold group and corresponds to the data reported in Table 1. The box for Caja Los Andes shows a similar concentration, but with a greater proportion of clients closer to the 0.9 level. The longer box for BancoSol indicates a less concentrated distribution, with 50 percent of its clients more equally distributed between the threshold and moderately poor groups. The boxes for PRODEM and Sartawi indicate a greater concentration of clients in the moderately poor group.

The horizontal white line in the interior of each box is located at the median of the data. The median Index of Achievement for FIE clients (1.05) is above the 0.9 poverty line but within the threshold group. That is, a typical FIE client is just above 100 percent satisfaction of basic needs. The median Index of Achievement for clients of Caja Los Andes (1.0) is a bit lower. The median Index of Achievement for BancoSol clients (0.95) is a bit lower still. The typical clients of all three urban organizations are at the threshold. The medians for Sartawi (0.74) and for PRODEM (0.72), in contrast, define the typical rural client as moderately poor.

The darker indented portions of the boxes allow for the identification of statistically significant differences among the medians. The darker areas partly overlap for FIE and Caja Los Andes meaning that their typical client's poverty is not statistically different. The darker area for BancoSol, however, is a bit lower signifying that the typical client is poorer. The coincidence of the darker areas for PRODEM and Sartawi shows that their typical clients are identically poor. These results identify three tiers fairly distinct in the microfinance market niche:

(a) upper threshold group (FIE and Caja Los Andes),
(b) lower threshold group (BancoSol), and
(c) moderately poor group (PRODEM and Sartawi).[6]

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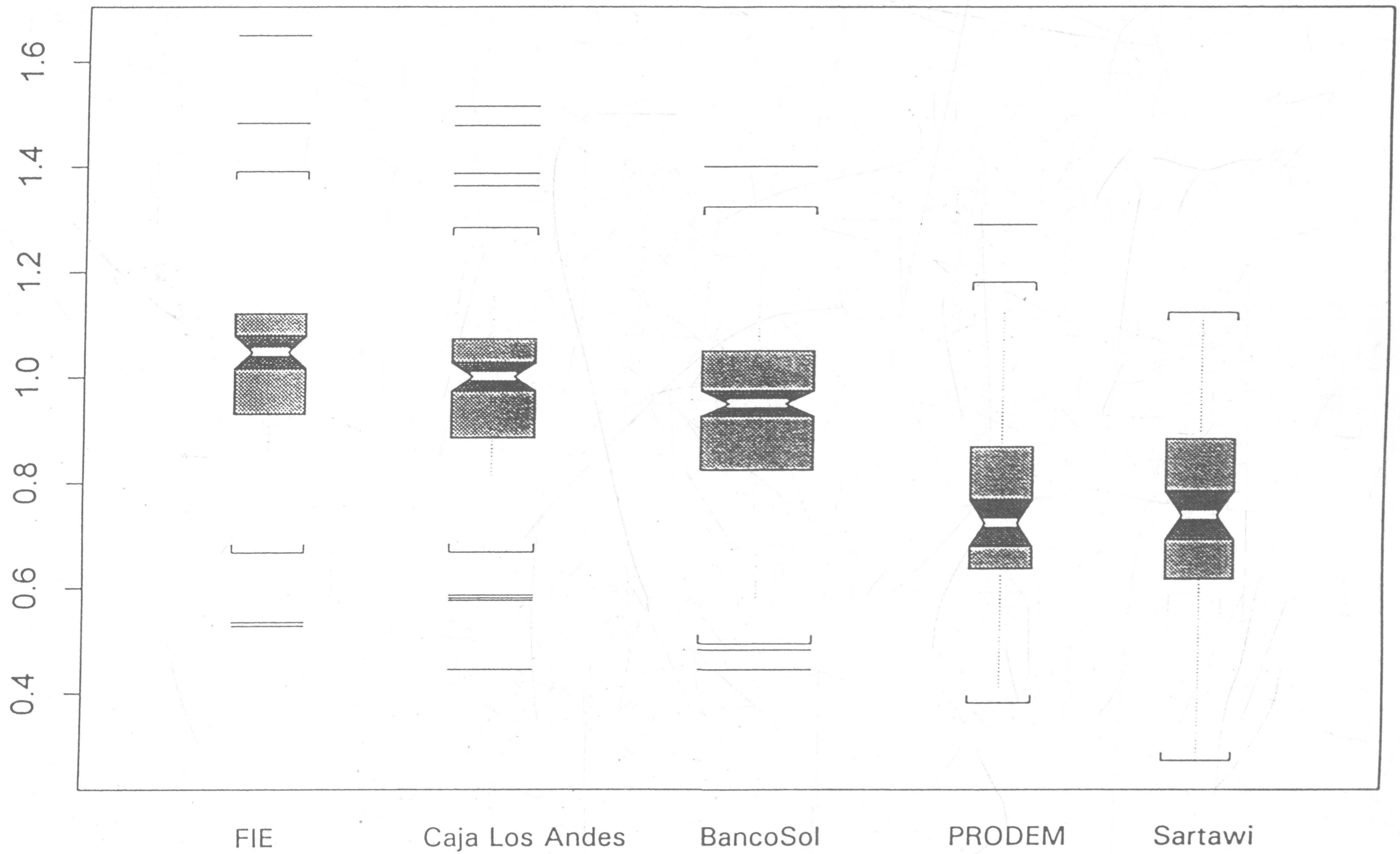
[6] Gonzalez-Vega *et al.*, (1996) further discuss the features of these three tiers.

