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An economic interpretation
of innovations
in rural microfinance

Sylvain LARIVIÈRE
Frederic MARTIN
Peter CALKINS

Une interprétation économique des innovations en micro-finance rurale

Mots-clés:
microfinance, innovations, stratégie, institution, rural

Résumé – Cet article introduit un cadre analytique qui permet de mieux comprendre les forces motivant les innovations en micro-finance rurale et ce, autant du point de vue des institutions de micro-finance que de leur clientèle de producteurs ruraux. Trois stratégies typiques d'innovation pratiquées par les institutions micro-financières sont analysées ici, celles-ci pouvant viser à la fois l'accroissement de leur viabilité financière et leur rayonnement auprès des populations pauvres. Une revue des études de cas fournit ensuite un aperçu de la fréquence d'adoption des innovations existantes, selon les différentes catégories d'institutions. Nous terminons sur une analyse théorique et empirique d'une innovation importante en micro-finance, le crédit de groupes.

An economic interpretation of innovations in rural microfinance

Key-words:
microfinance, innovation, strategy, institution, rural

Summary – This paper presents an analytical framework for understanding what drives innovations in rural microfinance both from the point of view of microfinance institutions and their rural producer clients. Three typical strategies of innovation towards greater viability and accessibility that are used by microfinance institutions are analyzed. A compendium of case studies provides an overview of the frequency of adoption of existing innovations by various types of microfinance institutions. Finally, an important innovation in microfinance, group lending, is analyzed both theoretically and empirically.

* IDEA International Institute, 962 rue Mainguy, Sainte-Foy, Québec, Canada G1V 3S4.

e-mail: slariviere@idea-international.org

** Centre de recherche en économie agroalimentaire (CRÉA), Université Laval, Québec, Canada G1K 7P4.

e-mail: frederic.martin@eac.ulaval.ca

peter.calkins@eac.ulaval.ca

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THE history of economic development theories during the second half of the 20th century has witnessed the halting excavation of layer after layer of artifacts essential to building a more systemic, flexible, and balanced vision of socio-economic development. Among the most recent objects unearthed is the role of microfinance in economic development, even if one must keep in mind that agricultural credit to small producers in developing countries has a long history. Over the last decade however, a consensus has emerged among governments, donors, and practitioners that microfinance constitutes a powerful tool for improving living conditions, reducing poverty and assuring social participation; and thus constitutes in many contexts the missing link for promoting generalized economic development. As part of the United Nations Millennium Development Goal of halving absolute poverty in the world by 2015, world leaders in January 1997 agreed to advance 21.6 billion to the 100 million of the world's poorest through micro-enterprise loans by 2005.

But a missing link is not the whole chain: the challenge is to find ways to increase access to financial services for microentrepreneurs and significant numbers of the poor while neither destabilizing fragile financial markets nor compromising the development of viable financial institutions. Innovations can help overcome the apparent conflict between financial sustainability and social outreach which fuels debate among many donors, practitioners, and academics (Bhatt, 1988; Von Pischke, 1996) and must be undertaken in full cognizance of the physical, economic, social, political, and cultural environment. This is of utmost importance for the rural sector the characteristics of which imply specific challenges for microfinance.

This paper presents an analytical framework for understanding what drives innovations in rural microfinance both from the point of view of microfinance institutions and their rural producer clients¹. Three typical strategies of innovation towards greater viability and accessibility that are used by microfinance institutions are analyzed. Moreover, a compendium of case studies provides an overview of the frequency of adoption of existing innovations by various types of microfinance institutions². Finally, an important innovation in microfinance, group lending, is analyzed both theoretically and empirically.

¹ This paper is a revisited and extended version of Larivière and Martin (1999).

² While these issues are as important or more important in the Second world of Eastern Europe, we shall limit our inquiry to the Third world nations of Latin America, Africa and Asia.

ANALYTICAL FRAMEWORK

Particularities of the financial sector

The financial performance of a microfinance institution (MFI) is determined by (1) expected return on client investment, (2) comparative advantage of the sectors in the loan portfolio, (3) availability of adapted technologies, and (4) the level of risk by client type and sector. Above these micro- and meso-factors, the macro-performance of the economy, political environment, and strength of the economy to withstand external shocks significantly affect sustainability and outreach. MFIs that efficiently provide a broad range of financial services to the target clientele are likely to have a positive impact on the real sector, expanding incomes and reducing poverty (Yaron *et al.*, 1997).

The role of innovation in this process has been well documented. Much of the theoretical literature focuses on the process by which choices among available technologies are made by individual producers and how changes in relative factor prices over time influence these choices. A major controversy is related to the issue of what factors stimulate innovative behavior of producers. Hayami and Ruttan (1970), and Ruttan and Hayami (1984) suggest that technological and institutional innovations are induced by relative factor prices.

