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**Changing Business Practices of Micro
and Small Enterprises: Evidence from an
RCT with 12 Financial Service Providers**

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Helmsmüller

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Abstract

Even with access to finance, few micro and small entrepreneurs grow their businesses professionally, possibly due to inefficient management. Using a randomized control trial, we measure the impact of a business training program frequently implemented worldwide. In Indonesia, the program worked with twelve large financial service providers who provided group training and/ or individual counseling to their clients. In line with the existing literature, we find no evidence of changes in business-related outcomes such as profits or sales. While most studies rely on evidence from few hundred entrepreneurs and hence may suffer from lack of precision, a large sample size from a panel of 3,975 entrepreneurs provides us with more confidence in our zero findings. However, we also find that effects vary across partner institutions with one bank achieving significant behavioural changes associated with greater marketing knowledge. Being able to compare the results across a dozen banks and cooperatives, our evaluation provides a new argument in the ongoing “training doesn’t work” debate highlighting the role of partner selection in this and similar interventions.

JEL Classification: O17, L26, O12, D22

Keywords: entrepreneurship training, management skills, Microfinance, micro and small enterprises, Program evaluation, randomized control trial

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Alexandra Avdeenko * Markus Frölich † Simona Helmsmüller ‡

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1 INTRODUCTION

Supporting Micro and Small Enterprise (MSE) owners in developing and emerging economies to increase their profits is a noble aim of the self-help advocating development cooperation. To address gaps in business and managerial skills, donors and practitioners have been pioneering a vast range of training courses, be it as stand-alone entrepreneurship program or as addition to financial services. Especially with access to finance, improved business practices and efficiency were believed to increase profitability and business longevity (Bloom, Eifert, Mahajan, McKenzie, and Robert 2013, McKenzie and Woodruff 2015). Yet discouraging empirical evidence on the effectiveness of specific programs left inspired practitioners and researchers puzzled, shifting the focus to more innovation in training delivery and targeting.² With this study, we would like to add another piece to the puzzle: Program implementer selection.

One of the largest training courses world-wide is the Start and Improve Your Business (SIYB) of the International Labour Organization (ILO), having been used by over 65,000 trainers in around 100 countries. We evaluate the pilot phase of a training and counseling intervention based on SIYB, which was designed to be easily scalable to achieve large outreach. To this end the ILO worked in cooperation with twelve different institutions, including savings and credit cooperatives, rural banks, and a development bank. The ILO trained more than 150 loan officers of local Indonesian micro-Financial Service Providers (FSPs) to become trainers and/or counselors, with a focus on financial management and marketing. In 2018, the trained loan officers then provided two-day classroom training sessions and/or five one-on-one counseling sessions to their existing MSE clients with pre-existing access to finance. The duration of the training and counseling treatment is shorter than in other SIYB interventions, which the FSPs hoped would increase participation rate due to lower opportunity costs and which was hence in line with ILO's priority of achieving broad outreach. Our research design is a randomized control trial (RCT) with a two-wave panel of 3,975 clients from twelve participating FSPs, who were randomly assigned to the control group or one of three treatment arms: (1) Only classroom training, (2) only individual counseling, or (3) classroom training with subsequent individual counseling. With this design we address the following research questions: First, calculating average treatment effects, we investigate whether Indonesian MSEs on average benefited from this intervention. Second, we investigate whether any subgroup benefited more, be it because of the entrepreneur or firm characteristics, the program intensity and modality, or the serving FSP.³

Measured almost one year after the program implementation started, our results suggest that the program did not change the profits, household spending or loan behavior of the MSEs. A notable exception is an observed increase in the share of clients whose business plan includes a

²See McKenzie and Woodruff (2014) and McKenzie (2020) for overviews.

³To comply with best research standards, we uploaded a Pre-Analysis Plan (PAP) on the AEA website (RCT ID: AEARCTR-0003625) before the endline data was collected. The PAP includes sixteen hypotheses and a detailed description of the outcomes of interest. The PAP builds on our original intention to analyze data from thirteen participating FSPs. One FSP, a development bank, changed its offer of treatment arms and it is unclear what services were offered to whom at what time. Therefore, we disregard the data from this FSP in this paper.

cash flow analysis (by 2.9 percentage points from a control mean of 7.3%), which is important for MSE lending and might mirror a priority of the training loan officers. Importantly, however, our results vary considerably across the different implementing partners. We find that rural banks achieve consistent, albeit small, improvements in knowledge and practice outcomes, whereas there is no consistent impact in credit cooperatives. Both types of institutions operate predominantly in rural areas yet differ foremost in their ownership structure. One rural bank achieved particularly large impact on intermediate outcomes, and this bank also demonstrated the highest implementation fidelity in our monitoring data. For this bank we find that an improvement in downstream outcomes is mediated by a greater level of knowledge acquired in the trainings.

With our study we contribute to a growing body of literature on MSE growth in low and middle-income countries. Causal evidence on how to improve business practices is inconsistent, which is little surprising given that the evaluated interventions differ substantially.⁴ De Mel, McKenzie, and Woodruff (2014) and Fiala (2018) provide the only two rigorous evaluations of applications of ILO’s SIYB in Sri Lanka and Uganda, respectively. De Mel et al. (2014) find changes in practices for existing businesses, but no impact on financial outcomes over a period of two years, except for some positive effects on the subgroup of start-up entrepreneurs. Fiala (2018) combines the training treatment with either a loan or a grant, hence tackling the constraints in finance and managerial capital at the same time. He finds significant increases in profits six months after the intervention ended, but only for male participants and only when combined with loans and not grants. Our program delivery differs from previous studies of the SIYB by including individual counseling sessions, but no additional financing. Whereas more recently, other researchers have also analyzed this approach of customizing advice to the clients’ needs via follow-up visits, it is often considered a more cost-intensive treatment, with no study finding sustained impact (Valdivia (2015) in Peru, Giné and Mansuri (2019) in Pakistan, McKenzie and Puerto (2020) in Kenya, Bakhtiar, Bastian, and Goldstein (2021) in Ethiopia, and Drexler et al. (2014) in the Dominican Republic.). In our case, given that counseling was provided as part of routine loan collection visits, the counseling treatment was actually less costly than the training.⁵ In our study, we find no increase in knowledge and no changes in business practices among the treatment group. This holds true on average and does not depend on the mode of program delivery (i.e., training and/or counseling interventions).

We contribute to this literature by estimating the impacts on a relatively large sample size so far studied in this context (3,975 entrepreneurs thereof 2,650 in treatment groups). This provides several advantages. First, it allows identifying more precisely potential groups of people who would benefit most and others who might need to be supported differently. For example, much

⁴For example, Karlan and Valdivia (2011) find no overall impact of training on profits or employment, Drexler, Fischer, and Schoar (2014) find a significant impact in a rule-of-thumb training, Lafortune, Riutort, and Tessada (2017) find that visits of role models can increase training impact, and Seitz, Menkhoff, and Grohmann (2020) find providing feedback can make a difference. McKenzie and Woodruff (2014) share a comprehensive overview of similar early evaluations and the general caveats in providing classroom training.

⁵Also refer to related work by Bloom et al. (2013); Bruhn, Karlan, and Schoar (2013); Iacovone, Maloney, and Mckenzie (2021); Karlan, Knight, and Udry (2015); Lafortune et al. (2017) for the effects of counseling interventions.

of the analysis of heterogeneous effects in the literature has focused on gender differences. Berge, Bjorvatn, and Tungodden (2015) and Giné and Mansuri (2019) both find that male participants are more likely to benefit from training in terms of business outcomes, with neither study finding significant changes in income or assets for women. Focusing exclusively on women, Field, Jayachandran, and Pande (2010) find that training increased business income for upper-caste Hindu women in India, but not for lower-castes or Muslim women. Our sample differs from existing studies by studying exclusively existing enterprises, both female- and male-owned, who are borrowing at commercial rates, which largely implies that they are already established businesses. In this setting, we cannot confirm previous findings where the need for technical assistance was divided along the lines of gender, educational background, age of the business, or size as measured in profit or loan volume. Second, the absence of overall effects found in the literature may be due to a lack of statistical power to detect impacts. McKenzie (2020) argues that the most studies (typically ranging between 300 and 500 very heterogeneous entrepreneurs in a treatment group) fail to detect impacts of training programs. Instead, reassessing the evidence of recent studies in a meta analysis he finds positive increases in profits and sales of 5 to 10 percent, which is a sizable effect given the low intensity of most training programs. The absence of detectable effects with several thousand study participants in our study allows to shift the attention to another notable point - differences in program implementation.

The ILO program we evaluate has few distinct advantages: training existing clients of FSPs ensures that access to finance is not a binding constraint, using well-tested training material suggests a high quality, and cooperating with loan officers as trainers/counselors establishes cost-efficiency while maintaining incentive compatibility. Still, since we find no increase in knowledge and no changes in business practices among the treatment group, our results may reflect limited absorptive capacity of the implementing institutions, e.g. limited human or managerial capital, a lack in motivation, or a lack of control inherent to longer impact chains. This is a point made by Allcott (2015) who demonstrates that research site selection can lead to systematically biased estimates. He finds microfinance institutions (MFIs) which cooperate with renown research institutions to be older, larger, and more likely for profit. In other words, what works in a research setting with close control may have little impact in practice. Instead, researchers' selection of more or less capable implementing partners might drive and bias the results.⁶ Given that it requires a large sample of sites (in our case also financial institutions), almost no further evidence exists on this policy-relevant bias. We contribute to this literature by being the first working simultaneously with twelve institutions who implement their program on comparable target populations and are for the first time rigorously evaluated. Comparing the achieved impacts we show heterogeneity by types of implementing partner and across them. From a methodological viewpoint, we contribute to the discussion of external validity of RCTs. Indeed, selected findings in our study indicate that positive training impacts are detectable, and

⁶See also relevant discussions in Banerjee et al. (2017) and Bird et al. (2021). Relatedly, Swain and Varghese (2013) show that training delivery mechanisms affect the impact of the training with training provided by non-governmental organizations achieving greater impact than training provided by government officials in bank linkage groups in India. Their setting is however non-experimental and might be suffering from self-selection.

had we only studied the training performance of one particular FSP only, we could have told an encouraging story. This stresses the importance of describing the selection of implementing partners for an external validity assessment. From a policy design viewpoint, it shows that partner choice can be the first bottleneck in cost-efficient upscaling. Organization that aim to scale-up operations, such as the ILO in Indonesia, work with several implementing partners to overcome capacity constraints and reach many beneficiaries in an often short period of time. Notably, for the implementation of the SIYB the ILO collaborated with over 3,000 different partner institutions globally. Under these constraints, it may still pay off to rigorously pilot the cooperation with the implementing agencies to identifying barriers to impacts, the institutional support needed, and eventually institutions with the capacity and skills to successfully implement the trainings.⁷

We organize the rest of this paper as follows. In Section 2 we describe the intervention, followed by details on the experimental design. In Section 4, we present our estimation method and then estimate average treatment effects in Section 5. Section 6 contains results disaggregated by FSPs. The last section concludes.

2 THE PROGRAM AND INTENDED EFFECTS

2-1 Micro and small enterprises in Indonesia

Considered an emerging middle-income country, Indonesia has managed to cut its poverty rate substantially from 19% in 2000 to below 10% in 2018 (Statistics Indonesia 2018). Yet, of the over 59.27 million firms, 99.89% were MSEs in 2014 (OECD 2018).⁸ Their relatively small contribution to the gross domestic product (GDP) (43%) illustrates the MSEs' low productivity (International Labour Organization 2018), which persists despite a healthy macroeconomic environment and light taxation (OECD 2018).

Indonesia's large and innovative MSE finance sector has been recognized as a global leader for decades (OECD 2018, Rosengard and Prasetyantoko 2011).⁹ However, the fact that only few entrepreneurs transition from micro to small businesses suggests that factors other than financing also inhibit growth.¹⁰ Potentially, some of the microenterprises are *necessity entrepreneurs* who start their own business because they lack formal employment opportunities. These individuals are less likely to identify promising investment opportunities or to manage business

⁷The intervention of interest in this study was a pilot within the broader Promoting Micro and Small Enterprises through Improved Entrepreneurs' Access to Financial Services (PROMISE-IMPACT) initiative of the ILO in Indonesia.

⁸By law 20/2008, the Ministry of Cooperatives and SMEs characterizes micro (small) enterprises as having net assets below 50 (500) mln IDR or annual revenues below 300 mln (2.5 bln) IDR. The Central Bureau of Statistics (Badan Pusat Statistik, BPS) follows an employment-based definition, with microenterprises employing 1-4 people and small enterprises 5-19 people. The clients in our study fall under MSEs in both definitions.

⁹Most famously, Bank Rakyat Indonesia is one of the largest microfinance service providers in the world with more than 4,400 units serving the rural population.

¹⁰Shedding some more light on this, Cole, Sampson, and Zia (2009) investigate whether a low demand for financial services in Indonesia is rational (prices are higher than productivity) or constrained by information asymmetries (lack of financial literacy). Their results rather favor the former, given that financial literacy training only marginally affected demand.

growth effectively (Atmadja, Su, and Sharma 2016; Aldianto, Rudito, Mirzanti, Situmorang, and Larso 2010). The productivity of microentrepreneurs in Indonesia might hence also be inhibited by a lack of managerial capital, i.e., the owner's ability to use the firm's capital and labor resources most efficiently (Bruhn, Karlan, and Schoar 2010). One way to assist growth of MSEs in Indonesia is hence to improve their productivity by combining access to financial services with business advice or training.

2-2 The program

With the aim to increase entrepreneurial skills of MSE owners, the ILO partnered with FSPs in East Java and West Java. Financed by the Swiss development agency State Secretariat for Economic Affairs (SECO) with 3.1 million USD, the program geographically focused on West and East Java, an area with a high number of manufacturing MSEs, predominantly in the textile as well as food and beverage industries. More than 150 loan officers of 12 participating FSPs were formally trained to become trainers and/or counselors. These loan officers then gave classroom training and/or individual business counseling to clients selected by our randomization procedure. The intended increase in profitability of the clients' enterprises is expected to benefit (1) the clients directly through greater profits and increased household expenditures, (2) the FSPs through improved loan repayment and larger loan sizes, and (3) the broader economy through job creation.

In the training-of-trainers (ToT) approach, the ILO relied on its existing methodology, the SIYB. Now one of the largest business training programs worldwide, it has its roots in the 1970s and has experienced constant revision and refinements for its implementation around the world (International Labour Organization 2013). Its ToT was an intensive ten-days course which focused on concepts such as generating a business idea, determination of costs and prices, bookkeeping, financial planning, stock control, and purchasing/buying. The training also taught adult learning methodologies, including the delivery of practice sessions by the participants, various simulation games, and exercises for presentation skills, concluding with a certification test.¹¹

The newly trained trainers then conducted classroom training courses for their clients who were randomly selected by us and individually invited by phone or in person by the loan officer. Up to 20 clients participated in a training session held in a location close to the clients' residence. Given the priorities determined by the FSPs in a previous needs assessment, trainers focused on financial management and marketing in their courses for clients.¹² The loan officers trained the clients only once in a two-day training session which ends by asking clients to prepare their

¹¹The ToT schedule followed in the intervention is attached in Appendix 1-1.