Figure 2: Box and Whiskers Plot of Client Poverty Levels by Each Organization.



The whiskers beyond the boxes identify either the extreme values of the data or a distance equal to 1.5 times the IQD from the center of the distribution, whichever is less.[7] The client distributions can be ranked by the ranges defined by these whiskers. The greatest satisfaction of basic needs is achieved by some FIE clients, with the upper whisker reaching the highest value of the index. Interestingly, BancoSol's upper whisker reaches higher than for the Caja Los Andes' distribution. This is also true for PRODEM with respect to Sartawi.

Similarly, the lower whiskers for FIE and Caja Los Andes are located at a higher index value than for the BancoSol distribution. That is, the two individual lenders in urban areas are more reluctant to grant loans to poor people or these poor households cannot pledge the guarantees required by these organizations. BancoSol's outreach, as shown by its considerably lower whisker, stands out. The two rural organizations reach into even deeper poverty strata, particularly in the case of Sartawi.

V. Poverty Level and Loan Sizes

The data in Tables 2 and 3 report the average size of current and first-time loans granted to the clients by poverty category. The current loan was the one outstanding at the time of the interview, while the first-time loan was the initial one granted when the client became a borrower of the organization. For a new client, the current and first-time loan are the same.

Table 2. Average Size of Current Loan by Poverty Groups and Organization (1995 US Dollars).

	NON POOR			POOR			
Organization	Satisfied	Threshold	Total	Moderate	Indigent	Poorest	Total
La Paz - urban							
FIE	1,795	1,082	1,386	837	222	n.a.	772
Caja Los Andes	1,306	1,389	1,363	382	379	n.a.	381
BancoSol	710	654	673	468	679	n.a.	483
La Paz - rural							
PRODEM	302	270	288	325	204	n.a.	303
Sartawi	220	287	274	226	194	252	220

n.a. = Not applicable.

FIE stands out among the urban lenders by making loans averaging almost US$ 1,800 for clients whose basic needs have been satisfied. This organization then scales the amount back to just under US$ 1,100 for threshold clients. Caja Los Andes makes loans of roughly US$ 1,300 for both

7 In a Gaussian distribution 99.3 percent of the data will fall inside the whiskers. The horizontal lines beyond the whiskers represent outliers in the data.

satisfied and threshold clients compared to loans of about US$ 700 for BancoSol clients in these same two categories. The current loans of FIE were also much larger for moderately poor clients (about US$ 850) than for the other two urban lenders (US$ 400-450). The average size of current loans made by FIE show a consistent pattern of decreasing loan size as poverty increases. There is essentially no difference in the current loans made by Caja Los Andes to its moderately poor and indigent clients (about US$ 380), while the current loans made by BancoSol to the indigent are essentially as large as those made to the non-poor. Surprisingly, the moderately poor received the smallest BancoSol loans.[8]

No clear pattern in current loan sizes is observed for the two rural lenders. Loan sizes seem to be fairly uniform across the five poverty categories. In the case of Sartawi, in particular, this reflects the limitations of its lending technology, which allows for very little screening of individual clients. The conclusion suggested by these data is that individual loan sizes are more closely adjusted to poverty levels than are group loans. This is consistent with the observation that lenders making individual loans pay more attention to the income and debt repayment capacity of their clients than do group lenders. This, in turn, reflects some delegation of screening functions to group members.