The term innovation, however, can have several meanings. We characterize innovations in microfinance by any changes in the type of financial services offered, the banking technology, the strategic behavior of the institution, the institutional arrangements, or the structure of incentives that result in improved viability of the MFI. In this, we follow Solo (1954) and Ruttan (1959) in considering the entire range of processes resulting in the emergence of novelty in science, technology, management, and economic organization rather than the narrower Schumpeterian distinction between socio-economic innovations and scientific discovery.

Unlike real sector markets, financial markets are inherently imperfect in the sense that there is no certainty about the completion of a credit transaction. The financial economy and the real economy being closely linked as part of an economic cycle, a microfinance institution will never be viable if the economic activities which it finances are not in themselves viable. To have a significant impact on the real sector, innovations should contribute to the reduction of the lender's risk, as well as the per-unit transaction costs associated with the supply of financial services. The ultimate test for any microfinance institution is not simply whether it sustains itself, but whether it manages to promote the economic development of a region, sector or commodity chain.

We suggest that apart from the availability of technologies and relative factor prices, three factors play a crucial role in influencing rural microfinance innovations: (1) the riskiness of financial transactions, (2) the economic, social, political, juridical and cultural environment, and (3) donors' actions and conditionalities that simultaneously force the pursuit of outreach and sustainability.

Rural finance

In rural contexts, financial markets have further unique specificities which make the supply of financial services more costly (Binswanger and Rosenzweig, 1986). The population is spread over large areas; the environment is more risky; urban bias means underdeveloped infrastructure; product prices are either administered or strongly influenced by State agencies³; limited non-farm activities hamstring diversification; and high asymmetry of information is costly to reduce (Riedinger, 1994; Meyer, 1995; Yaron *et al.*, 1997).

MFI in this setting not only offer savings and microcredit services, they play a role of market intermediation by providing financial services to farm and off-farm individuals, households, and microenterprises (Sacay and Randhawa, 1995). But strong rural-urban linkages in developing countries make it difficult to restrict rural financial services to the rural sector. Small cities are strongly dependent on agricultural activities and rural MFIs offer financial services in urban areas to reduce risk and diversify their portfolio. Finally and most importantly, many microfinance programs say they target financial services to the "poor" without clearly specifying what is meant by the term: absolute, relative, etc. (CGAP, 1998).

The effects of financial services upon microenterprise performance and household living conditions depend on the services offered (consumption loans, working capital loans, investment loans, savings, and so forth), loan length (short run *vs* long run), reimbursement flexibility, and the individual to whom the loan was awarded (men *vs* women; non poor *vs* poor *vs* very poor). To sort out these methodological difficulties, Yaron (1992, 1994) suggests two fundamental criteria to evaluate the impact of microfinance interventions: financial sustainability and social outreach.

Sustainability is the generation of enough revenues (excluding subsidies) to cover the costs of all factors of production, lendable funds used by the institution, and contractual liabilities. Microfinance institutions may increase sustainability through a variety of screening and guarantee mechanisms, repayment incentives, and risk-reducing insurance or

³ For example, subsidized interest rates on agricultural loans and the canceling by government of farmer debt distort incentives.

equity participation (Hulme and Mosley, 1996). They can also enlarge average loan size to reduce transaction costs, or seek to diversify their revenue, e.g., by selling insurance products.

Outreach, on the other hand, aims at providing a wide variety of financial services to the poor traditionally ignored by the banking sector. Outreach seeks equilibrium between reaching the target clientele and meeting their demand for financial services (Yaron *et al.*, 1997). The quantitative dimension of outreach can be measured by the number of clients, average loan size, percentage of loans to clientele below the poverty line, or the percentage of female clients. Quality of outreach can be assessed by the range of services offered to the poor, the level of transaction costs levied on them, and the extent of client satisfaction (Gonzalez-Vega *et al.*, 1997).

But targeting imposes increasing costs of finding the poor; communicating with the eligible; and monitoring fraud, unless there are innovations in self-targeting. A poverty line must also be defined, and the heterogeneity of the poor captured (Larivière *et al.*, 1998; Calkins *et al.*, 1996).

Graphical representation

Let us first represent the supply side of the market for credit and why innovations are induced by MFIs. The pursuit of outreach and sustainability can stimulate both the adoption of existing innovations by an inefficient MFI and the creation of new innovations by an MFI already on the technical efficiency frontier (figure 1)⁴. An MFI with given lendable capital for a given potential clientele using a given banking technology wishes to maximize expected profits, which means profit per loan multiplied by the numbers of loans. In figure 1, viability (expected profit per loan) is portrayed on the vertical axis, and outreach (number of loans to the poor) on the horizontal⁵. Theoretically, the loan possibility curve (LL'), representing the short-run trade-off between financial viability and outreach for a given MFI, is negatively sloped because the MFI screens its potential clientele and ranks the borrowers in decreasing order of expected profit. Not everyone is creditworthy in the sense of being highly committed to and highly capable of repaying a lender (Von Pischke, 1996). Increasing transaction costs and risk result in a concave