¹²The ILO supported the FSPs in conducting (not necessarily representative) client surveys in autumn 2016 in order to understand and prioritize the needs of their clients. A total of 2,405 clients were interviewed to this purpose. A staggering 82% believed business support services to be important, yet only a small part had received training and mostly only related to repayment of loans; a topic they themselves deemed of little importance. In contrast, clients prioritized business support services regarding marketing, product quality improvement and financial management. The self-reported willingness to pay for these services is, however, low, with more than half of the respondents stating that they would not pay any fee.

business plan. In the “training only” treatment arm, no further advise to carry out their plans was provided.

In contrast, the training-of-counselors (ToC) ran for five days as an adaptation of the SIYB specifically undertaken for this intervention. In addition to the technical skills of marketing and financial planning, the participants learned about the fundamentals of adult learning and counseling, but were not trained to become classroom teachers.¹³ Loan officers undertook individual counseling sessions at the client’s premise, mostly combined with routine loan collection visits. Counseling of clients happened semi-structured: While all loan officers started with a review of the MSE’s past activities compared to the ones in the initially agreed-upon business plan, subsequent counseling consisted of individual advise and encouragement as needed.

2-3 Expected impact chain

The intervention builds on the following rational: Participation in training and/or counseling increases knowledge in the focus topics marketing and financial planning. The increased knowledge leads to behavioral changes in business practices among participants. We refer to participation, increased knowledge, and changed practices as *intermediate outcomes*. These outcomes are then expected to affect business outcomes, which in turn lead to better lives for the entrepreneur and her household, as well as to improved loan behavior, which eventually also benefits the FSPs. We refer to business and households outcomes as well as loan behavior as *downstream outcomes*.

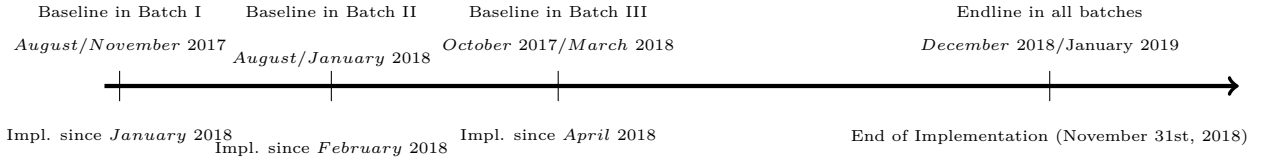
3 EXPERIMENTAL DESIGN

We evaluate the impact of the intervention using an RCT implemented by twelve different FSPs. Following a baseline survey, we randomized clients into one of three different treatment or the control group. Subsequently, the intervention started and eight to sixteen months after the baseline, we conducted an endline survey interviewing 3,975 clients.

As the ILO formalized the partnerships with the various FSPs at different times, we divided the FSPs into three batches. The six FSPs of Batch I are savings and loan cooperatives, the four FSPs of Batch II and the two FSPs of Batch III are banks. We completed the randomization between January and April 2018, and the implementation of the intervention started shortly after, as illustrated in Figure 1.

¹³In Appendix 1-2 we include the schedule of the five-day ToC training.

Figure 1: TIMELINE OF BASELINES AND RANDOMIZATION



Note: This figure displays the timing of the three waves of randomization, and of the endline survey.

3-1 Baseline survey and sample characteristics

Participating FSPs are six savings and loan cooperatives, five rural banks, and one regional development bank, which all predominantly - but to varying degrees - focus on rural areas. They exhibit similarities in their mission (including commitment to the double bottom line) and scope of operations targeting MSEs in East and West Java. At the same time they are considerably diverse regarding their client outreach (from just under 1,000 to over 433,000 active borrowers, of which 30% to 100% are female),¹⁴ lending methodology (group and individual loans, partly Sharia compliant), and professional experience (founded between ten and over sixty years ago).¹⁵

Table 1 contains summary statistics from the baseline survey, averaged over all 3,975 clients whom we were able to re-interview in the endline survey (hereforth referred to as *estimation sample*) and for whom we had complete information of core characteristics.¹⁶

Table 1: BASELINE CHARACTERISTICS

	Mean (1)	SD (2)	Min. (3)	Max. (4)
Panel A: Client Characteristics				
Share of female clients	0.683	0.466	0	1
Average age of client	44.151	9.223	19	65
Total nr. of people in the household (HH) btw 18-65yrs. (incl. the client) ^{99p*}	2.810	1.056	1	6
Share of clients having no education	0.033	0.178	0	1
Share of clients having primary school education	0.300	0.458	0	1
Share of clients having secondary education	0.199	0.399	0	1
Share of clients having vocational education	0.344	0.475	0	1
Share of clients having no add. income	0.570	0.495	0	1
Share of clients having add. income from another business	0.258	0.438	0	1
Panel B: MSE Characteristics				
Nr. of yrs. the business exists ^{99p*}	11.646	9.064	0	39
Share of MSEs not registered	0.824	0.381	0	1
Share of MSEs selling directly at the market	0.542	0.498	0	1

Continued on next page

¹⁴In our study, the number of participating clients varies between FSPs, from 178 to 582 clients in treatment and control group.

¹⁵Table A.1 in Appendix A contains some of the key characteristics of the FSPs.

¹⁶Cleaning of baseline data involved the removal of duplicates and of observations with missing contact information, missing age or gender, or non-response in more than six items. If less than seven items were missing, we imputed the answer using regression imputation based on the set of complete observations. We accounted for outliers and measurement errors by winsorizing at the 90th, 95th or 99th percentile, depending on the initial variation in the variable.

Table 1 – *Continued from previous page*

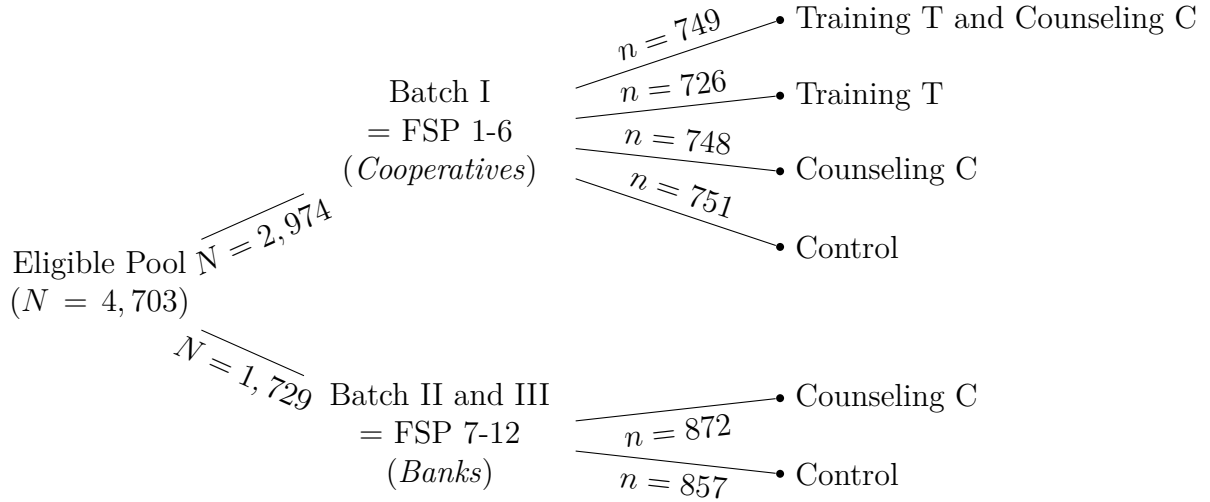
	Mean	Stand. Dev.	Min. Value	Max. Value
Share of MSEs selling through agents	0.164	0.370	0	1
Share of MSEs that are part of the HH	0.696	0.460	0	1
Share of clients preparing a business/financial plan	0.407	0.491	0	1
Share of clients keeping record of all transactions	0.348	0.476	0	1
Share of clients keeping business and HH finances separately	0.517	0.500	0	1
Share of clients investing profit into the business	0.642	0.480	0	1
Total nr. of non-family, permanent workers ^{99p*}	1.104	2.554	0	17
Panel C: Loan Behavior				
Average number of loans per year	0.836	0.622	0	10
Share of clients reporting being late with the loan payment at the FSP	0.177	0.381	0	1
Share of clients want to borrow more for business	0.723	0.447	0	1

- ▶ *Note:* This table contains selected summary statistics from the baseline survey. The table shows selected baseline variables on the left, the different descriptive statistics on top.
- ▶ Sample: Estimation sample, i.e., clients from 12 FSPs whom we were able to re-interview in the endline survey (N = 3,975).
- ▶ Source: Baseline survey (2017 - 2018).
- ▶ Columns (1) - (2) display the mean and standard deviation. Columns (3) - (4) display the minimum and maximum values.
- ▶ The superscript *np* indicates the winsorizing level. We winsorized variables per batch prior to randomization and following an automated rule to define percentiles. * indicates that we re-defined the winsorizing level manually.
- ▶ Table B.2 in Appendix B presents selected summary statistics for the three different types of FSPs individually. Table B.3 in Appendix B presents summary statistics on all baseline variables, also for the full baseline sample (with attrited households), along with a number of tests for imbalances between treatment and control group.

The average age in our estimation sample is 44 years, about two thirds of our interviewed clients are female and the average household contains around three adults, of which two earn an income. Clients who completed a vocational training form the largest group in our sample with 34.4%. Notably, 57.0% of the interviewed clients earn no additional income themselves, besides their business. These businesses are typically, but not exclusively, informal microenterprises operated from the same location as the household lives in and selling their products mainly directly at the market or as single merchant. Whereas the average business has been operational for 11.7 years, there is a lot of variation in this variable, and our sample covers businesses between 0 and 39 years of age with a median of 9 years. On average, a client employs 1.1 non-family, permanent workers in her business, and costs for raw material outweigh worker’s salaries by the factor five. Consistently, the largest share of clients (33.8%) report expensive raw materials as the main barrier to business.

Cooperatives have the largest share of female clients (26.1% in the development bank, 45.9% in rural banks, and 82.9% in cooperatives), and the smallest share of clients with vocational education (51.1% in the development bank, 42.1% in rural banks, and 29.5% in cooperatives; see Table B.2 for details by type of FSP). They are also most likely to serve businesses that are part of the household (43.4% in the development bank, 54.8% in rural banks, and 79.0% in cooperatives) and their clients report lower revenues (45.4 mln IDR in the development bank, 19.6 mln IDR in rural banks, and 12.9 mln IDR in cooperatives). However, the profit to revenues ratio is actually largest in cooperatives (22.9% in the development bank, 29.2% in

Figure 2: RANDOM ASSIGNMENT OF CLIENTS TO TREATMENT ARMS



Note: This figure displays the allocation of clients to treatment arms. Cooperatives (Batch I) offered three treatment arms, whereas the banks (Batch II and III) offered only counseling treatment. Within an FSP, equal number of clients were assigned to the offered treatment or the control group. At endline, we re-interviewed 3,975 out of the 4,703 clients.

rural banks, and 31.5% in cooperatives).

3-2 Randomization and baseline balance

We offered the participating FSPs a choice of different treatment arms: (1) training treatment arm (T), (2) consulting treatment arm (C) and (3) training and consulting treatment arm (TC). Whereas the six FSPs of Batch I (cooperatives) chose to randomize all three treatment arms, the six FSPs of Batch II and Batch III (banks) offered only the C treatment arm. We randomly allocated individuals to one of the treatment arms offered by their respective FSPs or to the control group. Figure 2 illustrates the assignment of observations to the different treatment arms. In allocating treatments, we followed a re-randomization approach whereby we retained the first randomization vector that passed a balancing threshold. In further analysis, we find no systematic differences in observable baseline characteristics between treatment and control group.¹⁷

3-3 Endline survey and attrition

We collected endline data up to 1.5 years after the baseline. In the endline, we were able to reinterview 3,975 clients, whereby 728 clients could not be located or refused the interview. Although an attrition rate of 15.5% seems quite high at first glance, it is within the range of similar studies¹⁸ Clients from the control group were 3.2 percentage points less likely to

¹⁷In Table B.3 we show summary statistics testing the balancing of the randomization variables between treatment and control groups for all batches jointly. We show t-test and F-test statistics for the full baseline sample and the estimation sample (i.e., net of attrition).

¹⁸It is 5.3% in Field et al. (2010), 8% in de Mel, McKenzie, and Woodruff (2008), 24% in Karlan and Valdivia (2011), 26% in Calderon, Cunha, and De Giorgi (2013) as illustrated in McKenzie and Woodruff (2014).

participate in the endline survey than clients from the treatment group and this difference is weakly significant. This is in line with the fact that the attrition rate was higher in East Java, where most of the banks are located, while at the same time bank clients make up a higher share in the control than in the treatment group. Figure 3 illustrates this point. Much of this difference is hence captured by later controlling for FSP fixed effects.

3-4 Monitoring and implementation fidelity

Following randomization, loan officers invited the respective clients to classroom training and/or individual counseling. In the endline survey, we asked whether clients were aware of, had been invited to, and participated in one of the treatments. Since the intervention was advertised differently across FSPs and generally not associated with ILO by the MFI clients, we asked generic questions about participation in trainings or counselings.¹⁹ Among the treatment group 57.6% reported being aware of the program. Conditional on being aware, 79.7% were invited to participate. Conditional on being invited, 72.4% of clients participated in the program.²⁰ As counseling sessions were conducted as part of usual loan collection routines, our survey likely insufficiently captures the implementation of the counseling treatment arm. There is also some evidence of contamination among the control group, with 13.3% stating that they participated in training and/or counseling (Figure C.1).²¹

Moreover, we monitored the implementation process via an online platform starting in April 2018, where loan officers filled questionnaires directly after training/counseling sessions for each participating client separately. Monitoring data exists on about half of our treatment group given that loan officers filled the questionnaires on a voluntary basis.²² The degree to which loan officers complied with the monitoring system varies greatly across FSPs.

