



**POVERTY &
ECONOMIC POLICY**
RESEARCH NETWORK

**PMMA Working Paper
2008-11**

**Business Training for Microfinance
Clients: How it Matters and for Whom?**

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May 2008

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Abstract

We measure the impact of a business training program for female microentrepreneur clients of a group banking program in Peru. Using the credit with education model, we assigned clients randomly to either treatment or control groups. Treatment groups received thirty to sixty minute entrepreneurship training sessions during their normal weekly group banking meeting. These lasted between one to two years. Control groups remained as they were before, meeting weekly with the group banking program solely for making loan and savings payments. We find that intention to treat (ITT) led to higher repayment and client retention rates for the microfinance institution, improved business knowledge, and practices. More importantly, average business sales revenues also increase while revenues fluctuations were reduced. In addition, we find significant heterogeneity in the exposure of clients within the treatment group. Treatment on the treated (TOT) estimates, obtained using ITT as instrumental variable, show substantially larger effects.

Keywords: microfinance, business training, adult education

JEL Codes: C93, D12, D13, D21, I21, J24, O12

This work was carried out with financial and scientific support from the Poverty and Economic Policy (PEP) Research Network, which is financed by the Australian Agency for International Development (AusAID) and the Government of Canada through the International Development Research Centre (IDRC) and the Canadian International Development Agency (CIDA). The authors also wish to acknowledge financial support by the Henry E. Niles Foundation, the Ford Foundation, and the US Department of Labor. The project would not have been carried out without the vision and commitment of the FINCA-Peru team, from La Morena, Aquiles and director Iris Lanao; Yoliruth Núñez, and all the credit officers in Ayacucho and Lima. Special recognition is also due to the institutions that participated in the design of the training materials, Freedom from Hunger, with Kathleen Stack, Atinchik, with Mario Lanao. The authors wish to thank Li Xiaohua and Pramila Krishnan for their valuable comments. Finally, the authors thank Adriana Barel, Jonathan Bauchet, Marcos Gonzales, Lauren Smith, and Paola Vargas for excellent research assistance. Any remaining errors or omissions are the sole responsibility of the authors.

1. Introduction

The microfinance sector grew substantially over the past two decades with the hope of helping reduce poverty. Yet, existing programs and institutions have not been able to deliver on that promise (Morduch, 1998; 1999). Now, it is increasingly clear that the microfinance revolution may not be enough for the task and additional innovations are required.

Microfinance practitioners around the world are actively pursuing innovations that can help enhance their contribution to the welfare of their clients. A strong trend in these innovations is the combination of microfinance with other non-financial services, including business training (Dunford, 2002). This trend has caused tension in the development microfinance community with questions about whether lenders should specialize in financial services only, or should integrate non-financial services into their programs (MkNelly, Watetip et al. 1996). The idea that specialization is good is certainly not new, but in this setting it has yet to be tested whether the economies of scope outweigh the risks of having credit officers simultaneously become “teachers.” Aside from losing focus on the lending and savings activities, providing too detailed business advice may lead to higher default if the borrower then perceives the lender as partially responsible for any business changes that do not succeed.

Business training programs being implemented for small and micro-enterprises in developing countries are strikingly heterogeneous, including hands-on training, technical assistance and/or basic principles based on best practices by successful microentrepreneurs, but little is known about their impact on economic outcomes for the poor¹. Here, we focus on an intervention that aims to teach entrepreneurship by transmitting recognized best business practices to female microentrepreneurs, with facilitators avoiding to offer advice on specific actions as they could later be blamed if something goes wrong. However, we could imagine that entrepreneurship is not a matter of a specific process being replicated, as it is a matter of the intuition of the microentrepreneur about the when and how of using the intervention, or the determination in doing it, as these are abilities that can be hardly taught.

In this paper, we evaluate the marginal impact of adding such entrepreneurship training to a microfinance program in Peru. We do that by implementing a randomized

¹ See, for instance, Middleton, Ziderman and van Adams (1993).

control trial to compare outcomes between those who receive financial services only and those who receive business training as well as financial services. The study was conducted with FINCA-Peru, a microfinance institution (MFI) that sponsors village banks for poor, female microentrepreneurs in Lima and Ayacucho in Peru. We randomly assigned pre-existing lending groups to either treatment or control. Treatment groups received the training as part of their mandatory weekly meetings. Control groups remained as they were before, a credit and savings-only group. We conducted a baseline survey before the intervention and a follow-up survey after between one and two years. We find strong benefits for the microfinance institution in the form of higher loan repayment and client retention. We also find improved business processes and knowledge by the clients, an increase in business sales and a reduction in the fluctuations of business revenue.

In addition, we analyze the way the program was delivered. We analyze the level of client participation in the training module and explore the factors that explain large differences in the exposure to treatment. We find that the main factor is length of the permanence as bank client and not the lack of interest in training or lack of satisfaction with the course in itself. We estimated treatment on the treated (TOT) estimates by using the intention to treat (ITT) as instrumental variable, and find TOT estimates are significantly larger than ITT ones.

This paper is organized in seven sections including this introduction. Section 2 presents the nature of the intervention and basic hypothesis. Section 3 explains the experimental design and section 4 details the data collected and empirical strategy. Section 5 presents the results of the impact analysis based on the ITT estimates, while section 6 analyzes heterogeneity in exposure to treatment among clients in treatment banks and discusses the TOT estimates. Finally, section 7 concludes.

2. The intervention and its expected effects

We measure the impact of adding business training sessions to a microfinance program for female microentrepreneurs in a group banking program in urban and rural areas in Peru. The goal of the business training intervention is two-fold: to improve business outcomes and overall welfare for clients and to improve institutional outcomes for the microfinance institution. Stronger business may demand more services, and clients may be less likely to default if they are satisfied (either due to higher cash flow or a stronger feeling of reciprocity). But the two goals do not need to reinforce each other. If business increases enough that clients “graduate” to larger formal sector

banks, providing the business training could lead to lower client retention for this organization.

FINCA-Peru is a small, non-profit, but financially sustainable, MFI that has been operating in Peru since 1993. FINCA-Peru's mission is to improve the socio-economic situation of the poor and empower women through the promotion of the village-banking methodology. By providing them with working capital to increase inventory and invest in their businesses, FINCA expects to increase the earned income of its clients, primarily poor women with no collateral. In addition to providing credit, FINCA teaches its clients to save by requiring weekly or monthly savings deposits that correspond to the size of the loan the client has taken out and by encouraging additional voluntary savings for which they receive market interest rates. FINCA further empowers clients by giving them the opportunity to run their banks through their rotating participation on the village-bank board.

FINCA has operations in three particularly poor districts of Lima, and in two Andean provinces, Ayacucho and Huancavelica. As of June 2003, FINCA sponsored 273 village banks with a total of 6,429 clients, 96 percent of which were women. The total savings of its client base was US\$1,630,823 with US\$821,172 in outstanding loans. FINCA members, particularly those in Ayacucho, are relatively young and have little formal education. FINCA clients each hold, on average, US\$233 in savings whereas the average loan is US\$203, with a recovery rate of 99 percent. FINCA charges sufficient interest to be self-sustainable. Its sustainability indicator (Total income / Total expenses) was 99 percent in 1998; 105.5 percent in 1999; and 132.2 percent in August, 2000.

The business training materials were developed through a collaborative effort between FINCA, Atinchik,² and Freedom from Hunger (FFH).³ Although the content of the training was similar in both locations, Lima and Ayacucho, they were organized and presented differently given the considerable differences in educational levels and in

² Atinchik, a nine-year old firm, specializes in the generation of training materials in business management for micro-entrepreneurs. Atinchik had previously used similar training materials in a project for the World Bank.

³ Since 1995, FFH has provided technical assistance to eighteen MFIs in Asia, Africa, and Latin America with its program *Credit with Education*, a combination of microcredit and educational services. Working with independent local partners, FFH provides training in microfinance products, MFI capacity building, and adult education in health and business development. Its business education curriculum was developed through market assessments using individual surveys, focus groups with key informants, pilot-testing, and the feedback of clients and staff.

learning processes⁴. In Lima, clients received handouts and did homework, whereas in Ayacucho, teaching relied more heavily on visual aids and was sometimes held in Quechua. The training materials in Lima were organized in two modules. The first module introduced attendees to what a business is, how a business works, and the marketplace. Clients were taught to identify their customers, competitors, and the position of the business in the marketplace and then learned about product, promotional strategies, and commercial planning. The second module explained how to separate business and home finances by establishing the differences between income, costs, and profit, teaching how to calculate production costs, and product pricing. See appendix A for more details on the content of the business training.