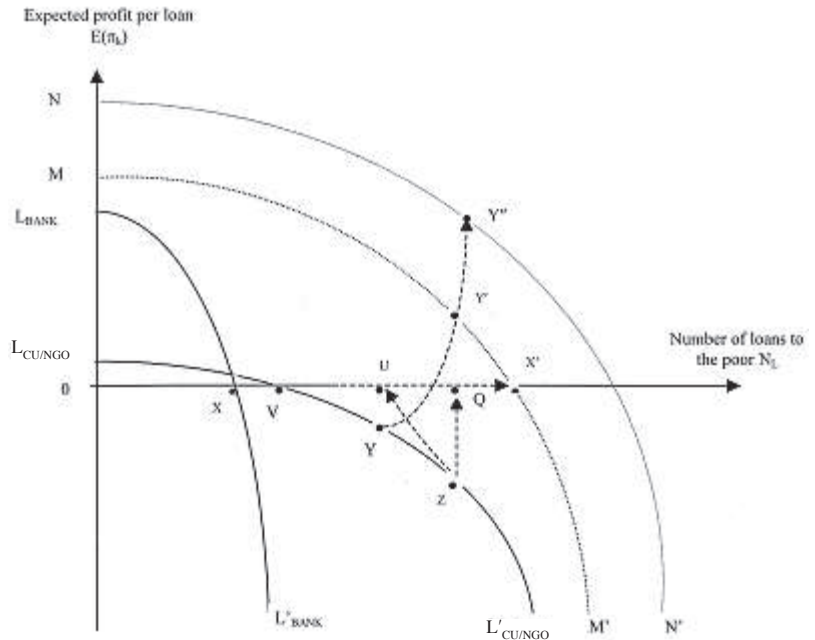
⁴ This does not preclude a currently not so efficient MFI from moving directly beyond the current efficiency frontier by developing new innovations.

⁵ Increasing the loan size to the poor is also another way of improving outreach. This is indirectly incorporated in the graphical representation as far as a larger loan size may be reflected in greater profit per loan (although the relationship between the two is not automatic). Moreover, once a loan reaches a certain size, the beneficiary cannot be considered poor any more. Therefore the vertical axis mainly reflects financial viability.

loan possibility curve. Two such loan possibility curves are portrayed in figure 1, one for a commercial bank ($L_{\text{Bank}} L'_{\text{Bank}}$) and one for a credit union or NGO ($L_{\text{CU/NGO}} L'_{\text{CU/NGO}}$). The shape of each loan possibility curve reflects the often encountered comparative advantage of each type of institution, *i.e.*, viability for the commercial bank and outreach for the credit union/NGO⁶. As lenders venture toward more outreach, bad debt losses and transaction costs are likely to mount (Ladman, 1984).

The MFI starts lending at point L and moves downward to the right along the curve LL' as it extends more loans. A number of MFIs choose one out of three following market positions based on their objectives and capabilities as well as on incentives provided by the market, government and donor environment. *Market positioning X*, typically followed by both commercial banks and savings banks, gives priority to profit over outreach. This corresponds to the standard profit maximization condition where, at the optimum, marginal profit equals zero. The loan portfolio in this case is $L_{\text{BANK}}X$, and total expected profit is the area OXL_{BANK} .

Figure 1. Typical MFI market positioning and strategies for innovation for greater viability and outreach



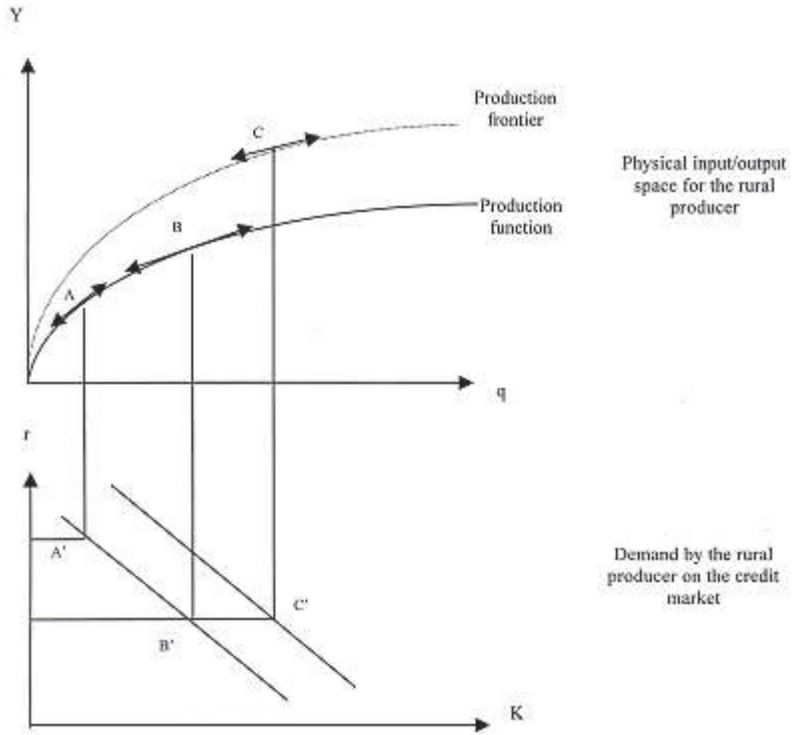
Market positioning Y, for a profit-oriented institution with a social mission, such as credit unions and well-managed NGOs permits better outreach than in the previous case. Total profits (area $OV L_{\text{CU/NGO}}$) are used to