We use a combination of self-reported and monitoring information to capture evidence on program implementation. We run regressions for each FSPs separately, regressing program implementation/ uptake on the treatment arms. Figure 4, display the results for the treatment coefficients effectively comparing the propensity of treatment and control group clients' participation in a training or counseling session. The marginal effects are grouped by treatment arms, i.e., the program participation given that a client was assigned to a particular version of the

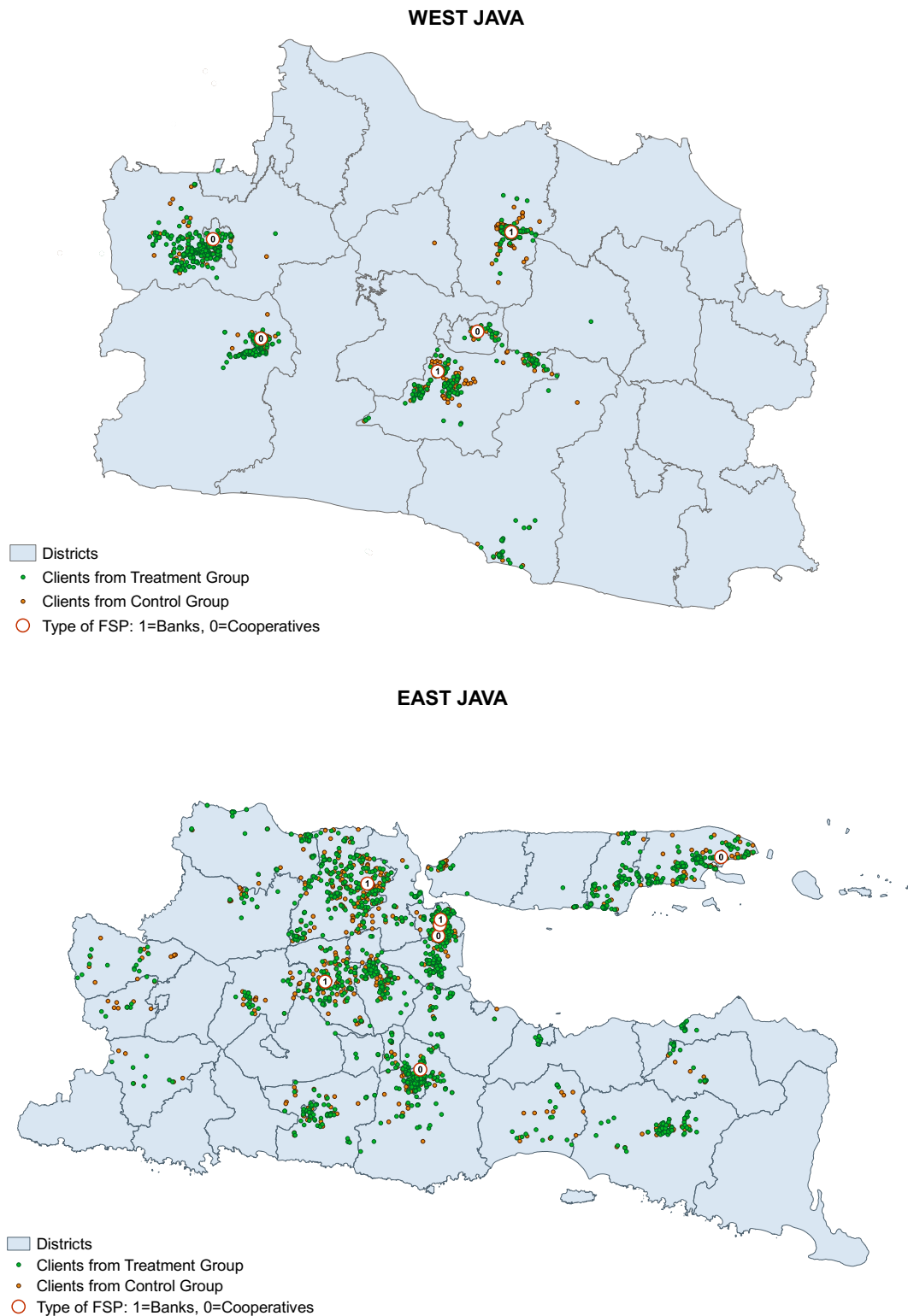
¹⁹We asked all clients: "Are you aware of the existence of services such as classroom training and individual counseling that [*FSP name*] is providing?", where we inserted the FSP name from the baseline survey. Only if the answer was affirmative, we asked the next question: "In the following, we will refer to this programme as *business development program* offered by your financial institution. Were you offered such training or counseling on business development as aforementioned?" Only if the answer was affirmative, we asked: "Did you participate in classroom training or individual counseling sessions or both?" For all three questions, the answer categories were "Yes", "No", "Refused to Answer", "Do not know"/"Not applicable".

²⁰The most common reasons for non-participation were that the client could not leave the business unattended (40.5%), or had to attend to household and child care duties (18.8%). Note that female clients were much more likely to participate at treatment when offered: 75% of female clients invited to treatment took up the offer, as opposed to only 52% among male clients. This finding might also be due to the differential reporting as cooperatives offering three treatment arms also have a larger share of female clients. Unaffected by this, we also cannot confirm the finding by Valdivia (2015), where women with young children are less likely to participate than women without young children.

²¹This rate is highest among cooperatives (25.7%) and low among banks (2.15%), and might at least partially be due to the fact that cooperatives also offer other non-financial services.

²²Specifically on 349 clients who received at least one training session, 868 clients who received at least one counseling session and 223 who clients received at least one training and one counseling session.

Figure 3: LOCATION OF CLIENTS (12 FSPs)



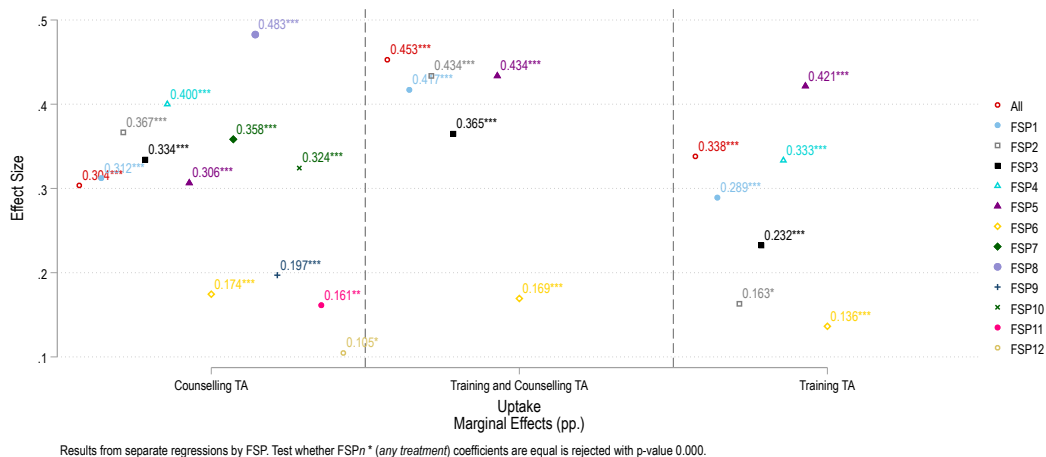
Note: The maps illustrate the geographic location of the clients as captured in our endline survey within East and West Java. The relative share of control group clients is larger in East Java than in West Java, because rural banks are mostly located here.

► Source: Endline survey data (2018 - 2019).

program. For all treatment arms, we observe a great variation in participation across the FSPs. Importantly, FSP 8 shows the highest level of program implementation in the counseling arm (a likelihood that we have verifiable information on program delivery which is 48.2 percentage

points higher than in the control group), while FSP 12 indicates the lowest level for the counseling treatment arm. As a consequence of these differences in implementation levels across the 12 FSPs, the statistical power to detect impacts vary accordingly (with lower implementation levels reducing the likelihood to detect treatment effects).²³ The fact that studies are often too underpowered to eventually detect training effects is an important point made by McKenzie and Woodruff (2014). This calls for meta studies and more studies with greater statistical power, which eventually boils down to studies with bigger sample sizes or - as will be shown in our study - greater levels of provable implementation compliance.

Figure 4: PROGRAM IMPLEMENTATION - DELIVERY AND TAKE-UP - BY FSP AND TREATMENT ARM



Note: The figure displays the marginal effects of comparing program implementation (delivery or uptake rate) across treatment and control group clients, disaggregated by the twelve FSPs. The outcome is an indicator of program implementation as either reported by clients in the endline survey or as reported by loan officers in the monitoring system.

- Source: Monitoring data and endline survey (2018 - 2019).
- Results from separate regressions by FSP, controlling for age, gender, the twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, and enumerator fixed effects. We present robust standard errors.
- Note that counseling was offered in all FSPs, whereby FSP 1 to 6 offered all three treatment arms and FSP 7 to 12 offered counseling only. Self-reported participation in the counseling sessions likely suffers from larger measurement error, potentially due to counseling being done as part of regular loan collection routines.

The experience of varying implementation fidelity is similar to that presented in the work by Karlan and Valdivia (2011): In an entrepreneurship training intervention at different village banks of FINCA Peru only half of the partner banks reached the 17 out of 22 envisioned sessions within two years. The authors also report that these delays are typical for similar interventions and conclude that analysis should focus on intention-to-treat effects to avoid selection bias. We agree with this conclusion and also use initial assignment as main treatment indicator for our analysis which hence focuses solely on intention-to-treat (ITT) effects. Nevertheless, we analyze in more depth how results differ across institutions in Section 6.

Qualitative interviews led by ILO in a roundtable workshop in March 2019 shed light on the reasons for incomplete implementation. Whereas feedback was generally positive, six of the twelve FSPs cited the large geographic spread of the clients as a key challenge, mostly in combination with the limited time available to loan officers. Four FSPs said that some clients

²³Figure C.1 in the Appendix disaggregates this information by its source, i.e., self-reported and monitoring information, while Figure ?? presents marginal effects for self-reported program participation only.

were little motivated and too passive during counseling, which they expect could be improved by better targeting. Three FSPs reported high drop-out rates of clients who finished their last loan cycle, or loan officers shifting their duty station or resigning after the ToT/ToC. The feedback received does not fully correlate with the different level of compliance illustrated in Figure C.1. That is, FSP 8 named more challenges than any other FSP and complied with the research protocols, while FSP 10 named the most observed benefits (such as improved reputation and increased loan sizes) but we cannot confirm implementation fidelity with our monitoring data.

Finally, wherever monitoring data is available, we can analyze the nature of the intervention delivered. The intervention design with respect to its content and structure was mostly adhered to, except for the number of counseling sessions which did often not reach the intended five. Two thirds of the participants were actively engaged and questions were answered satisfactorily by the trainer. Correspondingly, the endline survey shows that most of the respondents find the intervention helpful and recommendable. Survey evidence also confirms that the topics covered in classroom training and counseling sessions were largely similar.

4 ESTIMATION METHOD

We focus on calculating ITT effects and regress the relevant outcome variable on a dummy variable indicating treatment assignment, three sets of control variables, and two types of fixed effects, leading to the following main model specification:

$$Y_{i,t=1} = \beta_{ITT}D_i + \bar{X}_i\beta_3 + X_i\beta_2 + MissX_i\beta_1 + \mu_{FSP_i} + \mu_{Enu_i} + \beta_0 + \epsilon_i. \quad (1)$$

Here, $Y_{i,t=1}$ is the outcome variable for entrepreneur i at endline ($t = 1$), D_i is a dummy variable indicating treatment status (i.e., assigned to any of the three treatment groups or control group), and the parameter of interest is the vector β_{ITT} , the intention to treat effect. It gives the average difference in means between the combined treatment group and the control group, conditional on covariates, and is interpreted as the causal impact of being officially eligible for the training and/or counseling sessions.

In our main specification, we include the following covariates: First, the set \bar{X}_i comprises the covariates age and gender, which we control for in all regressions. Second, we denote by X_i the vector of randomization strata on client level. While in our randomization procedure, we ensured batch-wise balance on a total of 65 baseline variables, we include in the regression those twenty baseline variables, which show the highest imbalance within the respective sample considered. This implies that different covariates X_i are used for different subsamples.²⁴ Third,

²⁴We have used 65 baseline variables for the randomization, i.e., we ensured that treatment and control group are balanced on these variables. However, this was done by batch, so when combining the whole sample together and excluding attrited households, there may be some imbalances on baseline characteristic. We cannot control for all of them due to their large number. Instead, we automatically select those twenty covariates which have the greatest normalized mean difference between treatment and control

there are a few cases of item non-responses in some baseline randomization variables in the raw data. We impute the missing values by estimating a regression model and include the imputed values in the vector X_i . To account for this imputation, we include a set of indicator variables $MissX_i$ which are equal to 1 if a variable in a specific group has been imputed (to account for collinearity). Fourth, we include fixed effects for FSPs and enumerators. The former account for variation within the FSP, which stem from systematic differences in the client base, differential commitment to the intervention, loan officer qualifications, or other unobservable factors. The latter account for reporting differences across enumerators.²⁵ We present robust standard errors, ϵ_i .

We conduct robustness checks, such as omitting FSP fixed effects, including batch instead of FSP fixed effects, using ten or thirty most imbalanced control variables, using lasso methods to select control variables which best predict assignment to treatment, adding further control variables, and estimating effects on unwinsorized data (described in detail in Section 4-3 of the appendix). We also repeat the analysis on the subsample of observations with only non-missing values, in which case $MissX_i$ is dropped. Additionally, we calculate a model specifications without enumerator fixed effects and one where we drop data from five enumerators who report at least one outlier value in more than 40% of their respondents. While inference on weakly significant estimates changes with the model specifications, our highly significant results which we show in the following remain robust. Finally, we also apply a LASSO procedure, which for each outcome, selects those baseline controls that best predict either treatment assignment or the outcome of interest. Our results remain unchanged.

We also test whether effects differ across the different types of FSPs. To this end, we run regression 1 restricting the sample to the clients in respective FSP type and in the counseling treatment only for better comparability. We provide the following further results in the appendix: In addition to comparing the combined treatment group to the control group, we estimate average treatment effects for each treatment arm separately and test whether there are significant differences in these effects. Finally, we also look at heterogeneous effects across sample sub-groups: Denoting by R_i an interaction covariate, i.e., an indicator of the individual, business or FSP characteristics, we estimate the following general regression model for each of our outcomes:

group. For our full sample which pools all FSPs these variables are: indicator for clients having add. income from full time job, average number of loans per year, indicator for stating tough competition as main barrier, last loan amount in mln Indonesian Rupiah (IDR), indicator for having last loan as business/ individual loan, indicator for stating that business brings high income, indicator for not stating any business barrier, indicator for having written contracts with the workers, indicator for having positive spending on durables, indicator for having no additional income, indicator for wanting to borrow more, indicator for business not being registered, indicator for business being active throughout the year, indicator for business being part of the household, cost per day for workers salaries, indicator for stating that business brings respect, indicator for having a university degree, indicator for keeping records of all transactions.

²⁵This model slightly deviates from the one specified in the PAP. Here, we had included batch fixed effects and also intended to use the full set of randomization variables. We calculated these alternative models as robustness check and find inference to remain unchanged. The reason we had to deviate from the PAP model is the stark, not anticipated variation in the implementation of the treatment between the FSPs. By controlling for 12-1 FSP fixed effects instead of only 3-1 batch fixed effects, we believe that we can capture more variation within each FSP, reducing a potential omitted variable bias, and thereby estimating a more restrictive model. The enumerator fixed effect also make a difference in results and should hence be included in all estimations. In the PAP we had proposed this as a robustness check, but decided to show the more conservative estimates as main results.

$$Y_{i,t=1} = \beta_{ITT}D_i + \gamma_1R_i + \gamma_{IA}D_i \times R_i + \bar{X}_i\beta_3 + X_i\beta_2 + MissX_i\beta_1 + \mu_{FSP_i} + \mu_{Enu_i} + \beta_0 + \epsilon_i. \quad (2)$$

In this model, the parameter of interest is γ_{IA} , which provides the differential impact of treatment for different values of the interaction covariate. We consider as variable R_i only credibly exogenous pre-treatment variables.