Training began in October, 2002 in Lima and in March, 2003 in Ayacucho and was expected to last 22 weekly sessions in total. Each bank timed the beginning of the training with the beginning of new loan cycles, so not all banks began training at the same time. Ayacucho's meetings are weekly, whereas in Lima some groups meet weekly and others meet bi-weekly.

The goal of the program is to teach entrepreneurial skills. However, if the entrepreneurial "spirit" is a fixed characteristic, teaching an individual to engage in activities similar to a successful entrepreneur may not actually lead to improved business outcomes. The training aims to improve basic business practices such as how to treat clients, how to use profits, where to sell, the use of special discounts, credit sales, and the goods and services produced. These improvements should lead to more sales, more workers, and could eventually provide incentives to join the formal sector.

In addition to impact on the client, the training could have some indirect effects on the institution. The link between loan size, savings and repayment, and the financial sustainability of the MFI is straightforward. However, there are other important variables such as client retention or dropout rates. First, high dropout rates increase the efforts required to achieve economies of scale (Copestake, 2002). On one hand, recruiting costs may be high especially in competitive markets. Also, village banks' clients increase their loan size and savings with tenure so that high dropout rates make it more difficult for the MFI to increase the portfolio and reduce unit costs. Second, high

⁴ Among FINCA's Lima clients, the literacy rate is 98 percent, the majority has a secondary education and 40 percent have some post-secondary schooling as well. On the other hand, in the Ayacucho region, almost 70 percent of the FINCA clients did not finish secondary school and approximately 15 percent are illiterate.

dropout rates may be associated to clients' unhappiness with the services provided. Since training increases the length of the regular meetings by thirty to sixty minutes (meetings without education typically last forty to sixty minutes) client retention can be negatively affected. In turn, the training, if valued by the clients, could generate more client loyalty, which in turn could increase client retention and repayment (due to reciprocity, not improved business outcomes).

3. The experimental design and the monitoring of the intervention

We evaluate the effectiveness of integrating business training with microfinance services using a randomized-control trial in which pre-existing lending groups were assigned randomly to control and treatment groups. Of the 140 village banks (3,265 clients) in Ayacucho, 55 were assigned to a mandatory treatment group (clients had to stay through the training at their weekly bank meeting⁵), 34 were assigned to a voluntary treatment group (clients were allowed to leave after their loan payment was made, before the training began), and 51 were assigned to a control group which received no additional services beyond the credit and savings program. In Lima, of 99 FINCA-sponsored banks (1,326 clients), 49 were assigned to mandatory treatment and 50 were assigned to control (there was no "voluntary" treatment group in Lima). The randomization was stratified by credit officer; hence each credit officer has the same proportion of treatment and control groups.

We monitored the attendance at the weekly meetings and the training sessions. On average, training sessions in mandatory training banks had an 88 percent attendance rate while attendance in voluntary banks was 76 percent.⁶ Several unexpected events were observed during implementation. First, some treatment banks dropped the trainings if they were having problems such as high default and drop out rates. In these cases, they would often enter a restructuring phase that involved reinforcement of the traditional FINCA training about good repayment practices and discipline. The training session was also skipped during the first and last meeting of each cycle, and when the meeting was paired with a group activity such as the celebration of birthdays and regional and religious holidays. In these cases, the session would be postponed until the following meeting. There were other cases in which the

⁵ Fines were applied for absence or tardiness, and could result in expulsion from the bank.

⁶ Attendance in voluntary banks gradually slowed from an average of 80 percent at the beginning to 70 percent in the last two cycles observed. The number of training sessions also dropped over time.

clients and credit officers decided that they needed more time to fully grasp the information offered in one session. In some cases, it became a normal practice for banks to agree to spend an extra meeting reviewing the material of the previous training session.⁷

These practices not only delayed the completion of the training materials, but also caused heterogeneity in exposure to training across banks. In Lima, for example, the average bank advanced 3.5 sessions per loan cycle over the 12-meeting cycles. However, it was common for banks to complete five training sessions in the first loan cycle, and slow to an average of 2.6 training sessions per cycle over time. As a result, after at least 24 months since the launch of the training, only half the banks had reached the 17th session out of a total of 25 programmed sessions. The empirical analysis will first compare the village banks assigned to treatment to those assigned to control, irrespective of how well they adhered to the training program (the ITT estimate). This is important not only to avoid a selection bias, but also because the delays experienced here are normal for credit with education programs. Had the training been adhered to more strictly, we would be estimating the impact of a treatment that is stronger than is normally implemented. Nevertheless, after we analyze the determinants of the level of exposure by clients assigned to treatment groups, we do analyze TOT estimates, obtained by using ITT as an identifying variable.

4. Data and methods

This evaluation uses three key data sources: FINCA financial-transaction data, a baseline survey before the randomization results were announced, and a follow-up survey up to two years later.

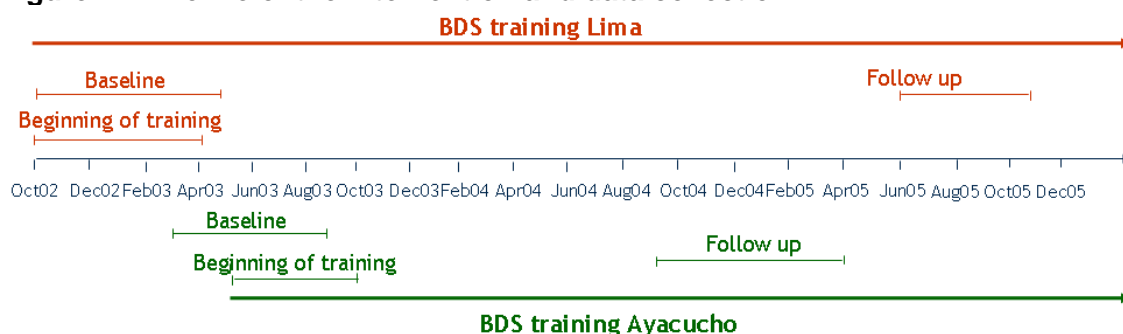
Financial-transaction data are from FINCA's database, which contains the reports of all the transactions made by each bank client at every scheduled meeting since 1999. It includes information on the loan cycles, broken down by loan payment, interest, mandatory and voluntary savings, fines for tardiness, and contributions to cover default of other members. The database also includes some socio-economic characteristics of the clients, such as age, education, and main business or economic activity, registered when the client first joined a FINCA-sponsored village bank.

The baseline and follow-up surveys included a variety of questions on the

⁷ In the case of Lima, such revisions often implied using the sessions to work in groups, with the support from the credit officer, on the assigned homework.

socio-demographic characteristics and other general information about the client’s household and business. Outcomes can be divided into four categories: (1) institutional outcomes; (2) business processes, knowledge and savings practices (i.e., testing whether the specific practices taught in the training were adopted); (3) business outcomes; and (4) household outcomes, including empowerment in decision-making and child labor (the Lima follow-up survey included questions related to the time children between six and fifteen years old dedicate to domestic work and school activities). The full list of outcome variables and their definitions are included in appendix table 1.

Figure 1: Timeline of the intervention and data collection



In treatment banks, the baseline survey was given immediately before the bank began the training. Figure 1 above shows the timeline of these components of the study for Ayacucho and Lima. Most baseline surveys were completed just before or after the client’s weekly meeting although, due to time constraints, some of them had to be applied at their home or place of business, after scheduling an appointment with the microentrepreneur⁸. In Ayacucho, we used four surveyors for 3,265 surveys, while in Lima, we used six surveyors for 1,326 surveys.