⁶ There is significant heterogeneity amongst MFI's and the position of any specific MFI might not fit one of the suggested loan possibility curves. For example, several banks in Asia and Latin America have achieved a higher level of outreach than their credit union and NGO counterparts. However, these curves can be taken as representative of a number of MFI's.

cover losses (area VUY) for a loan portfolio $L_{CU/NGO}^Y$. This strategy has maximum potential effect on outreach with the financial institution still covering its costs. Finally, *market positioning Z*, used by many NGOs, maximizes outreach at the expense of viability. The loan portfolio is $L_{CU/NGO}^Z$. Total expected profit (area $OVL_{CU/NGO}$) is not enough to cover losses (area VQZ), which means that subsidies are necessary to maintain the institution.

In the short run, an efficient MFI may manage its portfolio to move along its loan possibility curve and choose various combinations of profit and outreach. However, it is well-known that the loan possibility curve of the majority of MFIs lies below the efficient loan possibility frontier MM' (figure 1). The desire to seize market opportunities, the competitive pressure, and well-designed donors' conditionalities for financial and technical assistance create incentives for the MFI to adopt existing innovations and approach the frontier MM' . Moreover, the most innovative MFIs may shift the production frontier to NN' .

Figure 2.
The impact of microcredit innovations on the demand for credit and production level of the rural producer



Y: Production level
 q: Input quantity
 r: Interest rate
 K: Capital quantity

It is important to underline that the adoption and even more the creation of innovations may impact on costs as well as on revenue. The MFI

uses a decision criterion to adopt an innovation by equating the marginal cost of the innovation to the expected marginal value product resulting from this innovation. By construction, any point in the quadrant $N_L OE(\pi_k)$ implies that the expected profit per loan is positive and marginal value profit exceeds marginal cost, and therefore that the expansion path is sustainable.

As for market positioning, strategies selected by MFIs to either adopt existing innovations or design new innovations to improve viability and/or outreach will depend partly on the objectives of the constituencies and expertise of the MFI, but also to a large extent on (i) market opportunities and incentives, (ii) economic and financial policies and regulations set up by the government and (iii) donor policies. Figure 1 also indicates four such innovation strategies to improve viability or outreach or both, without sacrificing the other criterion as much as possible. Strategy 1, “downscaling” from X to X', involves moving away from traditional banking technology and client-institution relationships to adopt innovations from the microfinance industry, e.g. moving from a collateral-based loans approach administered from the office to a trust and personal guarantee approach conducted mainly in the field. This strategy is adopted by more and more commercial banks attracted by marketing opportunities to expand outreach to poorer clients.

Strategy 2, “upgrading” from Z to Q, typifies an MFI undergoing institutional transformation from a subsidy-dependent NGO to a viable institution under the pressure of donor conditionality. Improving viability implies adopting existing innovations in terms of screening tools, repayment incentive schemes, savings mobilization, etc. For some NGOs however, moving toward greater viability may involve sacrificing several poor clients in the short run, *i.e.* moving from Z to U (strategy 3).

Strategies 1 and 2 can be combined, moving from Y to Y', to improve outreach and viability simultaneously. This strategy 4 implies balanced progress along an expansion path toward the frontier. Expansion will often exhibit an increasing slope as it becomes harder and harder to identify existing innovations to better reach the poor while increasing profit.

Finally, an MFI may develop new innovations to decrease costs or increase revue (e.g., moving from Y' to Y'') and push out the long run loan possibility frontier from MM' to NN'. Credit analysis and monitoring may raise expected profit as long as increases in expected gross income (from reduced default) outweigh the increased cost of innovation.

Let us now present the demand side of the credit market for working capital and investment loans. The production function of a typical small rural producer having agricultural and non agricultural activities is represented in figure 2. Initially, the producer has only access to limited and expansive credit from informal sources such as traders and moneylenders. It is therefore optimal for the producer to produce at point A and to demand a quantity A' of credit. With the introduction of microcredit, com-

petition increases on the credit market, making credit more accessible and cheaper for the producer. In the short run, assuming access to input and output markets, the latter will increase production through working capital loans, moving along his production function (point B) and his credit demand schedule (point B'). In most cases, the production function of small producers lies below the production frontier. In the medium and long run, assuming adequate offer of extension and other training services, the producer may adopt existing technological innovations to move closer to the production frontier (point C), thereby shifting his demand for credit outward (point C').