5 AVERAGE TREATMENT EFFECTS

5-1 Intermediate outcomes

In line with the expected impact chain laid out above, we first discuss whether the program affected intermediate outcomes on knowledge and business practices. Table 2 contains the results. Columns (3) and (4) contain the ITT point estimates and standard errors, outcome variables are displayed on the left.²⁶

Table 2: AVERAGE TREATMENT EFFECTS ON INTERMEDIATE OUTCOMES

Outcome	N	Control		Estimates		
		Mean (1)	SD (2)	β_{ITT} (3)	SE (4)	
Panel A: Program Participation						
Share of clients reporting being aware of the support that FSP is providing	3873	0.352	0.478	0.066	0.014	****
Share of clients reporting having been offered support from FSP	3873	0.238	0.426	0.086	0.013	****
Share of clients reporting having participated in the program	3873	0.136	0.343	0.102	0.012	****
Panel B: Knowledge						
Share of marketing knowledge questions answered correctly	3960	0.382	0.311	0.002	0.010	
Share of financial management knowledge questions answered correctly	3966	0.647	0.316	0.000	0.010	
Share of clients not knowing the payment type	3303	0.114	0.318	-0.015	0.011	
Panel C: Business Practices						
Share of marketing practices adopted ^{n.m.}	3975	0.290	0.318	0.004	0.010	
Nr. of different marketing forms used ^{n.m.}	3975	0.245	0.511	0.017	0.017	
Share of financial management practices adopted ^{n.m.}	3975	0.403	0.335	-0.000	0.010	
Share of clients keeping business and HH finances separately	3611	0.428	0.495	-0.019	0.017	
Share of clients investing profit into the business	3599	0.655	0.476	0.002	0.016	
Share of clients preparing a business/ financial plan	3609	0.429	0.495	0.022	0.016	
Business plan includes cash flow	1543	0.073	0.260	0.029	0.014	**

- ▶ *Note:* This table shows intermediate outcome variables on the left, statistics on top. Same clients are followed over time.
- ▶ *Sample:* Estimation sample (N = 3,975). Sample size varies between variables due to item nonresponse and conditional questions.
- ▶ *Source:* Endline survey (2018 - 2019).
- ▶ Columns (1)-(2) display the control group mean and standard deviation. Columns (3)-(4) present regression results, controlling for age, gender, the twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, enumerator and FSP fixed effects. We present robust standard errors.
- ▶ The superscript *n.m.* indicates that missing values were interpreted as zero to generate index variables.
- ▶ The statistical significance is given as follows: * indicates $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.
- ▶ See Section 4-3 in the appendix for robustness checks.

As expected, clients from the treatment group were significantly more likely to be aware of the program, to have been offered the support from the FSP, and to have participated in the program.

²⁶To present results more concisely, we deviate from the PAP by neglecting the following outcomes: whether the business is exporting outside of Indonesia, is registered, and is paying tax. We also do not show estimates on content of business plan other than cashflow. There are no effects on any of these outcomes. We also do not show estimates on individual indicators which we aggregated as indices (knowledge and business practices).

To test whether treatment improved knowledge on the training topics, we asked a set of three questions on marketing and financial planning each. The questions were taken directly from the original ILO training material. The main outcome variables of interest are the shares of questions answered correctly in each of the two training topics. We find no significant effects on these outcomes, with the point estimates being very close to zero. Note that in the control group, knowledge on financial management was wider-spread than on marketing: The average control group client answered two questions on financial management correctly, but only one on marketing. We further tested whether treated clients are more likely to know their basic loan conditions, in particular their payment modalities (interest rate, profit sharing agreement), but find no effect.

To test whether treatment led to behavioral changes in marketing and financial management practices, we asked two batteries of five questions each regarding two training topics. These questions were taken from De Mel et al. (2014), who evaluate the SIYB training intervention in Sri Lanka. Regarding marketing behavior, we measure the share of five desired practices (e.g., visiting competitors, asking customers, using any kind of advertisement) that the client reports using. Regarding financial management behavior, we report the share of seven practices (e.g., frequency of reviewing the financial performance of the business). Contrary to De Mel et al. (2014) we find no significant effect of the treatment on these practices on average, which may be due to a different target group. We ask additional questions on marketing and financial management practices; specifically, the number of marketing channels used, whether the client keeps business and household finances separate, whether profits are re-invested into the business, and whether clients prepare a business/financial plan. We also fail to detect changes in these outcomes, except for a significant and positive increase in the clients whose business plan includes cash flow analysis. This effect is robust across model specification, as shown in Section 4-3 in the appendix. Given that in MSE finance it is important to match repayment schedules with the business' cashflow, loan officers might have stressed this aspect in their training and/or counseling. This finding is hence plausible and also important for leveraging the whole potential of access to finance.

5-2 Downstream outcomes

The program aimed to achieve impact on three levels: Business outcomes, living standard and FSPs financials. Accordingly, we group downstream outcomes in these three categories. Table 3 contains the results. As before, Columns (3) and (4) contain the ITT point estimates and standard errors, outcome variables are displayed on the left.²⁷

Given the very limited effects we find on intermediate outcomes, it is little surprising that we find no indication of business growth or increased profitability. Specifically, we find no

²⁷Again, in the interest of a concise presentation, we deviate from the PAP by neglecting minor outcomes such as the number of casual and permanent workers, and expenses on durable assets. There are no effects on any of these outcomes.

Table 3: AVERAGE TREATMENT EFFECTS ON DOWNSTREAM OUTCOMES

Outcome	N	Control		Estimates	
		Mean (1)	SD (2)	β_{ITT} (3)	SE (4)
Panel A: Business Financials					
Log of revenue in the last 30 days in mln IDR ^{99p}	2717	1.748	1.917	0.110	0.072
Nr. of permanent workers	3626	1.883	4.687	-0.155	0.144
Nr. of permanent and casual workers (sum) ^{99p}	3631	3.949	5.375	0.089	0.179
Log of total cost of business in the last 30 days in mln IDR ^{99p}	3975	-0.883	5.154	-0.098	0.160
Log of profit generated in the last 30 days in mln IDR ^{99p}	2962	0.303	3.248	0.133	0.120
Log of profit in the worst month mln IDR ^{99p}	3027	-0.404	3.603	0.160	0.133
Log of profit in the best month in mln IDR ^{99p}	3040	1.261	2.144	0.107	0.080
Share of business earnings covers the exp. of this business	3592	0.909	0.288	-0.010	0.010
Profit increased during the last 6 months	3579	0.327	0.469	0.010	0.017
Business perception index (standardized score)	3933	-0.028	1.005	0.005	0.032
Nr. of barriers for business	3975	1.110	0.843	0.012	0.027
Panel B: Household Financials					
Log of total savings from all sources in mln IDR ^{90p}	2050	-2.469	6.159	-0.178	0.266
Share of clients reporting increase in HH exp. in the last 6 months	3925	0.459	0.499	0.014	0.017
Log of HH exp. on non-durables in the last 30 days in mln IDR ^{99p}	3958	0.621	1.099	-0.031	0.038
Life satisfaction (1=worst, 10=best)	3877	7.349	1.806	-0.023	0.058
Difference between life satisfaction now and two yrs. ago	3852	0.415	1.727	-0.089	0.060
Panel C: Loan Behaviour					
Current/last loan used for productive purposes	3303	0.717	0.451	-0.020	0.016
Currently in loan default or behind with repayments for any loan	2734	0.190	0.392	-0.018	0.015

- ▶ *Note:* This table shows downstream outcome variables on the left, statistics on top. Same clients are followed over time.
- ▶ *Sample:* Estimation sample (N = 3,975). Sample size varies between variables due to item nonresponse and conditional questions.
- ▶ *Source:* Endline survey (2018 - 2019).
- ▶ Columns (1)-(2) display the control group mean and standard deviation. Columns (3)-(4) present regression results, controlling for age, gender, the twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, enumerator and FSP fixed effects. We present robust standard errors.
- ▶ The superscript *np.* indicates the winsorizing level.
- ▶ The statistical significance is given as follows: * indicates $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.
- ▶ See Section 4-3 in the appendix for robustness checks.

effect on the log of revenues, costs or profits during the last thirty days or on the number of permanent workers.²⁸ Our quantitative measurement are heavily affected by noise, which we already expected based on similar studies (De Mel et al. 2014). To account for this, we also measured two binary outcomes: Whether earnings cover business expenses and whether profits increased in the last six months. We find no effects on these variables either. We further include a number of outcomes which proxy the optimism and entrepreneurial attitudes in our sample. We asked about attitudes towards currently running a business in Indonesia, i.e., whether it is perceived as complicated, risky, financially rewarding, earns respect, satisfaction and/or gives a feeling of security. We aggregated the answers into a standardized score, which we call the business perception index. Additionally, we asked about the perceived challenges and barriers to business development and counted the number of mentioned barriers. Again, we observe no significant changes.

Furthermore, we tested a number of outcomes which relate to the clients' personal lives, i.e., total savings, log of and increase in household expenditures, life satisfaction and the change thereof during the past two years. We find no effects on these variables. Finally, we test whether treatment affected loan behavior. The large majority of clients state that they used their last loan for productive purposes and this remains unchanged by the program. Note that the share of clients being currently in loan default or behind in repayments is high in the control group (19.0%). Although the point estimate of the program effect on this variable is negative, it is

²⁸We log-transformed quantitative variables due to their skewed distribution. Results are robust when taking the original variables.

insignificant.

In summary, we find no statistical evidence that the intervention has transformed the average financial situation of the MSEs or the household, business attitudes, life satisfaction or loan behavior, at least not in the time period considered in this study. This is consistent with there being no average increase in knowledge or change in business practices, except for including cash flows in the business plan.

Since average treatment effects might mask heterogeneity, we also analyze differential effects by entrepreneur or business characteristics, and by treatment arm. We find no indication for heterogeneous treatment effects on intermediate or downstream outcomes, as described in Appendix 4-1 and Appendix 4-2.

6 TREATMENT EFFECTS BY FSP

The intervention was implemented by a diverse set of partner FSPs, namely six cooperatives, five rural banks and one development bank, and we here analyze how effects differ across these. As before mentioned, cooperatives offered three treatment arms, whereas the banks offered only counseling. For better comparability, we restrict attention to clients assigned to the counseling treatment or control group within cooperatives as well. Table 4 contains the results for intermediate outcomes, where the columns describe the sample size, control mean and standard deviation, as well as three ITT point estimates and standard errors for the counseling treatment in cooperatives (Columns (3)-(4)), rural banks (Columns (5)-(6)), and the development bank (Columns (7)-(8)) respectively.

Whereas we find some weakly significant results in all subsamples, there are no highly significant estimates among cooperatives and the development bank and the directions of observed coefficients here also do not paint a coherent picture. In contrast, the results restricted to the clients of rural banks give rise to some more optimism. Except for financial knowledge, the coefficient estimates for the main aggregate indices, i.e., marketing knowledge, marketing practices and financial management practices, are all positive. The sizable increase in the number of different marketing forms used is highly significant. Given the consistency of the direction, albeit not magnitude, of the impact on various outcomes we conclude that the intervention had a positive, yet small impact on the knowledge and practices for rural bank clients. Among downstream outcomes, which we report in Table D.8 in Appendix D, there are no significant changes.

Table 4: EFFECTS ON INTERMEDIATE OUTCOMES BY TYPE OF FSP (COUNSELING ONLY TREATMENT)

Outcome	Control (All)		Cooperatives (C only)				Rural Banks			Dev. Bank			
	Mean (1)	SD (2)	N	$\beta_{ITT}^{Coop.}$ (3)	SE (4)		N	β_{ITT}^{Rural} (5)	SE (6)	N	$\beta_{ITT}^{Dev.}$ (7)	SE (8)	
Panel A: Program Participation													
Share of clients reporting being aware of the support that FSP is providing	0.636	0.482	1234	0.073	0.026	***	1112	0.010	0.018	290	0.044	0.045	
Share of clients reporting having been offered support from FSP	0.443	0.497	1234	0.055	0.027	**	1112	0.010	0.014	290	0.032	0.037	
Share of clients reporting having participated in the program	0.265	0.442	1234	0.076	0.026	***	1112	0.011	0.010	290	0.033	0.022	
Panel B: Knowledge													
Share of marketing knowledge questions answered correctly	0.389	0.309	1272	-0.028	0.018		1124	0.031	0.018	*	295	0.049	0.037
Share of financial management knowledge questions answered correctly	0.659	0.317	1276	0.012	0.016		1126	-0.004	0.016		294	0.038	0.033
Share of clients not knowing the payment type	0.147	0.354	996	-0.001	0.022		1025	-0.007	0.014		278	-0.019	0.037
Panel C: Business Practices													
Marketing practices index ^{n.m.}	1.508	1.584	1277	0.035	0.083		1129	0.119	0.081		296	-0.273	0.193
Nr. of different marketing forms used ^{n.m.}	0.284	0.527	1277	0.015	0.030		1129	0.076	0.026	***	296	-0.099	0.079
Financial management practices index ^{n.m.}	2.903	2.375	1277	-0.106	0.121		1129	0.007	0.121		296	0.172	0.256
Share of clients keeping business and HH finances separately	0.468	0.499	1189	-0.026	0.028		951	-0.010	0.032		286	-0.044	0.058
Share of clients investing profit into the business	0.646	0.479	1186	0.008	0.026		954	0.022	0.027		285	-0.019	0.055
Share of clients preparing a business/ financial plan	0.420	0.494	1185	-0.018	0.027		958	0.069	0.030	**	287	0.061	0.055
Business plan includes cash flow	0.093	0.291	476	0.043	0.025	*	445	0.015	0.024		131	0.061	0.037

► *Note:* This table shows intermediate outcome variables on the left, the different samples on top. The same clients are followed over time.

► *Sample:* Estimation sample, counseling only treatment and control groups (N=2,692).

► *Source:* Endline survey (2018 - 2019).

► Columns (1)-(2) display the control group mean and standard deviation. In Columns (3)-(8) we present regression results. In all regressions we control for age, gender, the twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, enumerator and FSP fixed effects, and present robust standard errors. In Columns (3)-(4) we present results for cooperatives, considering only the counseling treatment and control group. in Columns (5)-(6) we present results for rural banks, in Columns (7)-(8) for development banks.

► The superscript *n.m.* indicates that missing values were interpreted as zero to generate index variables.

► The statistical significance is given as follows: * p < 0.1, ** p < 0.05, *** p < 0.01, **** indicates p < 0.001.

► Table D.8 in Appendix D contains results for downstream outcomes.

To further analyze a potential impact of the intervention among rural banks, we go further into detail and run a regression model similar to equation 2, but interacting the treatment indicator on the FSP identifier. We observe positive results for rural banks. Upon closer investigation these results are mainly driven by FSP 8. For this purpose, the regressions are run separately for each FSP. Figure 5 graphically illustrates a selected intermediate result, the share of marketing knowledge questions answered correctly. We observe, that FSP 8 stands out with a statistically significant program impact of an 8.5 percentage points increase in marketing knowledge. The null hypothesis that all FSP effects were of similar size is rejected with a p-value of 0.05 and this increase is significant with a p-value below 0.001 and therefore robust against multiple hypotheses testing. Correspondingly, the lower figure captures a precisely estimated impact of 17.5 percentage points increase in the share of clients preparing a business/ financial plan at FSP 8.²⁹

To further assess the plausibility of our these results and in an attempt to align them, we conduct a mediation analysis for FSP 8, using the model derived in Imai, Keele, and Tingley (2010) and implemented in Stata in Hicks and Tingley (2011). Specifically, we estimate the average causal mediation effect of the three knowledge outcomes on the six business practices as well as two main downstream outcomes, i.e., log profit and whether earnings cover costs.³⁰ Table 5 contains the results. For example, Columns (1) - (2) contain the estimate, standard error, and stars indicating significance for the mediation effect of the marketing knowledge index on further downstream outcomes. We estimate significant and positive effects for the mediation effect of marketing knowledge on preparing a business plan and on profits over last 30 days, suggesting a direct impact chain between marketing knowledge and business planning / profits in FSP 8.

A causal interpretation of the mediation effect would require assuming sequential ignorability, which we cannot test and which might not hold in our context. However, our result is in line with the fact that we estimate significant effects of the intervention on marketing knowledge and business planning for FSP 8. Therefore, we interpret the estimates as underlining the plausibility of our result that FSP 8 indeed achieved positive effects on intermediate outcomes.