Seventy-six percent of the clients in the baseline survey were reached and surveyed for the follow-up survey. For the 62 percent of the clients interviewed in the baseline who were no longer members of a FINCA-sponsored community bank when the follow-up surveys began, we located them using addresses collected in the baseline survey or, in some cases, asking neighbors or FINCA members. However, some clients had moved away, were impossible to locate, or refused to be interviewed. In total, we interviewed 83 percent of remaining FINCA members, and about 72 percent of those who had dropped out of FINCA during the intervening period. As table

⁸ The ratio of surveys applied right after the periodic meetings of the village banks to those in the household/business is similar in Lima and Ayacucho.

7 shows, there was a survey response bias in Lima but not in Ayacucho, where control group individuals were more likely to complete the survey. This may be due to the training itself taking a long time, so individuals were less willing to spend the extra time to complete the survey. Also, among those who dropped out, the response rate is higher for the control group than the treatment group⁹.

Table 1 shows some key demographic characteristics and financial-transaction history of the members of control and treatment groups before BDS training began. These results verify that the random assignment produced observably similar treatment and control groups. At the time of the randomization, data were available on prior repayment rates, the average loan size, and the average savings size. The remaining variables were not observed at the time of the randomization, but are also similar across treatment and control groups, as expected.

To obtain the ITT estimate of the impact of the business training program, we use the first-difference (FD) or the double-difference (DD) estimators, depending on whether we observe the outcome of interest only in the follow-up, or in both the baseline and follow-up survey. The FD estimator is obtained by comparing the levels of the outcomes variables between clients in the treatment and control groups. In turn, the DD estimator is obtained from comparing changes over time in a particular outcome variable between treatment and control groups. As long as the control and treatment groups were similar ex-ante, which was assured through the randomization, we can argue that both estimators can provide an unbiased estimate of the impact of the ITT with a business training program on a particular outcome variable. In practice though, the inclusion of baseline controls in randomized experiments tends to increase precision of the estimates of treatment effects¹⁰. Thus, in this study we only report FD estimates when we failed to collect information on the outcome at baseline, which is often true for the variables associated with business practices and knowledge.

Econometrically, the ITT-FD estimator is obtained by estimating the following linear regression:

$$Y_{ij} = \alpha + \beta D_j^T + \gamma X_{ij} + \varepsilon_{ij} \tag{1}$$

⁹ This attrition, if non-random, may bias the estimated treatment effects presented here for business practices and results. However, notice that institutional outcomes are not affected as for them we use institutional data.

¹⁰ See Duflo, Glennester and Kremer (2007), section 4.4. The same is true for the inclusion of other covariates that have large effects on the outcome.

where Y_{ij} denotes an outcome variable for client i in bank j after the treatment, D_j^T is a dummy variable that takes the value one if the client belonged to a treatment bank, and X_{ij} denotes a vector of individual characteristics that we include in some of the specifications¹¹. ε_{ij} denotes the error term which, since we randomize banks rather than clients, is assumed to be independent across banks but not necessarily within them¹². Thus, β measures the difference between the treatment and control groups in the outcome Y after the treatment, and is a consistent estimate of the average impact of being assigned to a treatment group on the outcome variable Y .

If the outcome variable is a dummy variable, then we estimate a probit model and use the marginal effect of D_j^T as the estimate of the impact of business training on outcome Y . In the model with interactions, the marginal effect for those with $X = 0$ is obtained by estimating $[\hat{\Pr}(Y = 1 | D = 1, X = 0) - \hat{\Pr}(Y = 1 | D = 0, X = 0)]$. For those clients for whom $X = 1$, the marginal effect of treatment on those clients with $X = 1$ is obtained with the following expression: $[\hat{\Pr}(Y = 1 | D = 1, X = 1) - \hat{\Pr}(Y = 1 | D = 0, X = 1)]$.

The ITT-DD estimator comes from the following expression:

$$Y_{ijt} = \alpha + \beta_1 Post_t + \beta_2 D_{jt}^T + \beta_3 Post_t D_{jt}^T + \gamma X_{ij0} + \varepsilon_{ijt} \quad (2)$$

where $Post_t$ is a binary variable equal to one if the observation corresponds to the post-treatment time period. Then, β_3 is the double difference estimator of the program's impact on outcome Y .

Since we find high heterogeneity in actual exposure to treatment, we also include the TOT effects, which tells us the local average treatment effect (LATE) on a specific indicator of having actually received the business training (Imbens and Angrist, 1994) due to random assignment. To obtain the TOT estimate of the impact of business training, we estimate equations (1) and (2), but replace the treatment dummy by another that indicates actual exposure to treatment by individual clients in randomly

¹¹ The set of covariates included variables such as the clients' age and education, the number of loans received from FINCA, business type and size, and branch location. Since treatment was assigned randomly, we would expect the insertion of these covariates to reduce, without bias, the variance of the estimated effect.

¹² Thus, we use the Huber-White covariance matrix estimator to obtain the standard error of our coefficients of interest.

assigned treatment banks¹³. Since actual treatment is not randomly assigned, we use ITT as an instrumental variable to identify these effects. We report the TOT results with two thresholds: one at zero and another one at 8 sessions. In the latter case, we consider as untreated any individual that attended less than 8 sessions, of a total of 22.

5. Impact of Business Training: ITT Estimates

We divide the analysis into three categories of outcome variables:

- (1) institutional outcomes;
- (2) business processes; and
- (3) business outcomes.

5.1 Institutional results

We found important effects in the institutional outcomes, as loan repayment and client retention are higher among treatment groups (Table 2). We looked at the repayment history of clients in treatment and control groups since training started and found that the former had three percentage points higher probability of maintaining a clean repayment history, that is, that they never finished a cycle with a debt larger than their cumulative savings. One explanation for improved repayment would be the increase in business income to cover loan payments, and as we shall see below, such impacts were also detected.

With respect to client retention, 61 percent of the clients left FINCA banks at some point since the training started but one out of four of those returned to FINCA before the follow-up survey. We find the business training reduces these exits by five percentage points although no effect was found for permanent dropouts. We infer from the retention results that clients place high value on the training they receive, causing them to avoid temporary exits, remaining with the program longer than controls. On the other hand, treatment clients are more likely to cite the length of weekly meetings as a factor in dropping out of the program (Appendix Table 2). So while in net the business training is good for client retention, the program can expect to lose some clients due to lengthier meetings.

Another possible explanation for the increase in client retention for the

¹³ In the case of DD estimates we actually replace specification (2) with another one that includes the change observed between the baseline and the follow-up.

treatment group is the improvement of clients' business outcomes, leading to higher repayment capability. The increase in client retention could be driven by the reduction in default. We examine whether the treatment led to more dropout with default as well as dropout without default, and although the treatment effect is larger in reducing dropout without default, when disaggregated neither is significant statistically. Similarly, we do not find any effect on the amount of solidarity discounts, which correspond to the joint liability within the bank in case of individual default problems.

The improved default and client retention have strong implications for the profitability of the institution. Although FINCA faces negligible defaults rates, that is not because individual businesses do not face problems, but is rather the result of the group liability mechanism and the use of their cumulative savings. Thus, our finding is that those individual problems are reduced as a result of business training, which would be connected to the increased sales reported below. Institutionally, improved repayment contributes to the sustainability of banks as members do not suffer as much the burden of the joint liability mechanism that characterizes the village bank methodology.

Improved client retention enhances the sustainability of FINCA by reducing the recruiting costs required to increase the scale of its operations and by allowing clients to sustain their accumulation of savings and their gradual increase in loan sizes. We do not find changes in loan size and accumulated savings, but these results may be explained in the short run by increased sales and the implementation of innovations in the clients' businesses.

5.2 Business skills and practices

As mentioned above, the training materials were designed to transfer best business practices to FINCA clients, with practical examples to ease understanding but without including specific advice to clients' business problems. Hence, we want to check whether clients captured the key concepts and implemented corresponding changes in their businesses. In the follow-up survey we asked clients questions about key elements of the training, such as business knowledge, marketing strategies, what to do with profits and record-keeping (see Appendix Table 1 for the full list of survey questions and variable definitions).

Table 3 shows the results on these outcome measures. Training participants demonstrated greater business knowledge, answering more questions correctly (10

percentage points, which is 0.07 standard deviations). The greater knowledge displayed by the treatment group did in fact translate into better business practices, though only in limited fields. The training increased the likelihood that individuals reinvested profits in their business by four percentage points (0.08 standard deviations), maintained sales records for their business by three-four percentage points (0.07 standard deviations), and maintained withdrawal records from their business by seven percentage points (0.17 standard deviations). Lastly, individuals were asked to identify problems of their businesses, and to name changes or innovations they have planned and implemented to their businesses over the prior year. We found that those in the treatment group were five percentage points more likely to report having implemented changes to improve their businesses.