The data presented in Table 3 tell a great deal about the organizations' first-loan policies. It is common practice among microfinance organizations to make similarly small first-time loans to all clients, and then increase loan size for repeat loans consistent with the clients' repayment performance. This practice of uniform initial loans seems to apply for the three group lenders, but not for FIE and Caja Los Andes, the individual lenders. That is, there is no consistent pattern in first-time loan sizes across poverty categories for BancoSol, PRODEM, and Sartawi. In contrast, first-time loans by FIE follow a consistent pattern of larger loans for wealthier clients, as was also noted for current loans. The results for Caja Los Andes are mixed but it is also generally true that wealthier clients receive larger first loans than poorer borrowers.[9] The lenders of individual loans apparently engage in more careful loan screening and rationing of loan sizes beginning with the very first loan than do the group lenders. The group lenders utilize peer pressure and peer monitoring in group formation and in loan size determination coupled with standard policies about first-time loans as substitutes for more intensive borrower screening for the determination of loans sizes.

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8 This result may reflect some outliers or errors in measuring poverty.

9 There is a positive but fairly weak correlation between the Index of Achievement and loan size. For current loans the Spearman correlation coefficients are : Caja Los Andes (0.40), FIE (0.32), Sartawi (0.23), BancoSol (0.14) and PRODEM (0.11). For first time loans, the coefficients are: Caja Los Andes (0.48), FIE (0.26), Sartawi (0.22), PRODEM (0.08), and BancoSol (-0.04).

Table 3. Average Size of First Loan by Poverty Groups and Organizations (1995 US Dollars).

	NON POOR			POOR			
Organization	Satisfied	Threshold	Total	Moderate	Indigent	Poorest	Total
La Paz - urban							
FIE	1,127	595	822	518	170	n.a.	481
Caja Los Andes	367	530	479	127	113	n.a.	125
BancoSol	126	125	125	172	121	n.a.	168
La Paz - rural							
PRODEM	145	178	159	178	123	n.a.	168
Sartawi	142	153	151	131	132	125	131

n.a. = Not applicable.

A comparison of the data presented in Tables 2 and 3 provides insights into an issue greatly debated among microfinance institutions, namely client graduation to larger loans. Although many poor borrowers are unlikely to make such rapid economic progress that they will demand much larger loans in the near future, some could have successfully borrowed and repaid a larger first-time loan than was granted or will be able to service much larger loans in the future. Lenders making individual loans claim to have an advantage in graduating clients to larger loans because they have accumulated information about individual borrowers and use a lending technology compatible with estimating debt repayment capacity (Schmidt and Zeitinger, 1996). Group lenders, in contrast, may face constraints of two types. First, they do not have an individual loan product to offer their best clients who demand larger individual loans to avoid the transaction costs and risks of group lending. Second, other members of a borrowing group may not want to be jointly liable for a larger than average size loan demanded by one of their group's members even if the lender is prepared to grant it. In this situation, group lenders face the loss of their best customers who may switch to individual lenders to satisfy their loan demand.

The loan data reveal that rural borrowers on average face the greatest constraints to increasing loan size. Their current loans are roughly twice the size of first-time loans and there is little difference in loan size by poverty group. Poor urban borrowers with Caja Los Andes face approximately the same situation. Poor and nonpoor BancoSol borrowers increase loan sizes at a much faster rate, but because of loan size policies there is relatively little difference across poverty groups. It appears to be harder for a particularly successful borrower to get a much larger loan in this situation. The nonpoor borrowers in Caja Los Andes, and especially FIE, appear to have the best prospects for significant increases in borrowing capacity, provided they can demonstrate the creditworthiness that the individual lending methodology requires. These results suggest there is some truth to the argument that group lenders face greater constraints than individual lenders in increasing loan sizes. This may place them at a competitive disadvantage in retaining wealthier clients as microfinance expands and competition increases among microfinance organizations.

VI. Implications

The five Bolivian microfinance organizations included in this study have made significant strides in supplying the urban and rural poor with financial services. Many household-enterprises considered unbankable by traditional financial institutions now have access to formal financial services, thanks to the innovations of these institutions. These organizations, however, are not reaching the poorest of the poor. It is highly debatable if they should.

There is great enthusiasm in the microfinance community about the positive economic impact for the poor of simply receiving a small loan. The verdict is still out on the issue, however, and there is a concern about who should bear the high cost of sorting the poor into those who can use credit effectively from those who need other forms of economic and social assistance.[10]

Furthermore, there is little consensus about the most effective way to deliver sustainable financial services to the poor. Should it be through specialized microfinance lenders that only reach the poorest, or should it be through organizations such as these five that serve a somewhat broader clientele and have the possibility of cross-subsidizing the cost of making smaller loans with income earned from larger borrowers? The innovations in lending technology introduced by these microfinance organizations have clearly pushed out the frontier of finance but there are clear limits as to how far down the poverty profile unsubsidized institutions can reach and the extent to which credit alone can really solve the tough problems faced by the poorest of the poor.

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[10] Hulme and Mosley, for example, argue that there are cases where the poorest clients are worse off because of receiving loans.

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