6-1 Discussion

We find no indication that entrepreneur or business characteristics influence the program's impact, nor does treatment mode (training, counseling or both) seem to make a difference on average (Appendix 4-1 and Appendix 4-2). The only notable factor we find driving results is the respective FSP. This is an important result as organizations aiming to upscale their programs will likely need to rely on a variety of implementing partners. In principle, differential impacts

²⁹We present detailed information for all FSPs (as fixed effects interacted with the treatment) in Appendix D.

³⁰Due to the smaller sample size, we cannot estimate effects on including a cash flow in the business plan.

Table 5: AVERAGE CAUSAL MEDIATION EFFECT OF KNOWLEDGE ON BUSINESS PRACTICES - ONLY FSP 8

Outcome	Marketing knowledge		Fin.mgmt. knowledge		Knowing payment type		
	$ACME_1$	SE	$ACME_2$	SE	$ACME_3$	SE	
	(1)	(2)	(3)	(4)	(5)	(6)	
Financial management practices index ^{n.m.}	0.014	0.009	*	0.018	0.013	-0.002	0.006
Marketing practices index ^{n.m.}	0.013	0.011		0.007	0.008	0.003	0.007
Nr. of different marketing forms used ^{n.m.}	-0.003	0.007		0.005	0.008	-0.001	0.004
Profit generated in the last 30 days in mln IDR	0.021	0.010	**	0.001	0.004		
Share of business earnings covers the exp. of this business	0.005	0.008		0.004	0.006	-0.001	0.004
Share of clients investing profit into the business	-0.001	0.010		0.002	0.005	-0.008	0.014
Share of clients keeping business and HH finances separately	-0.007	0.010		-0.002	0.005	0.004	0.008
Share of clients preparing a business/ financial plan	0.021	0.012	**	0.010	0.014	-0.011	0.018

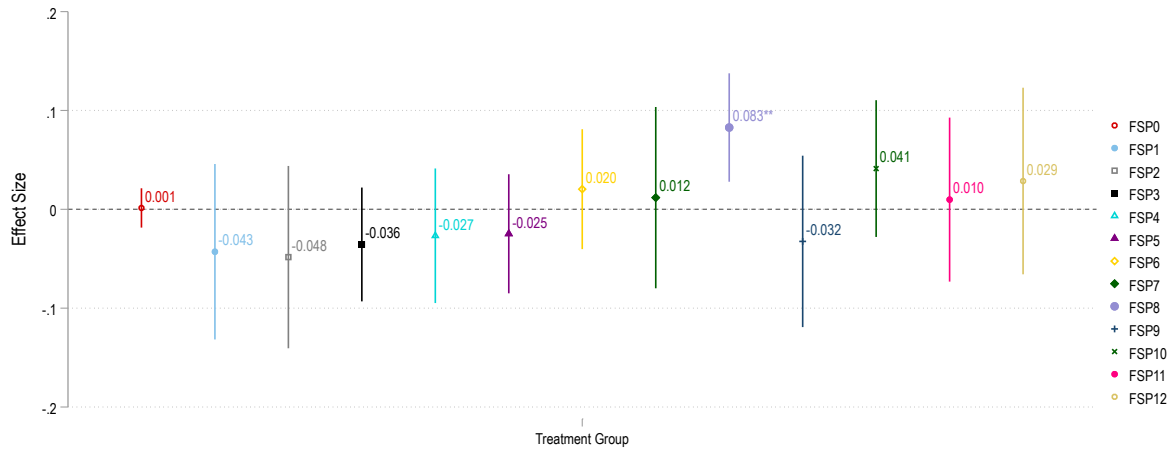
► *Note:* This table shows business practice outcome variables on the left, the different knowledge outcomes on top.
► Sample: FSP 8 (N=314).
► Source: Endline survey (2018 - 2019).
► Columns (1), (3) and (5) contain the average causal mediation effect (ACME) of the respective knowledge outcome on the business practice outcome, Columns (2), (4) and (6) the respective standard errors. All estimates are calculated following the model derived in Imai et al. 2010 and implemented in Stata in Hicks and Tingley 2011.
► The superscript *n.m.* indicates that missing values were interpreted as zero to generate index variables.
► The statistical significance is given as follows: * p < 0.1, ** p < 0.05, *** p < 0.01, **** indicates p < 0.001.

across partner institutions can be due to (1) the treatment reception or (2) its delivery. That is, either the institutions serve different clients, or the institutions implemented the treatment differently.

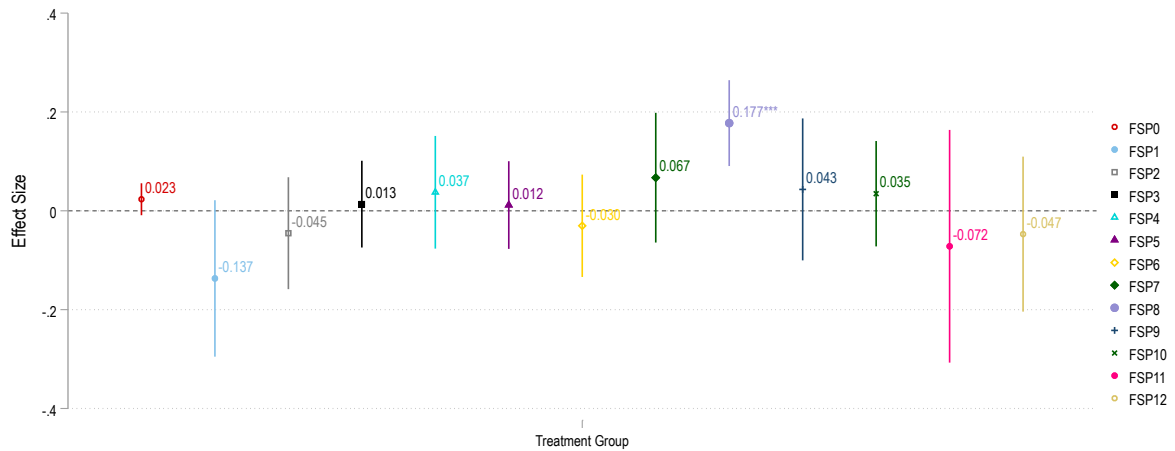
Regarding the first possible explanation, the largest differences in the client base likely exist between the three types of institutions as groups. For example, cooperatives have a larger share of female clients, and the development bank serves larger MSEs, see Table B.2 in Appendix B. Our analysis of heterogeneous effects however suggests that impact does not depend on observable characteristics to any measurable extent. It is however possible that unobservable characteristics remain, such as the willingness to learn and innovate, and that rural banks are, on average, more successful than credit cooperatives in selecting entrepreneurs along unobservable dimensions which predict impact heterogeneity. This could for example be because rural banks employ more experienced loan officers or have more thorough lending procedures in place.

Regarding the second possible explanation, differential treatment implementation, three explanatory factors might play a role. First, the different types of FSPs were exposed to the treatment for different periods of time and this phase-in was not random. To be precise, banks offered the services at a later point of time than cooperatives, so we might detect short-term effects here which are no longer present at cooperatives. Second, loan officers at banks might be higher qualified than at cooperatives and hence better suited as trainers/counselors. This seems likely as salaries of loan officers in rural banks exceed those of loan officers in credit cooperatives by an approximate factor 1.5. Third, the intensity of treatment implementation varies across FSPs, as shown in Section 3-4. Whereas the first two arguments can plausibly explain differences between the three types of FSPs, only the third is able to explain the differences between individual rural banks. The consistent and relatively large effects we estimate for FSP 8 are in line with the fact that this FSP showed the highest participation rate in the monitoring system among rural banks, see Figure C.1. This suggests that this institution showed a higher implementation fidelity.

Figure 5: SELECTED OUTCOMES - BY FSP



Results from separate regressions by FSP. Test whether FSPn * (any treatment) coefficients are equal is rejected with p-value 0.049.



Results from separate regressions by FSP. Test whether FSPn * (any treatment) coefficients are equal is rejected with p-value 0.000.

Note: The top figure displays the marginal effects of comparing program uptake rate across the treatment and control group clients, disaggregated by the twelve FSPs. The outcome is an indicator for “marketing knowledge questions answered correctly” as reported by clients in the endline survey. The bottom figure displays the marginal effects for the outcome “business plan includes cash flow” across the treatment and control group clients, disaggregated by the twelve FSPs. FSP0 refers to regression results for all FSPs combined.

- Source: Endline survey (2018 - 2019).
- Results from separate regressions by FSP, controlling for age, gender, the twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, and enumerator fixed effects. We present robust standard errors.
- Note that counseling was offered in all FSPs, whereby FSP 1 to 6 offered all three treatment arms and FSP 7 to 12 offered counseling only. Self-reported participation in the counseling sessions likely suffers from larger measurement error, likely due to the fact that counseling was done as part of regular loan collection routines.
- Corresponding LATE results reported in Figure D.4.

7 CONCLUSION

Accounting for an overwhelming majority of businesses, MSEs are the backbone of many developing and emerging economies (Ayyagari, Beck, and Demirguc-Kunt 2007; de Mel et al. 2008). Frequently, they are the only source of employment for individuals who lack access to the formal labor market. The struggle against micro-level inhibitors to MSE growth has long focused on financial constraints (e.g., Banerjee, Duflo, Glennerster, and Kinnan 2015), but the focus has recently shifted to addressing the lack of business and managerial skills. Practitioners have taken up this idea, yet the accompanying growing body of evidence has remained critical about the credibly identifiable benefits. The academic attention is now shifting to identifying the ways forward, analyzing potential methodological and practical limitations to greater impacts. With this study, we have confirmed the need for critical revisions, yet also offer a way forward by shifting the attention to better identifying implementing partners.

In summary, using an RCT with 3,975 microfinance clients, we evaluate a pilot training and counseling intervention, which was initiated by the ILO as one intervention within the broader PROMISE-IMPACT program in Indonesia. The intervention built the capacities of loan officers of participating FSPs to provide classroom training and individual counseling to their MSE clients. The appeal of this approach is apparent: Classroom training is cost-efficient and easily replicated, and even individual counseling can be cost-efficient if delivered through loan officers of FSPs that themselves benefit from improved loan behavior of their clients.

To start with, we find no significant effects of the training and/or counseling intervention on downstream outcomes averaged over all FSPs, such as profits, household spending or business attitudes. Among intermediate outcomes, i.e., knowledge and business practices, the only robustly significant and positive outcome is a 2.9 percentage point increase in the share of clients whose business plan includes a cashflow analysis. The control group mean for this variable is 7.3%, suggesting that the effect is sizable in magnitude. Matching loan repayment schedules to actual business cashflow is important to leverage the whole potential of access to finance for both, lenders and borrowers. Hence, loan officers in their training/counseling might either have focused on what they knew best or what was most beneficial to their FSP. We also find no impacts when experimentally evaluating more individualized modes of implementation. We conclude that overall the program was not successful in helping entrepreneurs grow their businesses within the considered timeframe.

Yet while the intervention is of relatively low intensity another aspect may mask potential impacts. For this pilot, ILO has collaborated with with twelve FSPs which implies a longer impact chain and hence a loss of control compared to direct training delivery. In parallel, the research focused simultaneously on several partner institution enabling us to directly compare the impact achieved in different types of financial institutions. Consequently, a novel finding of our study is then that effects vary across MFI partner institutions. Selecting these is the first step in any intervention implementation, yet its importance has been little discussed or

empirically analyzed in the literature. Exploiting the fact that ILO works with twelve independent FSPs spanning three different institutional set-ups we can present consistent, albeit small, improvements in knowledge and practice outcomes among clients from rural banks. Within rural banks, one FSP achieved particularly large impact on knowledge and practice outcomes. In fact, this FSP also showed the highest implementation fidelity among rural banks. The positive effects could be due to heterogeneous effects on client characteristics which are unobservable to us if rural banks are more successful in selecting high potential entrepreneurs as their clients. It could also be due to higher quality of training if loan officers in rural banks are better educated and/or more experienced. The uncertainties about institutional characteristics of successful intervention partners imply fruitful scope for more research. Research which is in general needed for a better understanding of how programs can be scaled-up effectively and efficiently across partners and countries.

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Appendices

A ADDITIONAL INFORMATION ON THE FSPs AND THE PROGRAM

1-1 Course outline Training of trainers (ToT)

Day 1:

- Introduction to SIYB program
- Introduction to GYB training package
- SIYB game module 1
- Self-learning GYB training materials

Day 2:

- Presentation skills part 1
- Introduction to SYB training packages
- Principles of adult learning
- Participatory training methods
- Adapting SIYB training for women entrepreneurs
- Self-learning SYB training materials

Day 3:

- Effective use of training tools
- IYB training package
- SIYB game module 2
- Self-learning IYB training materials

Day 4:

- SIYB training cycle: Marketing SIYB program
- Selection and training needs analysis
- SIYB game module 3

Day 5:

- Developing SIYB training session plan
- Presentation skills, part 2
- Manage the logistics of SIYB seminars
- Evaluation of seminar participants

Day 6:

- Entrepreneurial competence
- Generate business ideas
- Choosing a business idea
- SIYB game module 1

Day 7:

- Determining costs of products and services
- Forms of businesses
- Perform follow-up interventions of SIYB
- SIYB game module 2

Day 8:

- Stock control
- Marketing I and II
- Bookkeeping

Day 9:

- Purchasing/buying
- Monitoring and evaluation of SIYB trainings
- ToT SIYB test

Day 10:

- Financial planning I and II
- Partner organization action plan
- Seminar evaluation and closing session

1-2 Course outline Training of counselors (ToC)

Day 1:

- Introduction: Objectives of the training, agenda
- Pre-test: Understanding characteristics of MSEs
- Business counseling
- Adult learning principles and participatory methods, use of visual aids

Day 2:

- Technique of facilitation
- Role play: Individual consulting
- Business game

Day 3:

- Business improvement
- Positioning of products
- 7 P's marketing mix: Product, price, place, promotion, people, process

Day 4:

- Physical evidence
- Planning your business for future: Financial planning
- Planning process, developing business plans

Day 5:

- Using business plans
- Post test
- Action plan and end of seminar evaluation

Table A.1: KEY CHARACTERISTICS OF FSPS

FSP	Batch I (Cooperatives)					
	1	2	3	4	5	6
<i>General</i>						
Established	2007	2007	2008	2001	2004	1959
Branches	8	3	14		24	5
# employees	76	49	226	110	161	174
Total value loans disbursed in last 12 months (mln IDR)	22,386	22	77,107	9,235	138,738	326,607
# active borrowers ('000)	10	3	32	1	19	41
% female borrowers	94	40	100	97	35	100
% clients in rural areas	85	65	100	75	95	75
# active depositors ('000)	10	4	39	2	46	20
<i>Treatment</i>						
# loan officers in ToT	6	4	10	7	7	7
# loan officers in ToC	4	5	4	4	4	3
# client treatment group(s)/ control group	172/ 68	223/ 50	440/ 141	298/ 112	395/ 142	396/ 113
FSP	Batch II (Banks)					
	7	8	9	10	11	12
<i>General</i>						
Established	1978	1952	2002	1961	2006	2015
Branches	21	1	32	41	12	15
# employees	153	250	1,142	4,554	299	237
Total value loans disbursed in last 12 months (mln IDR)	25,291	285	108,467	14,263,823	293,372	147,337
# active borrowers ('000)	9	14	55	290		17 10
% female borrowers		31			43	42
% clients in rural areas	70	70	70	70	70	50
# active depositors ('000)		140	76	5,062	65	43
<i>Treatment</i>						
# loan officers in ToT						
# loan officers in ToC	10	10	10	11	15	10
# client treatment group(s)/ control group	123/ 105	176/ 138	107/ 113	160/ 136	80/ 115	80/ 92

► *Note:* This table shows key characteristics of the FSPs. Characteristics on the left, FSP ID on top.