5.3 Business results

The improved business knowledge and reported changes in business practices indeed led to higher business revenues. Table 4 presents the results on the level and variation in sales, profit margins, as well as the employment within the enterprise. Sales in the month prior to the surveys were 16 percent higher. When looking at the variation in sales, we find the largest effect for sales in a bad month, which is 28 percent higher among treatment groups compared to control groups. We infer from this latter result that the training has helped clients by enhancing their ability to identify strategies to reduce the fluctuations in their sales. For instance, they could have diversified the goods and services they offer or have identified clients with a different seasonality in their purchases. The improved cash flow also may have reduced their seasonal demand for credit helping to explain the lack of impact of the training on loan size in Table 2.

For retail business, no change in profit margin was observed on the most common product sold. Due to time and reliability constraints, we only asked about profit margin for the main product. However, unless the profit margin was reduced on other products despite not decreasing on the main product, the increased overall revenue implies an increase in profits. For service businesses, since no change in labor was observed, the increased revenue should roughly translate to increased profits.

6. Impact of Business Training: Heterogeneous Exposure to Treatment and the TOT estimates

As indicated above, the ITT estimates reported in section 5 are consistent estimates of the average impact of business training on those randomly selected to treatment, considering normal implementation circumstances that include delays and individual dropouts, which generate heterogeneous exposure to treatment. However, it would still be interesting to obtain the impact of business training on clients actually treated, as it would more closely reflect what would happen if we are able to adjust delivery mechanisms in such a way that all clients are homogeneously exposed to full treatment. In the following section, we describe the heterogeneity in exposure to treatment by individual clients, and then report the TOT estimates on business knowledge, practices, and results.

6.1 Heterogeneous exposure to treatment

Not all the clients randomly selected to treatment groups were equally exposed to business training. This heterogeneity came as a result of individual and/or bank factors. In this section, we analyze the level of exposure to treatment by female microentrepreneurs in treatment banks. Second, we proceed to identify the factors that could explain individual's level of exposure.

Bank factors can help explain heterogeneity in exposure to training modules. As mentioned above, some treatment banks dropped the training even before starting because they were having problems such as high default and drop out rates. Progress was also delayed because training sessions were skipped the weeks of the first and last meeting of each cycle, and when the meeting was paired with a group activity such as the celebration of birthdays and regional and religious holidays. There were other cases in which the clients and credit officers decided that they needed an extra session to fully grasp the information offered in one particular session. Thus, in Ayacucho, only 7.5 percent of the banks in the mandatory treatment group have already completed the program (27 sessions). Moreover, 60 percent of the banks in the voluntary treatment group have not received any session of the training program¹⁴. Nevertheless, excluding banks that never started with training modules, we find a significant but small difference in the number of sessions received in mandatory and voluntary treatment groups.

¹⁴ Only 5.5 percent of the banks in the mandatory treatment group did not start the training at all.

While the first group completed 23 sessions on average, banks in the voluntary group reached only to the 19th session of the program. In Lima, 20 percent of the banks have already completed the 25-session training program. On the other hand, 14.3 percent of the banks did not start the training at all. Excluding non-starting banks, the rest of the treatment banks in Lima have, on average, completed 16 sessions.

Banks could agree to take measures to delay progress of business training, but individuals could also take decisions to skip attendance to training sessions. The first obvious measure is dropping out from the bank entirely, but attendance can also be managed while remaining as a bank member¹⁵. In Ayacucho, 34 banks were randomly assigned to a group in which treatment was voluntary. With training sessions occurring after the ordinary payment meeting, individual clients were allowed to leave if they wanted to. Even in the case of banks for which training was mandatory, we received information that clients could skip training by arriving late to the payment meetings or by nominating a representative to make their payments. Considering these bank and individual factors, the measurement of exposure should be made at the individual level, summarizing information from both bank progress and individual attendance rates while the person was a member of a treatment bank. Graph 1 and 2 show the distribution of this measurement for Ayacucho and Lima, respectively.

Next, we try to identify the characteristics of the banks and individuals that determine high exposure to business training. For that, we first classify individuals in two groups according to their level of exposure to treatment. In Ayacucho, any client that had less than 8 training sessions was classified as having had low exposure to business training. The threshold was set at 12 sessions for Lima clients. With that classification, we run a probit model to evaluate the determinants of high exposure to treatment. When using a pooled sample, client's tenure by the beginning of the training has by far the biggest effect influencing the level of exposure: clients that stay in FINCA between one and two years after the intervention was launched are 49 percentage points more likely to be highly exposed to the treatment¹⁶. Moreover, clients that stay in the program for more than two years increase their probability of being highly exposed by 70 percentage points. Bank characteristics by the beginning of training also show a

¹⁵ See in Table 2 that 45 percent of the clients present at the moment the intervention took off dropped out of the village bank, and have not returned by the time of the follow up. An additional 15 percent left the bank for one or two cycles before returning.

¹⁶ These pooled regressions are not reported here but can be made available to the reader upon request.

significant but small effect. Apparently, clients in banks with serious default problems are less likely to progress in the training modules while clients in mandatory treatment banks (Ayacucho) are more likely to be highly exposed to the training.

In Table 5 we run separate regressions for locations and type of treatment in Ayacucho. It is clear that the highest effect of client's permanence appears in Lima, where banks were more likely to progress in the modules. On the other hand, mandatory training is the most important factor determining exposure in Ayacucho. The analysis of the determinants of high exposure confirm the suspicion that actual treatment is not randomly assigned, but endogenously determined by characteristics of the individuals and the banks in which they participate. With these results in mind, we next show the TOT estimates of the impact of business training on the business knowledge, practices, and results of those that were actually exposed to treatment.

6.2 TOT estimates of the impact of business training

We obtain TOT estimates by running regressions associated to equations (1) or (2) on actual exposure to treatment, using ITT as an instrumental variable to correct for the endogeneity of the decision to receive training for those initially assigned randomly to the treatment group. Table 6 presents the results on selected outcomes of using two thresholds to define actual exposure¹⁷. In the second column, we considered as actually treated any client that had attended at least one training session. In the third column, we raise the threshold to eight training sessions.

We find that TOT estimates are substantially larger than ITT ones for those variables that were found to have significant ITT effects. For instance, the impact of business training on repayment rises from 0.03 to 0.04 and becomes significant when considering as actually treated those clients that had at least eight training sessions. The effect on the use of profits for business growth rises from 0.04 to 0.06. In the case of business knowledge index, the effect of business training rises from 0.1 to 0.18. Also, business sales during bad months increased by 33 percent for those clients that had at least eight training sessions, an effect almost twice as large as the obtained with the ITT estimate.

We interpret these results as a confirmation of the robustness of the ITT effects,

¹⁷ Minor differences between ITT estimates reported in table 6 and those in tables 2-4 correspond to the fact that in the former we use as dependent variable the change between baseline and follow-up, rather than specification (2).

and also as an indication that business training could have even larger average effects if delivery mechanisms were adjusted so that all clients can be fully treated. As a local average treatment effect, we cannot assure that those effects would be equally large for those that were not actually exposed to the training. However, it would be interesting to test the impact of this kind of training if delivery mechanisms can indeed be so adjusted.

7. Conclusion

The impact evaluation performed for this study offers encouraging news to those that focus on the promotion of the growth of small and micro-enterprises in developing countries. The transmission of key successful business practices to female microentrepreneurs with access to credit can help both the client's business and the microfinance institution. Training led to better business practices and increased revenues and profits. Clients report engaging in some of the exact activities being taught in the program: separating money between business and household, reinvesting profits in the business, maintaining records of sales and expenses, and thinking proactively about new markets and opportunities for profits. The implementation of these strategies seemed to have helped clients increase business income, mainly by smoothing fluctuations between good and bad periods.