EMPIRICAL EVIDENCE ON INNOVATIONS

Typology of microfinance innovations

What might be an innovation for a MFI far away from the loan possibility frontier might already seem *passé* for a MFI on the frontier. The typology of innovations presented below concerns the vast majority of MFIs, which are not yet on the loan possibility frontier. Five categories of innovations in the area of rural microfinance are identified⁷:

Product innovations refer to the financial services offered by MFIs to individuals or groups. Innovations may include new financial services tailored for specific needs, more flexible reimbursement schemes, and a wider product mix. Such innovations promote advancement towards the right in figure 1, that is, wider and deeper outreach.

Technological innovations imply improved technologies used in delivering these financial services. Innovations include collective lending, screening tools, alternatives to traditional collateral, selective access mechanisms, repayment incentive schemes, mobile banking, monitoring and evaluation systems, and training programs. Technological improvements help move the MFI mainly upwards in figure 1 by improving efficiency and hence sustainability.

Strategic innovations refer to innovative development strategies followed by MFIs. Innovations may include strategic market development planning, strategic financial planning toward financial sustainability, and information sharing systems among MFIs. Such improvements imply increasing outreach along the horizontal axis of figure 1 without sacrificing sustainability.

⁷ The first three categories relate to the MFI and imply increasingly encompassing changes in the delivery of financial services to its clientele. The fourth category, institutional arrangement innovations, includes innovations both at the micro MFI level and at the meso financial sector level. The fifth category of innovations concerns both MFIs and donors (for a more detailed inventory of microfinance innovations, see Larivière *et al.*, 2000).

Institutional innovations may involve changing the MFI legal status, creating new institutions or alliances, and changing MFI governance rules. Institutional innovations at the level of the financial sector may involve creating or modifying financial regulation of MFIs, and financial sector development. While, at the macro level, the main concern is sustainability; at the micro level, MFIs often seek changes in institutional form to increase both short run outreach and long-term sustainability.

Donor incentive innovations are mechanisms available to donors to improve the outreach and sustainability performance of MFIs in figure 1 and thereby the return on their aid. These mechanisms, such as setting up a MFI rating system, tying assistance to an incentive and conditionality package, and support to training, should never distort market signals. Otherwise, they paradoxically create conditions that are ultimately unsustainable.

Case experiences

The available empirical evidence to test the above theory is very limited so far, especially when one wants to go beyond the standard few microfinance success stories (such as Hulme and Mosley, 1996; CGAP, 1998; Yaron *et al.*, 1997; Thillairajah, 1994; Gurgand *et al.*, 1994) while it is estimated that there are at least 5,000 MFIs world-wide. Even in those cases, not much is said on innovations, and hardly anything on the quality of innovations. The paper attempts to draw insights on innovations from a review of literature on case-studies chosen on the basis of the availability of information and representativity for a diversity of institutional and geographical categories. It is important to emphasize the difficulties involved in doing such an exercise, including the limited size (28 MFIs) and non random nature of the sample, the challenge of putting together scattered and variously formatted information on innovations, the dependence on the judgment of case study authors who may have not mentioned some innovations, and finally the rapidly changing situation which may modify this analysis.

Table 1 identifies the innovations that were mentioned in 28 case studies from a literature review, classifies them according to the above typology, and assesses their relative importance. Each innovation was scored from 0 (absent) to 5 (high) according to use frequency by a given MFI category (banks and saving banks that follow strategy X, credit unions and financially viable NGOs that follow strategy Y, and most NGOs that follow strategy Z).

Given the limited sample size, vertical and horizontal total scores should be interpreted cautiously to reflect more comparative magnitudes than absolute values. Despite these limits, the data shed new light on rural micro-finance:

Table 1. An empirical overview of innovations in rural microfinance

	Strategy X Banks and savings banks n=6	Strategy Y Credit Unions and viable NGOs n=9	Strategy Z Most NGOs n=13
Number of MFIs			
Technological innovations (maximum grade: 45)			
Banking technology		1	3
Screening tools	3	2	1
Alternatives to traditional collateral	1	2	3
Selective access mechanisms	1	2	1
Group lending and other repayment incentive schemes	2	5	2
Mobile banking	1	1	2
Monitoring and evaluation systems	3	1	
Training programs	2	3	3
Total technological innovations	13	17	15
<i>% technological innovations by MFI category</i>	<i>(35%)</i>	<i>(42%)</i>	<i>(58%)</i>
Product innovations (maximum grade: 15)			
New specific financial services	3	3	3
More flexible reimbursement schemes		1	2
Wider product mix	4	3	
Total product innovations	7	7	5
<i>% product innovations by MFI category</i>	<i>(19%)</i>	<i>(18%)</i>	<i>(19%)</i>
Strategic innovations (maximum grade: 15)			
Strategic planning/market development	1	2	1
Strategic planning/financial sustainability	5	2	
Information system on clients	4	2	
Total strategic innovations	10	6	1
<i>% strategic innovations by MFI category</i>	<i>(27%)</i>	<i>(16%)</i>	<i>(4%)</i>
Institutional arrangement innovations (maximum grade: 15)			
MFI legal status change		2	2
Creation of new institutions and alliances	1	2	1
MFI governance rules change		2	1
Total institutional arrangements innovations	1	6	4
<i>% institutional arrangements innovations by MFI category</i>	<i>(3%)</i>	<i>(16%)</i>	<i>(15%)</i>
Adoption of donor incentive innovations (maximum grade: 15)			
MFI rating system	3	2	
Incentive and conditionality package	1		
Support to training	2	1	1
Total donor incentive innovations	6	3	1
<i>% donor incentive innovations by MFI category</i>	<i>(16%)</i>	<i>(8%)</i>	<i>(4%)</i>
General total innovation score (maximum grade: 105)	37	39	26
	<i>(100%)</i>	<i>(100%)</i>	<i>(100%)</i>

Sources: in addition to the bibliographical references listed in this article, this table integrates various compendia of case studies (Hulme and Mosley, 1996; CGAP, 1998; Yaron *et al.*, 1997; Thillairajah, 1994; Gurgand *et al.*, 1994); list of MFIs surveyed: 1) Africa: CREDO Burkina Faso; CRS Senegal; DECSI Ethiopia; Nyèsigiso Mali; KREP Kenya; LPRB Ghana; MMF Malawi, SACA Malawi; COOPEC Togo; Credit Unions Cameroon; Banques Populaires Rwanda; Crédit Solidaire Burkina Faso; Crédit Mutuel Bénin; 2) Latin America: CAM Salvador; FINCA Equator; FUNDAP Guatemala; Banco Agrícola Dominican Republic; CRECER Bolivia; 3) Asia: BRI-UD Indonesia; BAAC Thailand; Grameen Bank Bangladesh; AKRSP Pakistan; ASA Bangladesh; BRAC Bangladesh; KMBI Philippines; NIRDHAN Nepal; SANASA Sri Lanka; SHARE India.

- Adoption and creation of innovative microfinance services seem still limited (the maximum total grade was 38 over a possible 105);
- Technological innovations, notably by NGOs (both viable and non viable), tend to dominate the other four categories of innovation. They represent between 35 and 58% of the total innovation calculated score per MFI category;
- Strategy X MFIs appear to innovate relatively more than Strategy Y and Z MFIs in strategic innovations (27%) and donor incentive innovations (20%) as a % of their total innovation score;
- Strategy Y MFIs tend to be relatively balanced in terms of the types of innovations they introduce;
- Strategy Z MFIs seem relatively stronger in terms of technological innovations (58%) as many NGOs have successfully extended outreach, often thanks to heavy donor subsidies; they are also attempting to improve institutional arrangements (15%);
- Future challenges, by in order of priority, are: (1) institutional innovations, (2) donor incentive innovations, and (3) strategic innovations.

The evidence suggests no best banking technology (Hulme and Mosley, 1996; Larivière *et al.*, 1998). The difference between success and failure hinges upon (1) the micro, meso, and macro environment; (2) governance quality within the MFI; (3) detailed design of financial services and banking technology; and (4) the quality of MFI human resources.

Nor is microfinance a panacea for eliminating poverty (Von Pischke, 1996). Poverty may cover a wide variety of situations and causes, and microfinance is not well adapted to help solve all kinds of poverty (Larivière *et al.*, 1998). For the sake of illustration, let us consider four kinds of poor that one may encounter in developing countries.

In some countries, **environment-poor entrepreneurs** have access to a minimum level of human and financial capital, but cannot seize economic opportunities and develop their microenterprises because of unfavourable market and policy environments. The solution then lies more in reducing bottlenecks in productive activities and creating economic, political and regulatory incentives to improve economic governance and reduce market failure than in microfinance.

Financial-capital-poor entrepreneurs, poorer than the former, lack financial capital to take advantage of economic opportunities, but possess a minimum level of human capital and entrepreneurial skills. Microfinance can really help this type of poor by loosening constraints on capital, opening the door to investment, facilitating consumption over time, and meeting emergency needs for liquidity. Beyond the microcredit facet, microfinance reduces poverty for this group by offering appropriate savings mechanisms. Only the accumulation of savings by the MFI later enables it to offer microcredit on a long-term basis. The MFI can assist the significant segment of the poor who save by

safely and productively looking after their savings for future emergencies or significant consumption or investment expenditures.