► Sample: 12 FSPs.

► Source: ILO.

B ADDITIONAL BASELINE STATISTICS AND BALANCE

Table B.2: BASELINE CHARACTERISTICS OF ESTIMATION SAMPLE BY FSP TYPE

	Cooperatives		Rural Banks		Development Banks	
	Mean	Stand. Dev.	Mean	Stand. Dev.	Mean	Stand. Dev.
Panel A: Client Characteristics						
Share of female clients	0.829	0.377	0.459	0.499	0.261	0.440
Average age of client	43.675	9.552	44.484	8.565	45.419	7.878
Total nr. of people in the HH btw 18-65yrs. (incl. the client) ^{99p*}	2.805	1.077	2.774	1.005	2.835	1.028
Share of clients having no education	0.038	0.191	0.024	0.153	0.011	0.106
Share of clients having primary school education	0.349	0.477	0.229	0.420	0.148	0.356
Share of clients having secondary education	0.184	0.388	0.222	0.416	0.204	0.403
Share of clients having vocational education	0.295	0.456	0.421	0.494	0.511	0.500
Share of clients having no add. income	0.558	0.497	0.603	0.489	0.677	0.468
Share of clients having add. income from another business	0.285	0.451	0.198	0.399	0.197	0.398
Panel B: MSE Characteristics						
Nr. of yrs. the business exists ^{99p*}	11.156	8.733	12.183	9.418	12.701	9.173
Share of MSEs not registered	0.839	0.367	0.846	0.361	0.473	0.500
Share of MSEs selling directly at the market	0.529	0.499	0.548	0.498	0.483	0.500
Share of MSEs selling through agents	0.176	0.381	0.134	0.341	0.227	0.419
Share of MSEs that are part of the HH	0.790	0.407	0.548	0.498	0.434	0.496
Share of clients preparing a business/ financial plan	0.502	0.500	0.209	0.407	0.307	0.461
Share of clients keeping record of all transactions	0.327	0.469	0.345	0.476	0.595	0.491
Share of clients keeping business and HH finances separately	0.561	0.496	0.422	0.494	0.591	0.492
Share of clients investing profit into the business	0.631	0.483	0.668	0.471	0.703	0.457
Total nr. of non-family, permanent workers ^{99p*}	0.992	2.280	0.922	2.379	2.468	4.291
Panel C: Loan Behavior						
Average number of loans per year	0.951	0.679	0.631	0.450	0.577	0.336
Share of clients reporting being late with the loan payment at the FSP	0.134	0.340	0.288	0.453	0.157	0.364
Share of clients want to borrow more for business	0.798	0.401	0.566	0.496	0.648	0.478

- *Note:* This table contains selected summary statistics from the baseline survey for the three types of FSPs. The table shows baseline variables on the left, the different samples considered and descriptive statistics on top.
- *Sample:* Estimation sample, i.e., net of attrition (N=2,550 in cooperatives, 1,129 in rural banks, 296 in development banks).
- *Source:* Baseline survey (2017 - 2018).
- Columns (1) - (2) display the mean and standard deviation for cooperatives. Columns (3) - (4) display the mean and standard deviation for rural banks. Columns (5) - (6) display the mean and standard deviation for the development bank.
- The superscript *np* indicates the winsorizing level. We winsorized variables per batch prior to randomization and following an automated rule to define percentiles. * indicates that we re-defined the winsorizing level manually.

Table B.3: BALANCE TESTS (12 FSPs)

Randomization Variables	Baseline Summary				Estimation Sample [- without attrited households -]	
	All				All	Treatment Arms
	(1) Treatment Mean/SE	(2) Control Mean/SE	t-test Difference (1)-(2)	Normalized difference (1)-(2)	t-test Difference (1)-(2)	F-test for joint orthogonality
Share of female clients	0.722 [0.008]	0.604 [0.012]	0.118	0.253	0.122	N/A
Average age of client	44.093 [0.168]	44.213 [0.225]	-0.121	-0.013	-0.057	N/A
Total nr. of people in the HH btw 18-65yrs. (incl. the client) ^{99p*}	2.803 [0.019]	2.789 [0.025]	0.014	0.013	0.018	0.029
Share of clients having no education	0.032 [0.003]	0.027 [0.004]	0.005	0.029	0.006	1.623
Share of clients having primary school education	0.291 [0.008]	0.271 [0.011]	0.020	0.045	0.030	1.004
Share of clients having secondary education	0.195 [0.007]	0.195 [0.010]	-0.001	-0.002	0.004	1.540
Share of clients having vocational education	0.341 [0.009]	0.386 [0.012]	-0.045	-0.094	-0.060	0.614
Share of clients having university education	0.141 [0.006]	0.121 [0.008]	0.021	0.060	0.020	1.760
Total nr. of people in the hh that additionally earn income	1.263 [0.017]	1.216 [0.023]	0.048	0.050	0.029	0.311
Share of clients having no add. income	0.575 [0.009]	0.567 [0.012]	0.009	0.017	0.006	1.415
Share of clients having add. income from another business	0.262 [0.008]	0.252 [0.011]	0.010	0.022	0.015	2.187*
Share of clients having add. income from full time job	0.054 [0.004]	0.077 [0.007]	-0.023*	-0.095	-0.023*	1.367
Share of clients having add. income from oth. sources	0.041 [0.004]	0.037 [0.005]	0.004	0.019	0.004	0.538
Share of clients covering the HH against unforeseen exp.	0.879 [0.006]	0.894 [0.008]	-0.015	-0.046	-0.019	0.519
Nr. of yrs. the business exists ^{99p*}	11.431 [0.162]	11.468 [0.228]	-0.037	-0.004	0.101	0.520
Nr. of yrs. with FSP ^{99p*}	4.494 [0.089]	4.407 [0.116]	0.088	0.018	0.055	0.555
Share of MSEs not registered	0.826 [0.007]	0.812 [0.010]	0.014	0.036	0.014	0.159
Share of MSEs registered as single merchant	0.109 [0.006]	0.114 [0.008]	-0.005	-0.015	-0.006	0.234
Share of MSEs selling directly at the market	0.542 [0.009]	0.536 [0.012]	0.006	0.012	0.012	0.935
Share of MSEs selling through agents	0.162 [0.007]	0.153 [0.009]	0.009	0.025	0.011	0.186

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Table B.3 – Continued from previous page

Randomization Variables	Baseline Summary				Estimation Sample [- without attrited households -]	
	All				All	Treatment Arms
Share of MSEs that are part of the HH	0.711 [0.008]	0.641 [0.012]	0.071	0.152	0.054	0.265
Share of MSEs active throughout the year	0.918 [0.005]	0.902 [0.007]	0.015	0.054	0.017	1.160
Nr. of family worker/s at the start of the business ^{99.5p*}	1.108 [0.021]	1.167 [0.030]	-0.060	-0.051	-0.087	1.745
Share of MSEs having a written contract with workers	0.031 [0.003]	0.035 [0.005]	-0.005	-0.027	-0.006	0.829
Share of MSEs paying workers regularly	0.559 [0.009]	0.542 [0.012]	0.018	0.035	0.022	0.494
Share of clients understanding the 4Ps	0.358 [0.009]	0.313 [0.012]	0.046	0.096	0.046	0.098
Share of clients stating that marketing is important	0.873 [0.006]	0.819 [0.010]	0.054	0.154	0.051	0.047
Share of clients having a customer identification strategy	0.740 [0.008]	0.700 [0.011]	0.040	0.090	0.030	0.848
Share of clients having a strategy to make customers like their product	0.812 [0.007]	0.760 [0.011]	0.052	0.129	0.040	2.251*
Share of clients having a competition strategy	0.766 [0.008]	0.720 [0.011]	0.046	0.107	0.035	0.451
Share of clients preparing a business/ financial plan	0.445 [0.009]	0.369 [0.012]	0.076	0.155	0.078	1.454
Share of clients keeping record of all transactions	0.364 [0.009]	0.364 [0.012]	0.000	0.000	-0.003	1.389
Share of clients keeping business and HH finances separately	0.532 [0.009]	0.506 [0.012]	0.026	0.051	0.018	1.326
Share of clients investing profit into the business	0.646 [0.009]	0.652 [0.012]	-0.006	-0.012	-0.006	0.806
Profit generated in the last 30 days in mln IDR ^{99p**}	5.003 [0.124]	5.505 [0.197]	-0.501	-0.069	-0.333	0.840
Revenue in the last 30 days in mln IDR ^{99p**}	16.932 [0.538]	19.997 [0.920]	-3.065	-0.094	-2.107	0.100
Cost/day for raw material in mln IDR ^{90p**}	1.014 [0.028]	1.032 [0.040]	-0.018	-0.011	0.006	0.177
Cost/day for workers salaries in mln IDR ^{90p**}	0.189 [0.006]	0.191 [0.008]	-0.002	-0.006	0.002	0.557
Cost/day for transport in mln IDR ^{95p**}	0.036 [0.001]	0.035 [0.002]	0.001	0.022	0.002	0.015
Cost/day for equipment or leasing in ths. IDR ^{90p}	0.076 [0.005]	0.072 [0.006]	0.004	0.017	0.006	0.623
Total nr. of non-family, permanent workers ^{99p*}	1.079 [0.044]	1.172 [0.065]	-0.093	-0.037	-0.066	0.142
HH exp. on non-durables in the last 30 days in mln IDR ^{99p**}	2.557 [0.034]	2.643 [0.048]	-0.087	-0.046	-0.050	1.010
HH exp. on educ. for kids in the last 30 days in mln IDR ^{99p*}	0.492	0.499	-0.007	-0.010	-0.012	0.165

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Table B.3 – Continued from previous page

Randomization Variables	Baseline Summary				Estimation Sample [- without attrited households -]	
	All				All	Treatment Arms
HH exp. on food in the last 30 days in mln IDR ^{99p*}	[0.013] 1.247	[0.019] 1.270	-0.024	-0.028	-0.005	0.853
Share of clients having positive spending on durables	[0.015] 0.356	[0.022] 0.426	-0.070	-0.143	-0.076*	1.431
Average number of loans per year	[0.009] 0.879	[0.012] 0.767	0.112*	0.182	0.120**	2.209*
Last loan amount in mln IDR ^{99p**}	[0.012] 16.965	[0.012] 28.286	-11.321*	-0.257	-10.003	0.721
Share of clients having their last loan as business/ individual loan	[0.689] 0.644	[1.305] 0.752	-0.108	-0.231	-0.106	0.597
Share of clients reporting being late with the loan payment at the FSP	[0.009] 0.163	[0.011] 0.187	-0.025	-0.066	-0.033	0.305
Share of clients want to borrow more for business	[0.007] 0.738	[0.010] 0.701	0.036	0.082	0.034	0.810
Share of clients stating finding market as the main barrier	[0.008] 0.262	[0.011] 0.219	0.043	0.101	0.044	1.320
Share of clients stating expensive raw materials as the main barrier	[0.008] 0.367	[0.010] 0.304	0.063	0.133	0.065	0.674
Share of clients stating little experience as the main barrier	[0.009] 0.048	[0.011] 0.039	0.009	0.043	0.009	0.065
Share of clients stating tough competition as the main barrier ^{NR}	[0.004] 0.280	[0.005] 0.241	0.039**	0.088	0.035	1.113
Share of clients not stating any business barrier ^{NR}	[0.008] 0.176	[0.011] 0.221	-0.045	-0.115	-0.045	1.403
Share of clients stating that business definitely brings high income	[0.007] 0.321	[0.010] 0.310	0.012	0.025	0.011	2.589*
Share of clients stating that business gives security	[0.008] 0.559	[0.012] 0.488	0.071	0.143	0.076	0.877
Share of clients stating that business is definitely complicated	[0.009] 0.213	[0.012] 0.207	0.006	0.015	0.008	0.122
Share of clients stating that business is definitely risky	[0.007] 0.261	[0.010] 0.257	0.005	0.010	0.004	0.234
Share of clients stating that business definitely brings respect	[0.008] 0.489	[0.011] 0.414	0.075	0.150	0.079	1.272
Share of clients stating that business definitely brings satisfaction	[0.009] 0.592	[0.012] 0.540	0.052	0.105	0.056	0.795
Attrition between baseline and endline	[0.009] 0.144	[0.012] 0.176	-0.032*	-0.089	N/A	N/A
N	[0.006] 3095	[0.009] 1608				

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Table B.3 – Continued from previous page

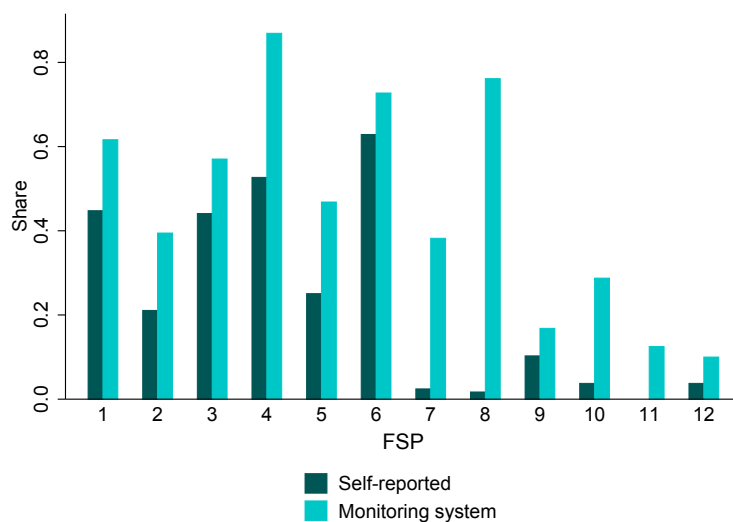
Randomization Variables	Baseline Summary	Estimation Sample [- without attrited households -]	
	All	All	Treatment Arms

- ▶ *Note:* This table contains the summary and balance statistics on all variables from the baseline survey. The table shows variables on the left, the different samples considered and statistics on top. Variables are those which we used for randomization, in addition to other variables of interest (marked with the superscript *NR*).
- ▶ Sample: Baseline sample, i.e. with attrited households (N=4,703), and estimation sample, i.e. net of attrition (N=3,975).
- ▶ Source: Baseline survey (2017 - 2018).
- ▶ Columns (1)-(2) display the mean and standard error for the treatment and control group for the full baseline sample. Column (3) displays the difference in means across treatment and control group, and Column (4) the normalized difference, both columns refer to the full baseline sample. Columns (5) and (6) consider estimation samples, i.e., net of attrition. Column (5) shows the difference in means for the estimation sample, Column (6) displays the p-value of an F-test for joint significance for the three treatment arms, i.e., the treatment arms regressed on the balance variables.
- ▶ All regressions include enumerator- and FSP fixed effects and the covariates variables age and gender. This is in line with the regressions for estimating treatment effects.
- ▶ The superscript *np* indicates the winsorizing level. We winsorized variables per batch prior to randomization and following an automated rule to define percentiles. The stars indicate deviation from this rule: * indicates that we defined the winsorizing level manually, ** indicates that we re-ran the winsorizing routine for all batches combined after the randomization.
- ▶ We test the null hypothesis of equality of means. The statistical significance is given as follows: * indicates $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

C ADDITIONAL PROGRAM DELIVERY AND UPTAKE STATISTICS

Figure C.1 shows the participation rates among clients assigned to treatment group by FSP only. The first bar uses survey data, whereas the second bar uses monitoring data. Note that FSPs 7 to 12 offered only the counseling treatment, where survey data suffers from the above described shortcomings.