Also, we find positive impacts on repayment rates and client retention for FINCA, the lender. Clients appear to be more satisfied with the additional services that the training program offers them (as indicated by the higher client retention rates). Thus, this was a successful intervention also from the perspective of the MFI. Although we do not have access to specific cost estimates for the implemented business training module, Freedom from Hunger has found that the marginal cost to organizations is around 6 to 9 percent of total costs. The marginal revenue will come from the increased client retention and repayment rates (no change in loan sizes was observed). The fixed cost of managing a village bank is high, but the variable cost of each individual client is quite low. The improved client retention rate (sixteen percent improvement in client retention) generates more increased revenue than the marginal cost of providing the training. The benefits of improved client repayment are more difficult to estimate, since the true benefit to FINCA comes through lower enforcement costs (the eventual default

is virtually nonexistent). Thus, this seems like a profitable undertaking for FINCA¹⁸.

With respect to the demand for business training, we find that there was significant heterogeneity in exposure to treatment. Although the main factor behind these differences had to do with the decision to remain as a FINCA client, client retention has been a problem for many village banks around the world, and the training actually reduced dropouts. Some other bank characteristics were important though, in particular that the bank had serious default problems. In that sense, it is plausible to assume that our intention to treat measure captures the way these “credit with education” programs are normally delivered within village banks.

Overall, we suggest that this program evaluation exercise is a necessary one. Moreover, further experimentation is needed to confirm the replicability of some of the weaker results found here in other contexts. Larger effects on those actually treated suggest the plausibility of further exploring the average impact of this kind of training if delivery mechanisms are adjusted so that all clients can be fully treated. Another key issue to explore is whether credit officers are the appropriate agents through whom we want to transfer business skills to microfinance clients as the economies of scope may be overturned by the advantages of specialization. Finally, it is also clear that extensions of this analysis should include the analysis of heterogeneity of treatment effects and further exploration of potential biases associated to non-random attrition.

¹⁸ An additional warning should be made regarding this statement as likely FFH estimates have not included opportunity costs for the time of the credit officer which could have even more profitable alternative occupations.

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Table 1: Ex-ante differences between clients by location

	Treatment	Control	Difference	T-stat
Tenure in FINCA (Cycles)				
Lima	5.2	5.2	0.0	0.030
Ayacucho	6.0	5.8	-0.2	-1.220
Years of Education				
Lima	9.9	9.7	0.2	0.946
Ayacucho	8.1	8.1	0.0	0.009
Age				
Lima	42.6	42.3	0.3	0.529
Ayacucho	36.3	36.5	-0.2	-0.510
Loan Size (external account) ^{a/ b/}				
Lima	293	308	15	1.09
Ayacucho	173	167	-6	-0.85
Accumulated Savings ^{a/ b/}				
Lima	174.9	185.2	-10.3	-0.703
Ayacucho	360.4	348.6	11.7	0.577
Default Rate ^{b/}				
Lima	0.04	0.03	0.01	1.126
Ayacucho	0.02	0.02	0.00	0.604
Drop out Rate ^{b/}				
Lima	22.5	23.3	-0.8	-0.37
Ayacucho	22.8	23.4	-0.6	-0.47
Last week sales (log)				
Lima	7.4	7.4	0.0	-0.071
Ayacucho	6.3	6.3	0.0	-0.086
Number of total workers				
Lima	1.2	1.2	0.0	-0.202
Ayacucho	0.8	0.8	0.0	0.793
Number of paid workers				
Lima	0.4	0.3	0.1	0.894
Ayacucho	0.2	0.2	0.0	0.442
Ex-ante high interest in training				
Lima	0.6	0.6	0.0	0.446
Ayacucho	0.4	0.4	0.0	0.797

Source: FINCA-Peru historical database and baseline client survey.

Averages were calculated for the cycle before the BDS training program was started.

^{a/} In US \$.

^{b/} In the last cycle before the beginning of training

Table 2: Impact of training on institutional outcomes - OLS, Probit

Dependent variable ^{a/}	Mean & S.D. of dependent variable	Nº of clients	Treatment impact without covariates	Treatment impact with covariates ^{b/}
<i>Double difference estimate reported</i>				
Loan size	212.19 (207.73)	3170	2.35 (13.692)	8.75 (12.911)
Cumulative savings	304.45 (411.31)	3170	-11.53 (15.839)	-4.37 (16.027)
<i>First difference estimate reported (no baseline data available)</i>				
Repayment	0.80 (0.40)	3170	0.03 (0.022)	0.03* (0.020)
Dropout				
Permanent/Temporary Dropout	0.61 (0.49)	3170	-0.04 (0.026)	-0.05* (0.026)
Permanent Dropout	0.45 (0.50)	3170	-0.02 (0.025)	-0.03 (0.026)
Fines	0.03 (3.20)	2785	0.10 (0.130)	0.12 (0.133)
Solidarity discounts	0.44 (5.71)	2785	-0.22 (0.435)	-0.19 (0.403)

Each coefficient reported in the table is from a separate regression. * significant at 10%; ** significant at 5%; *** significant at 1%. Standard errors clustered by village bank in parentheses. Marginal effects reported for probit specifications (repayment, client retention, and all dropout variables).

^{a/} See Appendix table 1 for a definition of each dependent variables.

^{b/} The covariates include location (Ayacucho or Lima), business activity, business size, age, schooling and number of FINCA loans received by the client.

Table 3: Impact of training on business practices - OLS, Probit

Dependent variable ^{a/}	Mean & S.D. of dependent variable	N ^o of clients	Treatment impact without covariates	Treatment impact with covariates ^{b/}
<i>Double difference estimate reported</i>				
Tax formality	0.15 (0.36)	2981	0.01 (0.012)	0.01 (0.012)
Paid fixed salary to self	0.04 (0.20)	2815	-0.02 (0.019)	-0.02 (0.019)
Keeping records of:				
Sales	0.29 (0.45)	2903	0.03* (0.020)	0.04* (0.022)
Withdrawals (Lima only)	0.11 (0.31)	677	0.06 (0.042)	0.06 (0.043)
Number of sales locations	1.07 (0.32)	3424	0.01 (0.026)	0.01 (0.026)
Level of diversification				
Number of income sources (Ayacucho only)	2.33 (0.53)	2394	-0.02 (0.038)	-0.02 (0.038)
Allows sales on credit	0.59 (0.49)	3424	-0.002 (0.015)	-0.002 (0.015)
<i>First difference estimate reported (no baseline data available)</i>				
Keeping records of payments to workers	0.23 (0.57)	2992	0.005 (0.015)	0.004 (0.013)
Business knowledge index	3.32 (1.40)	3427	0.10* (0.060)	0.08 (0.055)
Started new business	0.14 (0.35)	3427	-0.02 (0.012)	-0.02 (0.012)
Level of diversification				
Importance of main product	2.31 (0.70)	2221	0.01 (0.034)	0.01 (0.035)
Profit used for business growth	0.67 (0.47)	3427	0.04** (0.020)	0.04** (0.019)
Thinking of keeping business safe when taking money from it	0.26 (0.44)	3427	-0.002 (0.016)	-0.0002 (0.015)
Proportion of clients who faced problems with business (Lima only)	0.65 (0.48)	1033	0.02 (0.034)	0.02 (0.034)
Proportion of clients who:				
Planned innovations in their businesses	0.65 (0.48)	3427	0.02 (0.019)	0.03 (0.018)
Executed innovations in their businesses	0.39 (0.49)	3427	0.05** (0.020)	0.05** (0.019)

Each coefficient reported in the table is from a separate regression. * significant at 10%; ** significant at 5%; *** significant at 1%. Standard errors clustered by village bank in parentheses. Marginal effects reported for probit specifications (tax formality, profit used for business growth, thinking of keeping business safe when taking money from it fixed salary, keeping records, started new business, allowing sales on credit and proportion of clients who faced problems/planned innovations/executed innovations).

^{a/} See Appendix table 1 for a definition of each dependent variables.

^{b/} The covariates include location (Ayacucho or Lima), business activity, business size, age, schooling and number of FINCA loans received by the client.