Financial- and human-capital-poor entrepreneurs combine very restricted access to financial capital and low human capital. Microfinance can help effectively this group if combined with non financial services, in particular training services. This does not mean that the MFI has to offer those services, which might be better offered by a specialized training institution.

Non-entrepreneur poors, the poorest of the poor, are unable to take advantage of economic opportunities even when financial services are accessible because they lack financial and human capital, physical strength, health, or entrepreneurial skills. Their priority is to ensure the day-to-day survival of their household. Most MFIs fail to reach this category well (Hulme and Mosley, 1996). Evidence from Bolivia, considered a success in innovative microfinance, confirms that MFIs reach only a small percentage of the poorest households (3% in cities and 17% in rural areas) in their quest for viability over the long term (Navajas *et al.*, 1998).

The most effective way of helping non-entrepreneur poors is by creating a social safety net of minimum living standards. MFIs cannot provide the poor with these social services, but rather facilitate their access to economic opportunities. For sustainable development and poverty reduction, analysis and action must distinguish financial services of an economic character from social services.

It is important to note that these categories are not life sentences. With effective economic and social policies and programs, including access to financial services, a non-entrepreneur poor can graduate into a capital-poor entrepreneur which himself can evolve into an environment-poor entrepreneur which, in turn, can become a non poor rural manager. Improved outreach to the poor depends in part upon adequate encouragement of the less poor to save and invest. Outreach is thus not simply a numerical concept but a qualitative combination and transformation of various client populations over time.

AN EXAMPLE OF INNOVATION: THEORY AND PRACTICE OF GROUP LENDING

As of now, considerable research has been done into the theory and empirical success of group lending, an innovation in microfinance that would allow a MFI to move upward and outward (toward the Northeast) in figure 1. In this section, we will explore and compare six recent articles that assess how group lending can not only help financial institutions viably lend to more households, but more generally, pull them out of poverty by providing credit to those with little land or other collateral and put them in a position to use their labor, provide education for children and financial assets to women, and ultimately raise their levels of food consumption.

Theoretical background of group lending

Ghatak and Guinnane (1999) underscore the significant potential advantages of group lending over lending to individuals. These include promotion of screening, monitoring, state verification, enforcement of payment, and an emergency fund for death or disaster in addition to the regular group fund. Contrary to individual loans, group loans can exploit social norms, group size, and the level of mutual acquaintance. German group lending, which dates from the 1850s, first showed how people with no assets for collateral could be included in groups to receive and repay loans. More generally, group size can be good for repayment if it increases the number of possible states in which some borrowers can repay. What is important is that group lending provides better screening through self-selection. It therefore reduces 'adverse selection', which arises when the lender has asymmetric information, in other words, no way to observe characteristics of the borrower that may make them unwilling or unable to repay the loan.

But there are several implicit dangers involved in lending to groups. First, group size may turn into a negative factor when the default of too many borrowers leads even those who would have repaid to default. Next, the feeling of social ties among borrowers must be strong enough to support feelings of group solidarity. Third, the program must appear sustainable over time; evidence from Nepal shows that borrowers will default even if they could repay the loan if they think the program is ending. A final danger of group lending is that if the entire group becomes blacklisted as uncreditworthy, recriminations and bad feelings in the community may last for many years into the future.

Besley and Coate (1995) enrich this analytical framework by exploring inter-member dynamics through game theory. They show that the expected gain of successful group members may actually make it profitable for them to pay the loans of defaulting members, provided defaulters are in the minority. In addition, joint liability harnesses 'social' collateral (the willingness to maintain face), making borrowers more willing to pay, which is especially desirable where sanctions of the MFI itself are too incomplete to force repayment. Social sanctions deprive the defaulting borrower of non-monetary advantages (including prestige, dignity and goodwill). Penalty levels are fixed in relation to the harm caused by the defaulter to the repaying partner.

Impacts of group lending

Recent work has updated successful models to avoid the one-size-fits-all approach (Simanowitz and Walter, 2002). For example, the rethought Grameen II model endeavors to include many poorer potential clients through increased flexibility of products. Sustainable credit organisa-

tions – e.g., the Grameen replica SHARE in India, the Nyesigiso Credit Union in Mali and CRECER in pervasively poor Bolivia – have already demonstrated that it is possible to alleviate poverty, thus pushing the $L_{CU/NGO} - L'_{CU/NGO}$ curve of figure 1 to the right. The clients of all three programs are exclusively women, often in groups of 7 to 8, and poverty has been slashed, in one case from 64% to 7%. Mandatory meetings include education on health, nutrition, self-esteem and management. Approaches are not market-led, but social-led, poverty-focused. The strongest impact of SHARE was to promote asset ownership, which helped clients move upward in poverty categories.