Figure C.1: REPORTED PARTICIPATION RATE AMONG TREATMENT GROUP BY FSP



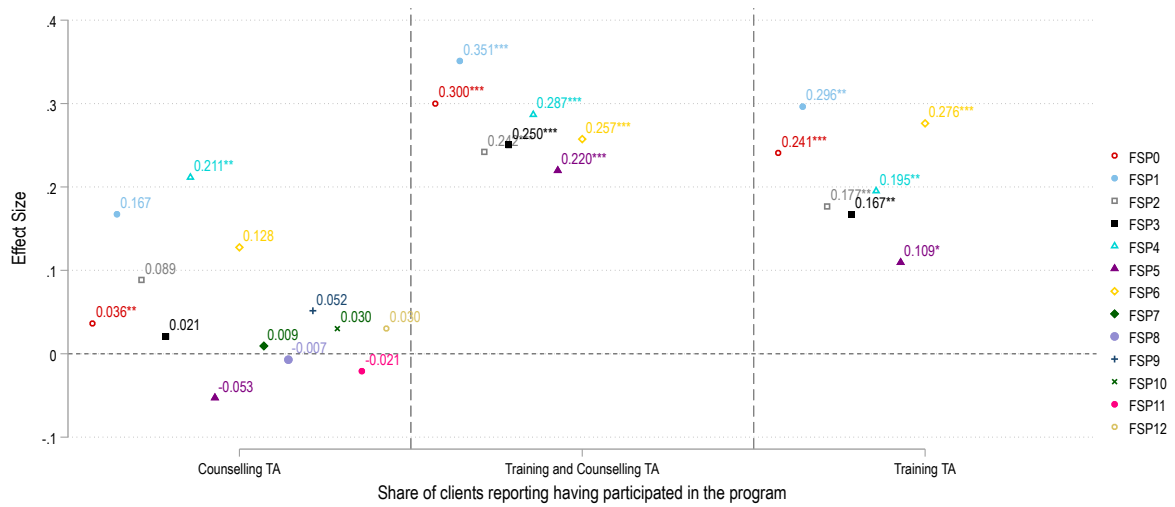
Note: The figure displays the participation rate among the group of clients initially assigned to treatment, disaggregated by the twelve FSPs. The first bar indicates participation as reported by clients in the endline survey. The second bar indicates participation as reported by loan officers in the monitoring system.

► Source: Monitoring data and endline survey (2018 - 2019).

► Note that FSP 1 to 6 offered three treatment arms, whereas FSP 7 to 12 offered counseling only. Self-reported participation in the counseling sessions likely suffers from larger measurement error, likely due to the fact that counseling was done as part of regular loan collection routines.

From Figure C.1 it is evident that some FSPs were more engaged in the intervention than others, with especially low reported implementation fidelity in FSPs 9 to 12.

Figure C.2: PROGRAM IMPLEMENTATION - SELF-REPORTED TAKE-UP - BY FSP AND TREATMENT ARM



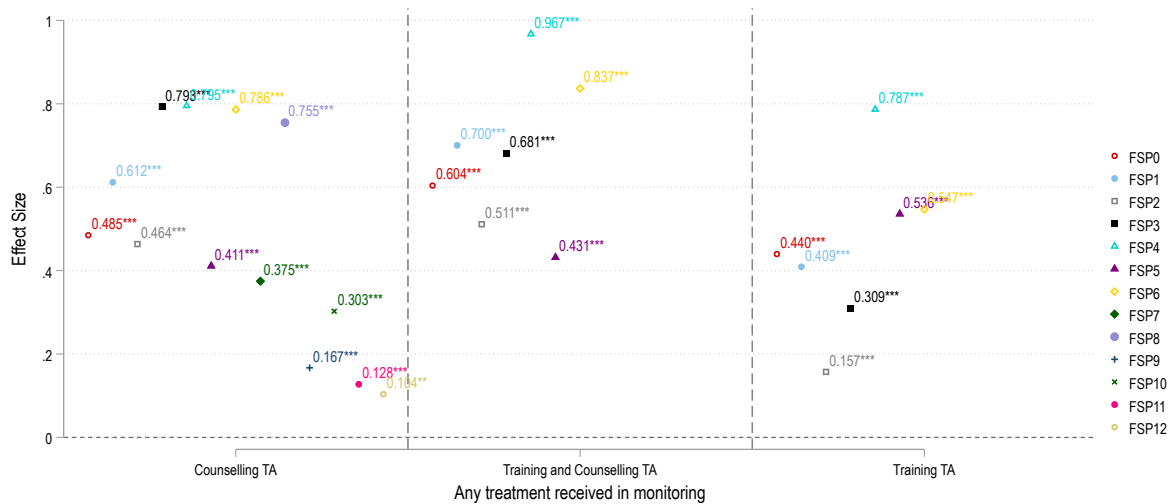
Note: The figure displays the marginal effects of comparing program uptake rate across the treatment and control group clients, disaggregated by the twelve FSPs. The outcome is an indicator of program implementation as reported by clients in the endline survey. FSP0 refers to regression results for all FSPs combined.

► Source: Endline survey (2018 - 2019).

► Results from separate regressions by FSP, controlling for age, gender, the twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, and enumerator fixed effects. We present robust standard errors.

► Note that counseling was offered in all FSPs, whereby FSP 1 to 6 offered all three treatment arms and FSP 7 to 12 offered counseling only. Self-reported participation in the counseling sessions likely suffers from larger measurement error, likely due to the fact that counseling was done as part of regular loan collection routines.

Figure C.3: PROGRAM IMPLEMENTATION - DELIVERY - BY FSP AND TREATMENT ARM



Note: The figure displays the marginal effects of comparing program delivery across the treatment and control group clients, disaggregated by the twelve FSPs. The outcome is an indicator of program implementation as reported by loan officers in the monitoring system. FSP0 refers to regression results for all FSPs combined.

► Source: Monitoring data (2018 - 2019).

► Results from separate regressions by FSP, controlling for age, gender, the twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, and enumerator fixed effects. We present robust standard errors.

► Note that counseling was offered in all FSPs, whereby FSP 1 to 6 offered all three treatment arms and FSP 7 to 12 offered counseling only. Self-reported participation in the counseling sessions likely suffers from larger measurement error, likely due to the fact that counseling was done as part of regular loan collection routines.

D ADDITIONAL RESULTS (IMPACTS)

4-1 Heterogeneous effects

Table D.4 contains heterogeneous effects on intermediate outcomes by entrepreneur and business characteristics calculated using Equation 2. Results on downstream outcomes are contained in Table D.5. We present p-values for the null hypothesis that the interaction effect γ_{IA} is zero (dark grey area). Additionally, we present the p-value for the the null hypothesis that $\gamma_{IA} + \beta_{ITT}$ is zero (light gray areas).

Overall, we find no indication that individual or business characteristics affect the program's impact.³¹ In particular, we cannot confirm findings in previous literature where male participants were more likely to benefit from training (Berge et al. 2015; ?). The last two indicators (Parts (4) and (5)) are motivated by results from Fiala (2018), which suggest that these are important factors mitigating impact.³² We find that an entrepreneur who claims that no-one can replace her in the business is significantly more likely to include a cashflow analysis in her business plan, but find no other differential impact beyond this.

³¹Looking first at the participation outcomes, we find that businesses with smaller loans and businesses that already prepared a business plan at baseline are more likely to be aware of the program. However, these businesses are mostly clients of cooperatives, which offered three treatment arms. As laid out above, clients who were offered training are more likely to report awareness of the treatment, and this explains the observed significant differences across subgroups.

³²Note that we only measured these variables at endline survey and results might hence suffer from endogeneity.

Table D.4: EFFECTS ON INTERMEDIATE OUTCOMES BY ENTREPRENEUR AND BUSINESS CHARACTERISTICS

I. Entrepreneur characteristics Group:	Part (1) Female		Part (2) Age>45		Part (3) More than secondary school education				Part (4) > 5 hours p.d. spent on hh chores (E)				Part (5) No-one to replace in business (E)							
	YES	NO	Diff.	Total	YES	NO	Diff.	Total	YES	NO	Diff.	Total	YES	NO	Diff.	Total				
Panel A: Program Participation																				
Share of clients reporting being aware of the support of FSP	0.069	0.057	---	----	0.046	0.085	---	----	0.069	0.062	---	----	0.057	0.071	---	----	0.076	0.047	---	----
Share of clients reporting having been offered support from FSP	0.077	0.043	---	----	0.052	0.091	---	----	0.030	0.106	---	----	0.046	0.098	---	----	0.100	0.021	---	----
Share of clients reporting having participated in the program	0.152	0.083	---	----	0.204	0.072	---	----	0.176	0.103	---	----	0.094	0.181	---	----	0.115	0.210	---	----
Panel B: Knowledge																				
Share of marketing knowledge questions answered correctly	-0.013	0.031	---	----	0.012	-0.009	---	----	0.007	-0.003	---	----	0.007	0.000	---	----	-0.012	0.011	---	----
Share of financial mgmt knowledge questions answered correctly	0.002	-0.003	---	----	0.009	-0.007	---	----	0.008	-0.007	---	----	-0.003	0.005	---	----	-0.004	-0.006	---	----
Share of clients not knowing the payment type	-0.021	-0.003	---	----	-0.011	-0.018	---	----	-0.011	-0.018	---	----	-0.022	-0.013	---	----	-0.022	-0.007	---	----
Panel C: Business Practices																				
Marketing practices index ^{n.m.}	0.085	-0.113	---	----	0.036	0.009	---	----	0.021	0.018	---	----	-0.034	0.065	---	----	-0.026	0.156	---	----
Nr. of different marketing forms used ^{n.m.}	0.019	0.013	---	----	0.012	0.023	---	----	0.039	-0.001	---	----	0.048	0.006	---	----	0.030	0.003	---	----
Financial management practices index ^{n.m.}	-0.000	-0.009	---	----	0.082	-0.064	---	----	0.032	-0.024	---	----	0.011	0.022	---	----	0.058	-0.050	---	----
Share of clients keeping business and HH finances separately	-0.031	0.003	---	----	-0.012	-0.025	---	----	-0.038	-0.005	---	----	-0.039	-0.004	---	----	-0.015	-0.025	---	----
Share of clients investing profit into the business	-0.002	0.009	---	----	0.021	-0.019	---	----	0.016	-0.011	---	----	0.024	-0.013	---	----	-0.006	0.023	---	----
Share of clients preparing a business/financial plan	0.009	0.048	---	----	0.049	-0.005	---	----	0.016	0.026	---	----	0.032	0.028	---	----	0.017	0.046	---	----
Business plan includes cash flow	0.025	0.037	---	----	-0.006	0.061	---	----	0.029	0.029	---	----	0.017	0.044	---	----	0.041	0.011	---	----
N	2743.000	1232.000			1960.000	2007.000			1792.000	2180.000			1588.000	2248.000			2215.000	1321.000		
II. Business characteristics																				
Group:	Part (6) > 9 years in business		Part (7) Above average profit		Part (8) Above average loan size				Part (9) Above average marketing index				Part (10) Preparing business plan							
	YES	NO	Diff.	Total	YES	NO	Diff.	Total	YES	NO	Diff.	Total	YES	NO	Diff.	Total				
Panel A: Program Participation																				
Share of clients reporting being aware of the support of FSP	0.038	0.092	---	----	0.078	0.052	---	----	0.015	0.123	---	----	0.090	0.032	---	----	0.116	0.033	---	----
Share of clients reporting having been offered support from FSP	0.088	0.054	---	----	0.043	0.090	---	----	0.045	0.087	---	----	0.074	0.062	---	----	0.072	0.070	---	----
Share of clients reporting having participated in the program	0.153	0.130	---	----	0.083	0.192	---	----	0.110	0.164	---	----	0.136	0.154	---	----	0.097	0.182	---	----
Panel B: Knowledge																				
Share of marketing knowledge questions answered correctly	0.008	-0.004	---	----	0.015	-0.012	---	----	0.014	-0.012	---	----	0.000	0.004	---	----	-0.021	0.016	---	----
Share of financial mgmt knowledge questions answered correctly	0.008	-0.008	---	----	0.017	-0.017	---	----	0.002	-0.002	---	----	-0.005	0.009	---	----	-0.016	0.010	---	----
Share of clients not knowing the payment type	-0.029	-0.000	---	----	-0.009	-0.020	---	----	-0.003	-0.031	---	----	-0.010	-0.022	---	----	0.007	-0.028	---	----
Panel C: Business Practices																				
Marketing practices index ^{n.m.}	0.005	0.033	---	----	-0.005	0.037	---	----	0.039	-0.005	---	----	0.019	0.023	---	----	-0.080	0.078	---	----
Nr. of different marketing forms used ^{n.m.}	-0.008	0.043	---	----	0.028	0.006	---	----	0.047	-0.017	---	----	0.024	0.009	---	----	-0.004	0.030	---	----
Financial management practices index ^{n.m.}	0.013	-0.018	---	----	-0.047	0.028	---	----	-0.018	0.016	---	----	-0.009	0.011	---	----	-0.081	0.040	---	----
Share of clients keeping business and HH finances separately	-0.018	-0.020	---	----	-0.015	-0.022	---	----	-0.020	-0.018	---	----	-0.010	-0.031	---	----	-0.012	-0.024	---	----
Share of clients investing profit into the business	-0.007	0.011	---	----	-0.002	0.006	---	----	-0.001	0.005	---	----	-0.006	0.013	---	----	-0.012	0.011	---	----
Share of clients preparing a business/financial plan	0.039	0.005	---	----	0.033	0.009	---	----	0.015	0.030	---	----	0.015	0.034	---	----	0.001	0.036	---	----
Business plan includes cash flow	0.026	0.032	---	----	0.026	0.034	---	----	0.024	0.035	---	----	0.032	0.024	---	----	0.033	0.025	---	----
N	1981.000	1994.000			1987.000	1988.000			1987.000	1988.000			2350.000	1625.000			1617.000	2358.000		

▶ *Note:* This table shows the main outcome variables on the left. **Parts** (1)-(10) on the top indicate heterogeneous effects for different groups.

▶ *Sample:* Estimation sample (N = 3,975).

▶ *Source:* Endline survey (2018 - 2019).

▶ Dark grey columns show significance level of the null hypothesis which assumes the effect to be equal across the two respective groups. Light grey columns show significance level of the null hypothesis of zero effect in the respective YES-group.

▶ **Part** (4): Indicator for more than 5 hours per day spend on household chores (measured only at endline); **Part** (5): Indicator for respondent claiming that no-one can replace her in the business (measured only at endline); **Part** (9): The marketing index is the sum of dummy variables indicating whether the client has (i) a customer identification strategy, (ii) a strategy to make customer like their products, (iii) a competition strategy, (iv) any marketing practices in use; **Part** (10): Indicator for preparing a business plan at baseline.