Table 4: Impact of training on business results - OLS

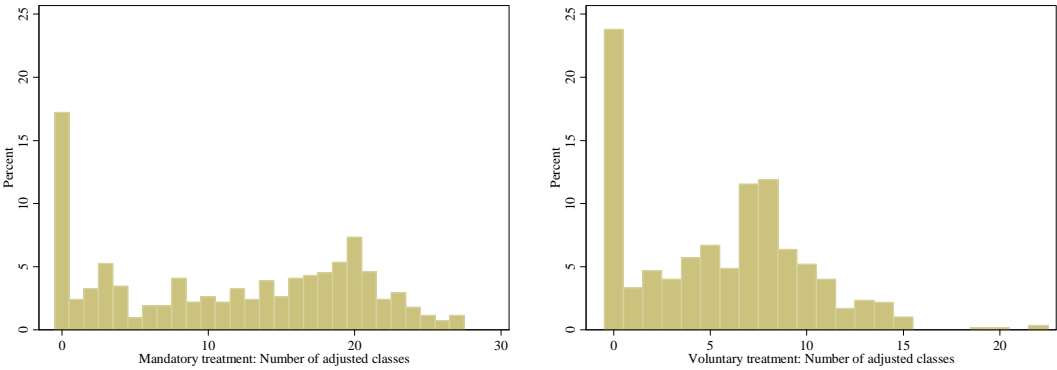
Dependent variable ^{a/}	Mean & S.D. of dependent variable	Nº of clients	Treatment impact without covariates	Treatment impact with covariates ^{b/}
<i>Double difference estimate reported</i>				
Sales				
Last month (log)	6.60 (1.56)	2806	0.16 (0.078)	** 0.16 ** (0.078)
Good month	7.92 (1.26)	2806	0.00 (0.051)	0.00 (0.051)
Normal month	7.16 (1.19)	2806	0.10 (0.052)	* 0.10 * (0.052)
Bad month	5.92 (2.25)	2806	0.27 (0.099)	*** 0.27 *** (0.100)
Difference good-bad month	2.01 (2.02)	2806	-0.26 (0.103)	** -0.26 ** (0.103)
Number of workers				
Total	1.99 (1.46)	2956	0.01 (0.065)	0.01 (0.065)
Paid workers, not family members	0.26 (1.04)	2954	-0.04 (0.046)	-0.04 (0.046)
<i>First difference estimate reported</i>				
Weekly profit from main product	11.87 (46.34)	1759	1.84 (2.275)	1.71 (2.139)

Each coefficient reported in the table is from a separate regression. * significant at 10%; ** significant at 5%; *** significant at 1%. Standard errors clustered by village bank in parentheses.

^{a/} See Appendix table 1 for a definition of each dependent variables.

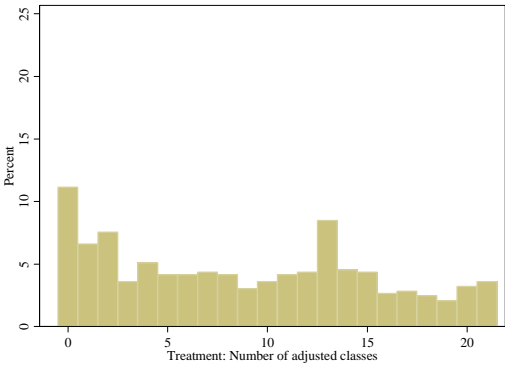
^{b/} The covariates include location (Ayacucho or Lima), business activity, business size, age, schooling and number of FINCA loans received by the client.

Graph 1. Distribution of the individual attendance in Ayacucho, by kind of treatment ^{a/}



^{a/} Individual attendance is calculated as the number of classes that the client was exposed to during her tenure in the treatment bank, adjusted by percentage of classes attended.

Graph 2. Distribution of the individual attendance in Lima ^{a/}



Graph 3. Level of the exposure, by location

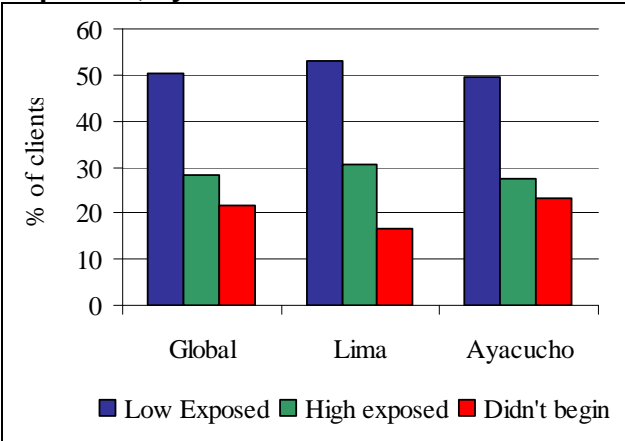


Table 5. High exposure determinants, by location and type of treatment ^{a/ b/} (marginal effects reported)

	Lima	Ayacucho		
		All Treatment	Mandatory	Voluntary
Age [30 - 50]	0.002 (0.013)	0.054 (0.034)	0.075 (0.040)*	0.003 (0.019)
Age [more than 50]	-0.004 (0.014)	0.017 (0.047)	0.017 (0.067)	0.005 (0.021)
Higher education	0.010 (0.012)	-0.022 (0.031)	-0.011 (0.050)	-0.010 (0.009)
Married	-0.005 (0.010)	-0.028 (0.031)	0.016 (0.046)	-0.046 (0.022)**
Business size	0.007 (0.007)	-0.024 (0.027)	-0.022 (0.039)	-0.014 (0.014)
Bs. activity (prepared food)	0.017 (0.017)	-0.032 (0.046)	-0.045 (0.077)	0.008 (0.019)
Bs. activity (services)	0.020 (0.020)	0.039 (0.071)	0.006 (0.097)	0.018 (0.031)
Bs. activity (production)	0.000 (0.012)	0.024 (0.062)	0.007 (0.095)	0.031 (0.034)
Ex-ante high interest in training	-0.014 (0.009)	-0.014 (0.031)	-0.006 (0.044)	-0.006 (0.016)
Mandatory training		0.516 (0.032)***		
Bank w/ high default rate (ex ante)	-0.014 (0.011)	-0.056 (0.040)	-0.008 (0.054)	-0.052 (0.026)**
Bank w/ high dropout rate (ex ante)	-0.018 (0.014)	-0.020 (0.052)	-0.106 (0.058)*	0.045 (0.030)
Client's ex post tenure [1 - 2 yrs]	0.993 (0.002)***	0.393 (0.045)***	0.406 (0.043)***	0.042 (0.033)
Client's ex post tenure [+ than 2 yrs]	0.985 (0.006)***	0.654 (0.039)***	0.699 (0.033)***	0.136 (0.053)**
Observations	585	1573	963	610
# highly exposed	214	564	521	43
Log likelihood	-236.5	-590.7	-436.2	-127.5

Standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%

^{a/} Includes people whose banks started the training.

^{b/} Dependent and independent variables are defined identically to those in the previous table.

Table 6: Impact of training on selected outcomes - Intention to treat (ITT) vs. Treatment on the treated (TOT)

Dependent variable ^{a/}	ITT	TOT ^{d/}	TOT 2 ^{d/ e/}
Repayment	0.03 (0.022)	0.04* (0.027)	0.04** (0.024)
Profit used for business growth ^{b/}	0.04** (0.020)	0.05** (0.025)	0.06** (0.029)
Keeping records of sales ^{b/}	0.03* (0.020)	0.05* (0.026)	0.07* (0.036)
Business knowledge index ^{b/}	0.10* (0.060)	0.12* (0.068)	0.18* (0.103)
Executed innovations in their businesses ^{b/}	0.05** (0.020)	0.06** (0.024)	0.08** (0.034)
Last month sales (log) ^{c/}	0.09 (0.064)	0.10 (0.069)	0.17 (0.107)
Good month (log) ^{c/}	0.02 (0.051)	0.02 (0.060)	0.04 (0.106)
Normal month (log) ^{c/}	0.09* (0.052)	0.11* (0.063)	0.18* (0.110)
Bad month (log) ^{c/}	0.18** (0.082)	0.21** (0.093)	0.33** (0.132)
Difference good-bad month (log) ^{c/}	-0.16** (0.080)	-0.21** (0.097)	-0.29** (0.125)
Number of workers ^{c/}	0.00 (0.062)	0.01 (0.073)	0.01 (0.114)
Workers' productivity ^{c/}	0.08 (0.069)	0.08 (0.076)	0.14 (0.119)
Client's decision power on: loan & savings for hh & business ^{c/}	-0.04 (0.050)	-0.05 (0.060)	-0.10 (0.107)

Each coefficient reported in the table is from a separate regression. * significant at 10%; ** significant at 5%; *** significant at 1%. Standard errors clustered by village bank in parentheses except for empowerment results. Marginal effects reported for probit specifications (profit used for business growth, keeping records, clients who executed innovations and client's decision power).