Microcredit has thus been demonstrated to be more effective than subsidies or savings for the poor if it provides them with lump-sums of adequate size to deal with opportunities, basic consumption, life-cycle needs, crises and emergencies. Another positive economic impact is the feeling of well-being and improved business skills that come from successful repayment. Microcredit also leads to improved food security and ability to avoid prolonged periods of hunger through income stabilisation. There is also a gain in social capital, particularly the empowerment of women. Significantly, institutional financial self-sufficiency is compatible with reaching the poor, according to 114 MFIs reported in the *Microbanking Bulletin*.

The search for key performance indicators

For poverty-focused microfinance to move forward, the industry needs transparent reporting on social outreach as is already the case for financial sustainability, in particular who is being reached, who stays in the program, and for how long. New measures of poverty outreach other than loan size are needed to develop good practice guidelines. To fill this gap, Wydick (1999) has measured the level of significance of specific factors that enable group lending to actually repair market failure. Evidence from the maximum likelihood estimations of the FUNDAP in western Guatemala, a Grameen clone, shows that group pressure is more vital than either peer monitoring or social ties in reducing moral hazard and promoting repayment. Indeed, group lending can be used even where there are no social ties among borrowers. Specifically, to reduce moral hazard, the most significant measures of group pressure are willingness to pressure others to pay, the feeling that applying sanctions is not difficult, and the feeling of moral obligation to help repay the group's loan. The peer monitoring on knowledge of weekly sales of other members and the fact that peers are in the same line of business, and closer distance among members' businesses are also significant variables. Social ties also usually require that co-borrowers be of the same sex. To improve the repayment rate, peer monitoring is most effective through closer distance among members' businesses. In urban areas, however,

MFI performance criteria differ: social ties paradoxically require co-borrowers of different sex and group pressure grows as a function of the number of members.

Lending to women

Pitt and Khandker (1998) explore lending to women as a possible way to improve the poverty-reducing power of group lending. They applied a maximum likelihood semi-experimental framework to 180 households in 87 villages in Bangladesh in 1991-2, who participated in Grameen Bank, BRAC and BRDB programs, plus non-participating households and control villages. Credit to women contributes to the MFI's viability since women have 1.6 times higher repayment rates than men. Credit to women was also a significant determinant of household expenditure, non-land assets held by women, male and female labor supply and boy's and girl's schooling. Credit to men significantly improved only boys schooling and, more marginally, men's labor supply. Unfortunately, current demand for credit is lower for women, especially young women where there is a husband or other adult male in the household.

Morduch (1998) extends Pitt and Khandker's analysis by comparing means by category of eligibility, land size and season. The data confirm good loan targeting: the probability of being judged eligible goes down as the size of one's own farm and that of the neighbors' goes up, whether or not the borrowers are male or female. There are positive impacts on land purchase, employment stability and risk reduction. Unfortunately, however, the program is costly, child education and household food consumption do not improve in eligible households, and the education of daughters is noticeably lower for eligible households in program villages versus control villages.

CONCLUSION

The adoption of microfinancial innovations in rural areas is still limited, partly as a result of higher inherent transaction costs and risks. The proposed analytical framework and empirical evidence reviewed both conclude that the debate should not be framed as a choice between outreach and sustainability. To resume Von Pischke, today's sustainability will lead to tomorrow's outreach. This paper points out that the reverse is also true: today's outreach will lead to tomorrow's sustainability. The challenge for an MFI is to seek a dynamic equilibrium beginning in the short run to include in its portfolio new clients in various categories (e.g., non poor, environment poor, and capital poor) in appropriate proportions to just above the point where the profit level would not ensure sustainability, so that in the long run these clients can become dynamic savers and investors.

No single banking technology emerges as better in terms of innovations and the path to innovation is strongly influenced by the MFI environment, in particular regulations and incentives. On the whole, technological innovations represent a major share of microfinance innovations. Institutional innovations, donor incentive innovations, and strategic innovations represent major challenges of the future in rural microfinance. Governance is of paramount importance, but so are the transformation of NGOs into formal financial institutions, financial legislation for various MFI categories, strategic alliances between various financial intermediaries and other institutions helping microenterprises, and the development of risk capital markets.

An increasingly competitive environment, as well as donor incentives, should induce MFIs to innovate and increase outreach and sustainability. In exchange for their technical and financial support, donors looking for better economic and social returns on aid monies have the obligation to press MFIs to develop and implement innovations to improve sustainability and outreach. These conditions for innovation they impose do not imply cumbersome or rigid interference in MFI management, but rather an agreement on a progression toward established performance objectives in terms of the quantity, quality, and efficiency of financial services provided to the poor in a sustainable manner.

Finally, more research should be conducted in this area, in particular on social outreach indicators and on how incentives and regulations shape innovation paths for various banking technologies, economic and social contexts and target groups. We hope this paper will encourage application of the framework proposed above to help redress the dearth of reliable, comparable information and data on innovations in rural microfinance.

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