^{a/} Dependent variables are defined as in tables 2-4.

^{b/} First difference estimate without covariates reported.

^{c/} Double-difference estimate without covariates reported.

^{d/} IV estimation of treatment on the treated (TOT) effect, with intention to treat (ITT) as instrument.

^{e/} Treatment is re-defined here for clients who effectively received more than about 8 sessions of training (duration of the first module).

Table 7. Response rate

	Treatment	Control	Difference	T-stat	
Global	75.2	77.9	-2.7	2.060	**
By Location					
Lima	77.2	83.5	-6.2	2.845	***
Ayacucho	74.5	74.8	-0.3	0.170	
By permanence					
Clients	83.2	83.9	-0.6	0.339	
Ex-clients	69.9	74.2	-4.3	2.436	***

Table 8. Pre intervention characteristics, by attrition status

Characteristics	Global			
	Reached	Not reached	Difference	T-stat
Age				
less than 30	0.23	0.33	-0.11	-7.207 ***
[30 - 50]	0.57	0.52	0.05	3.129 ***
more than 50	0.21	0.15	0.05	3.962 ***
Education level				
None	0.08	0.08	0.00	0.014
Primary	0.29	0.29	0.00	0.085
Secondary	0.42	0.41	0.01	0.345
Higher	0.22	0.23	-0.01	-0.446
Language (Spanish = 1)	0.80	0.79	0.01	0.987
Married	0.77	0.69	0.08	5.618 ***
Household size ^{b/}	5.39	5.05	0.34	4.420 ***
Location (Lima = 1)	0.31	0.24	0.06	3.986 ***
Business size ^{b/}	0.47	0.45	0.02	1.063
Workers in the business	0.96	0.82	0.14	2.643 ***
Tax Formality ^{b/}	0.14	0.12	0.02	1.638 *
Economic activity				
Commerce	0.71	0.76	-0.05	-2.928 ***
Prepared food	0.11	0.10	0.01	0.756
Services	0.07	0.07	0.01	0.933
Production	0.10	0.07	0.03	2.847 ***
Dropped out ever since beginning of training ^{a/}	0.64	0.90	-0.26	16.500 ***
Dropped out permanently ^{b/}	0.49	0.80	-0.32	18.601 ***
Defaulted ever since beginning of training ^{a/}	0.19	0.24	-0.05	-3.689 ***
High interest in training ^{b/}	0.46	0.45	0.01	0.484

* significant at 10%; ** significant at 5%; *** significant at 1%

^{a/} Variables are defined as follows. Dropped out ever since beginning of training: Binary variable equal to one if client had ever left a FINCA bank ever since the beginning of the training. Defaulted ever since beginning of training: Binary variable equal to one if client's weekly payments had not cover loan's principal and interests, and mandatory savings at least once since the beginning of the training.

^{b/} Variables are defined identically to those in previous tables in this section.

Table 9. Pre intervention characteristics, by attrition status and location

Characteristics ^{a/}	Ayacucho				Lima					
	Reached	Not reached	Difference	T-stat	Reached	Not reached	Difference	T-stat		
Age										
less than 30	0.28	0.40	-0.12	-6.289	***	0.10	0.14	-0.04	-1.657	**
[30 – 50]	0.53	0.47	0.06	3.123	***	0.65	0.65	0.00	-0.125	
more than 50	0.19	0.13	0.05	3.529	***	0.25	0.21	0.04	1.359	*
Education level										
None	0.10	0.09	0.01	0.541		0.02	0.02	0.00	0.217	
Primary	0.32	0.32	0.00	0.120		0.22	0.19	0.02	0.880	
Secondary	0.36	0.38	-0.02	-0.955		0.53	0.49	0.04	1.140	
Higher	0.22	0.21	0.01	0.668		0.24	0.30	-0.07	-2.216	
Language (Spanish = 1)	0.72	0.72	-0.01	-0.315						
Married	0.75	0.68	0.08	4.317	***	0.81	0.72	0.09	3.296	***
Household size	5.55	5.15	0.40	4.219	***	5.04	4.74	0.30	2.316	**
Business size	0.47	0.43	0.04	1.993	**	0.47	0.52	-0.05	-1.415	*
Workers in the business	0.83	0.69	0.15	2.456	***	1.23	1.21	0.02	0.203	
Tax Formality	0.11	0.09	0.02	1.651	**	0.22	0.23	-0.01	-0.325	
Economic activity										
Commerce	0.75	0.78	-0.03	-1.644	*	0.62	0.68	-0.07	-1.974	**
Prepared food	0.10	0.10	0.00	-0.062		0.14	0.11	0.03	1.132	
Services	0.07	0.06	0.01	0.678		0.08	0.08	0.01	0.501	
Production	0.08	0.05	0.02	2.152	**	0.16	0.13	0.03	1.192	
Dropped out ever since beginning of training	0.66	0.95	-0.29	16.676	***	0.60	0.74	-0.15	-4.297	***
Dropped out permanently	0.49	0.83	-0.35	17.869	***	0.49	0.71	-0.22	-6.313	***
Defaulted ever since beginning of training	0.16	0.22	-0.07	-4.278	***	0.27	0.31	-0.04	-1.253	
High interest in training	0.38	0.39	0.00	0.245		0.64	0.66	-0.02	-0.525	

* significant at 10%; ** significant at 5%; *** significant at 1%

^{a/} Variables are defined identically to those in the previous table.

Appendix Table 1: Descriptions of outcome variables

Variable	Description	Time of measurement
<i>1. Institutional outcomes</i>		
Loan size	Amount borrowed from FINCA's external account at beginning of loan cycle (US\$).	Last cycle before and last available after the training
Cumulative savings	Savings balance (voluntary and mandatory) at end of loan cycle.	Last cycle before and last available after the training
Repayment	Binary variable equal to one if, since the beginning of training, the client made all her payments on time or had sufficient savings to cover missed payments	Every cycle since the beginning of training
Permanent and temporary dropout	Binary variable equal to one if client had ever left a FINCA village bank since the beginning of the training.	
Permanent dropout	Binary variable equal to one if client had left a FINCA village bank by December 2005.	
Fines	Amount discounted from the savings account for not attending or being late to any of the meeting, and/or not making the weekly installment (US\$).	
Solidarity discount	Discounts from savings accounts that occur when there is an individual default in the external account not covered by defaulter's individual savings (US\$).	
<i>2. Business practices</i>		
Tax formality	Binary variable equal to one if the client has a tax ID number.	BL and FU
Profits used for business growth	Binary variable equal to one if the client reported re-investing profits for the growth or continuity of the business.	FU
Thinking of keeping business safe when taking money from it	Binary variable equal to one if client considers the needs of the business when taking money from the business for family use.	FU
Fixed salary for herself	Binary variable equal to one if the client pays herself a fixed salary.	BL and FU
Records sales	Binary variable equal to one if the client records her sales in a registry or notebook.	BL and FU
Records withdrawals	Binary variable equal to one if the client records her cash and in-kind withdrawals in a registry or notebook.	BL and FU
Records wages	Binary variable equal to one if the client records in a registry or notebook the wage payments she makes to workers that are not household members.	FU
Business knowledge	Number of right answers given by the client when asked about what should be done to increase business sales and to plan for a new business.	FU

Starting a new business	Binary variable equal to one if the client reports having begun a new business in the last year (Ayacucho) or the last two years (Lima).	FU
Number of sales locations	Number of locations where the client sells the products of her main business.	BL and FU
Allows credit sales	Binary variable equal to one if the client makes sales on credit.	FU, but recalling situation 12 months before survey
Faced problems with business	Binary variable equal to one if the client reported that her business faced a specific problem in the last year (Ayacucho) or the last two years (Lima).	FU
Planned change/innovation	Binary variable equal to one if the client had an idea for a change/innovation to improve the business (Ayacucho) or to solve the problems faced (Lima).	FU
Implemented change/innovation	Binary variable equal to one if the client implemented a change/innovation to improve the business (Ayacucho) or to solve the problems faced (Lima).	FU
<i>3. Business results</i>		
Last week's sales (log)	Logarithm of sales from the client's main business in the week preceding each survey.	BL and FU
Good sales	Sales from the client's main business in a good month (S/).	BL and FU
Normal sales	Sales from the client's main business in a normal month (S/).	BL and FU
Bad sales	Sales from the client's main business in a bad month (S/).	BL and FU
Difference good-bad monthly sales	Difference between sales from the client's main business in a good month and in a bad month (S/.)	BL and FU
Number of total workers	Number of workers in the main business.	BL and FU
Paid workers, not family	Number of workers in the main business that are not household members.	BL and FU

Appendix Table 2: Post intervention differences for dropout reasons, Ayacucho & Lima

	Total		Treatment		Control		Difference	T-stat
	# obs	%	# obs	%	# obs	%		
Number of clients	3457		2093	60.54	1364	39.46		
<i>5-I. Reasons related with the policies and procedures of the FINCA program</i>								
Dissatisfied with FINCA's loan terms	227	6.57	131	6.26	94	6.89	-0.633	-0.737
Dissatisfied with FINCA's saving terms	51	1.48	28	1.34	23	1.69	-0.348	-0.830
Dissatisfied with the solidarity discounts (only Lima) ^{a/}	47	4.42	20	3.68	27	5.19	-1.509	-1.196
The meetings were too long or too far (interference with business' schedule and/or personal activities)	404	11.69	256	12.23	145	10.63	1.601	1.437 *
Unequal / bad treatment to bank members	142	4.11	82	3.92	59	4.33	-0.408	-0.592
Because of the training	0	0.00	0	0.00	0	0.00	0.000	-
FINCA discovered loans from other institutions (only Ayacucho) ^{b/}	13	0.54	7	0.45	6	0.71	-0.259	-0.825
Found an institution with better loan terms	18	0.52	11	0.53	7	0.51	0.012	0.049
<i>5-II. Reasons related with the group loans</i>								
The village bank "graduated" (or was dissolved)	30	0.87	14	0.67	13	0.95	-0.284	-0.928
Personal conflicts in the bank (with other bank members or with the bank's president)	170	4.92	106	5.06	63	4.62	0.446	0.594
<i>5-III. Reasons related to the client's business</i>								
No credit needs because of the good situation of the business (sufficient capital in the business or the business operates seasonally)	29	0.84	18	0.86	11	0.81	0.054	0.169
No credit needs/could not pay the loan because of the bad situation of the business or other reasons	304	8.79	187	8.93	116	8.50	0.430	0.437
Closed the business / new activity or job	69	2.00	38	1.82	30	2.20	-0.384	-0.794
<i>5-IV. Personal Reasons</i>								
Expenses resulting from a family crisis (i.e. illness) or family event (i.e. wedding)	312	9.03	193	9.22	118	8.65	0.570	0.573
Other personal problems	124	3.59	74	3.54	50	3.67	-0.130	-0.201
Left the region/went on a long trip	215	6.22	140	6.69	75	5.50	1.190	1.417 *
A relative influenced the client	37	1.07	23	1.10	14	1.03	0.073	0.202
<i>5-V. Reasons due to Environmental Factors</i>								
Environmental / macroeconomic factors	57	1.65	31	1.48	26	1.91	-0.425	-0.959
<i>5-VI. Other Reasons</i>								
Other / Did not respond	221	6.39	134	6.40	85	6.23	0.171	0.201

^{a/} There are 1063 observations: (543 received treatment)

^{b/} There are 2394 observations: (1550 received treatment)

Appendix A: Business Training Materials

In Lima, the training was administered as a two-part program.¹⁹ Module 1, “Training for Success,” consists of 15 sessions that introduce the topics of business administration and marketing. Classes begin by introducing attendees to what a business is, how a business works, and the marketplace. Women are taught to identify their customers, business competitors, and the position of the business in the marketplace. Later in the module, sessions cover topics on product, price, promotional strategies, and a commercial plan. The module also includes review sessions and a business game that participants play in several sessions.

The second module, “Business and Family: Costs and Finances,” consists of 10 sessions that explain how to separate business and home finances. The classes cover the differences between income, costs, and profit, how to calculate production costs, and product pricing. Other sessions cover maintaining records of business’ operations, business growth, loan repayment, and taxes.

Every session of these two modules included worksheets on the topics taught for the clients to practice and review at the meetings or at home.

In Ayacucho, the training program was grouped into 3 modules with topics less advanced than those taught in Lima.²⁰ Sessions were presented in 30 minute classes and did not use worksheets as in Lima. Module 1, “Manage Your Business Money,” begins by defining the differences between money for personal expenses and for the business. Women are taught how to calculate profits and about the use of profits for the household and business. Sessions cover how to handle selling to customers on credit, how to record business expenses, how to prevent losses, and the importance of investing in the business. The module also includes a review session.

Module 2, “Increase Your Sales” begins by providing an overview of five key elements in sales: 1) customers; 2) business product or service; 3) product placement; 4) pricing; and 5) marketing. Many of the following sessions are dedicated to provide women with practical means of applying these concepts. The topics covered include the key elements of good customer relations, how to target sales to different types of customers, and approaches for varying the types and timing of the products that are sold in order to increase sales. Participants are also taught how to identify locations, price goods, and conduct

¹⁹ Table A1 provides a list of lessons presented in modules 1 and 2 in Lima.

²⁰ Table A2 provides a list of lessons presented in modules 1 -3 in Ayacucho.

activities that increase sales and profits.

The third module, "Plan for a Better Business," teaches members how to incorporate planning into their business. Sessions begin by presenting why planning is beneficial and what traits characterize a successful business. Attendees are instructed on how to solve business problems and how to introduce new products or changes. Later sessions teach the tools needed to prepare a sales plan, calculate business and loan costs, search for new resources, and handle unexpected problems and opportunities.

Appendix A, Table 1. Business training sessions presented in Lima

Module 1: Training for Success		Module 2: The Business and the Family: Costs and Finances	
Session	Title	Session	Title
1	Training for Success	1	The Business and the Family
2	What is a business?	2	Income, Costs, and Profit
3	How does a business work?	3	My Costs of Production and Operating Resources
4	The Market	4	How Do I Calculate the Cost of Production of My Product?
5	Who are my customers?	5	Prices and Price Equilibrium
6	Who are my competitors?	6	How to Make a Good Price Decision
7	Review Session 1	7	The Registers and Controls in My Business
8	Business game: Module 1	8	The Growth of My Business
9	My business' position in the market	9	Will I Be Able to Pay My Loan?
10	Product and Price Commercial Strategy	10	Taxes
11	Marketplace and Promotion Commercial Strategy		
12	My Commercial Plan		
13	Review Session 2		
14	Business Game: Module 2		
15	Business Game: Module 3		

Appendix A, Table 2: Business training sessions presented in Ayacucho

Module 1: Manage Your Business Money		Module 2: Increase Your Sales	
Session	Title	Session	Title
1	Separate Business and Personal Money	1	Know Your Customers
2	Use Business Loans for Your Business	2	Treat Your Customers Well
3	Calculating Profits	3	Sell to Different Kinds of Customers
4	Track, Plan and Invest Your Business Money	4	Improve Your Products and Services
5	Decide How to Use the Profits of the Business to Satisfy the Needs of the Business and Your Personal Needs	5	Sell New and Complementary Products and Services
6	Prevent Business Losses	6	Seize Opportunities to Sell
7	Manage Credit Sales	7	Sell Where Customers Buy the Most
8	Review of the Learning Sessions of "Manage Your Business Money"	8	Set the Right Price
		9	Promote Your Business With Good Selling Practices
		10	Plan for Increased Sales

Module 3: Plan for a Better Business	
Session	Title
1	Use Planning Steps to Grow Your Business
2	Examine How Your Business Is Doing
3	Decide How You Can Improve Your Business
4	Develop and Test New Business Ideas
5	Plan How Much to Make and Sell
6	Plan Business Costs
7	Plan for More Profit
8	Find Resources for Your Business
9	Prepare for Unexpected Events