▶ In all regressions we control for the twenty most imbalanced baseline covariates and dummies indicating imputation in baseline variables, enumerator- and FSP fixed effects, and, if applicable, for age and gender.

▶ The superscript *n.m.* indicates that missing values were interpreted as zero to generate index variables.

▶ The statistical significance is given as follows: * p < 0.1, ** p < 0.05, *** p < 0.01, **** indicates p < 0.001.

▶ Table D.5 contains results for downstream outcomes.

Table D.5: EFFECTS ON DOWNSTREAM OUTCOMES BY ENTREPRENEUR AND BUSINESS CHARACTERISTICS

I. Entrepreneur characteristics Group:	Part (1) Female		Part (2) Age>45		Part (3) More than secondary school education				Part (4) > 5 hours p.d. spent on hh chores (E)				Part (5) No-one to replace in business (E)					
	YES	NO	Diff.	Total	YES	NO	Diff.	Total	YES	NO	Diff.	Total	YES	NO	Diff.	Total		
Panel A: Business Financials and Attitudes																		
Log of revenue in the last 30 days in mln IDR ^{99p}	0.039	0.043			0.152	-0.059	**	-	0.042	0.045			0.041	0.046			0.090	-0.018
Nr. of permanent workers	0.044	-0.542	*		-0.246	-0.057			-0.341	-0.005			0.075	-0.189			-0.095	-0.222
Log of total cost of business in the last 30 days in mln IDR ^{99p}	-0.026	-0.039			0.060	-0.117			-0.050	-0.015			-0.041	0.016			0.015	-0.134
Log of profit generated in the last 30 days in mln IDR ^{99p}	0.004	0.030			0.106	-0.075	*		-0.052	0.064			-0.028	0.052			0.053	-0.047
Log of profit in the worst month mln IDR ^{99p}	0.009	-0.011			0.071	-0.059			-0.048	0.038			-0.065	0.063			0.069	-0.131
Log of profit in the best month in mln IDR ^{99p}	0.104	-0.062	*		0.131	-0.029	*	*	0.029	0.063			-0.036	0.097			0.098	-0.078
Share of business earnings covers the exp. of this business	-0.020	0.008			-0.003	-0.018			0.007	-0.024			-0.013	-0.007			-0.016	0.002
Profit increased during the last 6 months	0.005	0.020			0.011	0.012			-0.005	0.023			0.015	0.007			-0.002	0.029
Business perception index (standardized score)	0.031	-0.046			0.000	0.005			0.061	-0.043	*		0.030	-0.018			0.018	-0.017
Nr. of barriers for business	0.018	-0.000			0.023	0.003			0.007	0.016			0.031	0.017			-0.014	0.056
Panel B: Household Financials and Life Satisfaction																		
Log of total savings from all sources in mln IDR ^{99p}	-0.066	-0.076			-0.086	-0.057			-0.162	0.014			0.061	-0.170			-0.152	0.021
Log of HH exp. on non-durables in the last 30 days in mln IDR ^{99p}	-0.004	-0.018			0.006	-0.025			-0.024	0.005			0.032	-0.029			0.020	-0.030
Share of clients reporting increase in HH exp. in the last 6 months	0.005	0.031			0.020	0.012			0.007	0.021			0.014	0.016			0.021	0.002
Life satisfaction (1=worst, 10=best)	0.028	-0.116			-0.026	-0.022			-0.214	0.135	***	***	-0.171	0.087	**	**	-0.043	0.040
Difference between life satisfaction now and two yrs. ago	-0.113	-0.044			-0.089	-0.084			-0.217	0.020	**	***	-0.017	-0.109			-0.109	-0.005
Panel C: Loan Behaviour																		
Current/last loan used for productive purposes	-0.014	-0.030			-0.008	-0.031			-0.008	-0.029			-0.057	0.002	*	**	-0.040	0.024
Currently in loan default or behind with repayments for any loan	-0.018	-0.018			-0.035	-0.003		*	-0.023	-0.015			-0.050	0.004	*	**	-0.018	-0.028
N	2743.000	1232.000			1960.000	2007.000			1792.000	2180.000			1588.000	2248.000			2215.000	1321.000
II. Business characteristics																		
Group:	Part (6) > 9 years in business		Part (7) Above average profit		Part (8) Above average loan size				Part (9) Above average marketing index				Part (10) Preparing business plan					
	YES	NO	Diff.	Total	YES	NO	Diff.	Total	YES	NO	Diff.	Total	YES	NO	Diff.	Total		
Panel A: Business Financials and Attitudes																		
Log of revenue in the last 30 days in mln IDR ^{99p}	0.060	0.024			0.037	0.043			0.061	0.028			0.005	0.099			0.061	0.029
Nr. of permanent workers	-0.034	-0.285			-0.298	-0.038			-0.307	0.016			-0.194	-0.082			-0.521	0.080
Log of total cost of business in the last 30 days in mln IDR ^{99p}	-0.011	-0.052			-0.060	-0.021			0.023	-0.089			-0.042	0.000			-0.099	0.012
Log of profit generated in the last 30 days in mln IDR ^{99p}	-0.002	0.029			-0.003	0.022			0.065	-0.037			0.004	0.032			0.082	-0.037
Log of profit in the worst month mln IDR ^{99p}	-0.006	0.004			0.022	-0.033			-0.003	0.007			0.033	-0.033			0.137	-0.094
Log of profit in the best month in mln IDR ^{99p}	0.038	0.057			0.036	0.053			0.061	0.034			0.094	-0.008			0.125	-0.007
Share of business earnings covers the exp. of this business	-0.012	-0.009			-0.014	-0.008			0.003	-0.025			0.004	-0.029			-0.004	-0.014
Profit increased during the last 6 months	0.007	0.014			0.021	-0.002			0.026	-0.007			0.001	0.024			0.017	0.006
Business perception index (standardized score)	-0.096	0.102	***	**	-0.049	0.059	*		-0.007	0.018			-0.010	0.023			-0.000	0.008
Nr. of barriers for business	0.020	0.003			-0.014	0.033			0.025	-0.004			-0.026	0.065	*		-0.008	0.024
Panel B: Household Financials and Life Satisfaction																		
Log of total savings from all sources in mln IDR ^{99p}	-0.182	0.037			-0.113	-0.036			-0.044	-0.088			-0.078	-0.042			-0.161	-0.010
Log of HH exp. on non-durables in the last 30 days in mln IDR ^{99p}	-0.009	-0.009			-0.018	-0.004			-0.019	0.004			-0.058	0.061	**		-0.069	0.028
Share of clients reporting increase in HH exp. in the last 6 months	0.009	0.019			0.007	0.022			0.023	0.005			0.026	-0.001			0.005	0.021
Life satisfaction (1=worst, 10=best)	0.031	-0.076			-0.074	0.024			-0.000	-0.047			-0.082	0.060			-0.097	0.022
Difference between life satisfaction now and two yrs. ago	-0.063	-0.115			-0.067	-0.111			-0.059	-0.123			-0.162	0.010	**		-0.194	-0.027
Panel C: Loan Behaviour																		
Current/last loan used for productive purposes	0.005	-0.045			-0.003	-0.039			-0.013	-0.029			-0.016	-0.025			-0.008	-0.028
Currently in loan default or behind with repayments for any loan	-0.023	-0.013			-0.035	-0.000			-0.015	-0.023			-0.003	-0.040			-0.041	-0.005
N	1981.000	1994.000			1987.000	1988.000			1987.000	1988.000			2350.000	1625.000			1617.000	2358.000

► Note: This table shows downstream outcome variables on the left. **Parts** (1)-(10) on the top indicate heterogeneous effects for different groups.

► Sample: Estimation sample (N = 3,975).

► Source: Endline survey (2018 - 2019).

► Dark grey columns show significance level of the null hypothesis which assumes the effect to be equal across the two respective groups. Light grey columns show significance level of the null hypothesis of zero effect in the respective YES-group.

► Part (4): Indicator for more than 5 hours per day spend on household chores (measured only at endline); Part (5): Indicator for respondent claiming that no-one can replace her in the business (measured only at endline); Part (9): The marketing index is the sum of dummy variables indicating whether the client has (i) a customer identification strategy, (ii) a strategy to make customer like their products, (iii) a competition strategy, (iv) any marketing practices in use; Part (10): Indicator for preparing a business plan at baseline.

4-2 By treatment arm

We estimate effects for each of the three treatment arms separately and test for significant differences between them. Since only the cooperatives offered all three treatment arms, this part of our analysis is restricted to FSPs 1 to 6. We regress the outcomes of interest simultaneously on being assigned to one of the three treatment arms and compare the results to a control group which was assigned to not receive any treatment. Table D.6 contains the results for intermediate outcomes, where the columns describe the sample size, control mean and standard deviation in cooperatives as well as the three ITT point estimates and standard errors of the T (Columns (3)-(4)), C (Columns (5)-(6)), and TC treatments (Columns (7)-(8)) respectively. The last three columns present the p-value testing the null-hypothesis of equal effects in two treatment arms respectively.

We cannot confidently reject the null hypothesis that any two treatment coefficients are equal for any outcome. Our hypothesis that we would observe the largest effects in the highest-intensity TC treatment is hence not confirmed in our data.

Table D.6: EFFECTS ON INTERMEDIATE OUTCOMES BY TREATMENT ARM (COOPERATIVES ONLY)

Outcome	N	Control		Training			Counseling			Training&Counseling			P-value for H_0 :					
		Mean (1)	SD (2)	β_{ITT}^T (3)	SE (4)		β_{ITT}^C (5)	SE (6)		β_{ITT}^{TC} (7)	SE (8)		$\beta_{ITT}^T = \beta_{ITT}^C$ (9)	$\beta_{ITT}^T = \beta_{ITT}^{TC}$ (10)	$\beta_{ITT}^C = \beta_{ITT}^{TC}$ (11)			
Panel A: Program Participation																		
Share of clients reporting being aware of the support that FSP is providing	2471	0.636	0.482	0.103	0.025	****	0.070	0.025	***	0.152	0.025	****	0.162	0.030	**	0.000	****	
Share of clients reporting having been offered support from FSP	2471	0.443	0.497	0.160	0.026	****	0.056	0.026	**	0.215	0.026	****	0.000	****	0.034	**	0.000	****
Share of clients reporting having participated in the program	2471	0.265	0.442	0.191	0.026	****	0.076	0.025	***	0.252	0.026	****	0.000	****	0.025	**	0.000	****
Panel B: Marketing Knowledge																		
Share of marketing knowledge questions answered correctly	2541	0.389	0.309	-0.035	0.017	**	-0.028	0.017	*	-0.019	0.016		0.664	0.297		0.550		
Panel C: Financial Management Knowledge																		
Share of financial management knowledge questions answered correctly	2546	0.659	0.317	0.004	0.016		0.010	0.015		-0.006	0.016		0.666	0.528		0.276		
Share of clients not knowing the payment type	2000	0.147	0.354	-0.029	0.020		-0.004	0.021		-0.015	0.020		0.206	0.450		0.598		
Panel D: Marketing Practices																		
Share of marketing practices adopted ^{n.m.}	2550	0.302	0.317	-0.003	0.016		0.004	0.016		-0.016	0.015		0.627	0.377		0.172		
Nr. of different marketing forms used ^{n.m.}	2550	0.284	0.527	-0.024	0.027		0.017	0.029		-0.001	0.027		0.142	0.376		0.534		
Share of MSEs exporting outside Indonesia	2376	0.175	0.380	-0.038	0.021	*	-0.007	0.021		0.005	0.021		0.134	0.038	**	0.571		
Panel E: Financial Management Practices																		
Share of clients keeping business and HH finances separately	2374	0.468	0.499	-0.044	0.028		-0.022	0.027		-0.009	0.028		0.406	0.193		0.609		
Share of clients investing profit into the business	2360	0.646	0.479	-0.030	0.025		-0.002	0.025		0.012	0.025		0.255	0.087	*	0.559		
Share of clients preparing a business/ financial plan	2364	0.420	0.494	-0.010	0.026		-0.021	0.026		0.001	0.026		0.644	0.663		0.368		
Business plan includes cash flow	967	0.093	0.291	0.022	0.022		0.043	0.024	*	0.020	0.023		0.330	0.925		0.321		
Share of financial management practices adopted ^{n.m.}	2550	0.415	0.339	-0.008	0.017		-0.014	0.017		0.012	0.017		0.717	0.231		0.107		

▶ *Note:* This table shows intermediate outcome variables on the left, treatment arms and test statistics on top. Same clients are followed over time.
 ▶ Sample: Batch I (cooperatives) clients (N = 2,550).
 ▶ Source: Endline survey (2018 - 2019).
 ▶ Columns: (1)-(2) control group (N = 626). (3)-(4) training only arm (N = 632). (5)-(6) counseling only arm (N = 651). (7)-(8) training and counseling arm (N = 641). Columns (9) to (11) show the p-values of testing equality of β_{ITT} for two treatment arms respectively.
 ▶ In all regressions we control for age, gender, twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, enumerator- and FSP fixed effects, and present robust standard errors.
 ▶ The superscript *n.m.* indicates that missing values were interpreted as zero to generate index variables.
 ▶ The statistical significance is given as follows: * indicates $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.
 ▶ Table D.7 contains results for downstream outcomes.

Table D.7: EFFECTS ON DOWNSTREAM OUTCOMES BY TREATMENT ARM (COOPERATIVES ONLY)

Outcome	N	Control		Training		Counseling		Training&Counseling		P-value for H_0 :				
		Mean (1)	SD (2)	β_{ITT}^T (3)	SE (4)	β_{ITT}^C (5)	SE (6)	β_{ITT}^{TC} (7)	SE (8)	$\beta_{ITT}^T = \beta_{ITT}^C$ (9)	$\beta_{ITT}^T = \beta_{ITT}^{TC}$ (10)	$\beta_{ITT}^C = \beta_{ITT}^{TC}$ (11)		
Panel A: Business Financials														
Log of revenue in the last 30 days in mln IDR ^{99p}	1755	1.451	1.569	-0.010	0.099	0.007	0.103	0.038	0.089	0.863	0.585	0.729		
Nr. of permanent workers	2377	1.504	3.383	0.144	0.265	-0.073	0.197	-0.219	0.166	0.433	0.176	0.429		
Nr. of permanent and casual workers (sum) ^{99p}	2381	3.218	4.100	-0.007	0.219	-0.007	0.223	-0.274	0.202	0.999	0.188	0.184		
Log of total cost of business in the last 30 days in mln IDR ^{99p}	2550	-0.803	4.666	-0.351	0.265	-0.148	0.259	0.086	0.251	0.428	0.081	*	0.338	
Log of profit generated in the last 30 days in mln IDR ^{99p}	1957	0.165	2.999	-0.273	0.198	0.176	0.179	0.091	0.177	0.015	**	0.047	**	0.602
Log of profit in the worst month mln IDR ^{99p}	2006	-0.580	3.340	0.004	0.202	0.041	0.201	0.058	0.195	0.853	0.782	0.932		
Log of profit in the best month in mln IDR ^{99p}	2012	0.975	1.952	0.087	0.117	0.055	0.118	-0.016	0.118	0.782	0.377	0.541		
Share of business earnings covers the exp. of this business	2358	0.917	0.276	-0.019	0.017	-0.013	0.016	-0.029	0.017	*	0.727	0.567	0.340	
Profit increased during the last 6 months	2345	0.349	0.477	-0.022	0.027	0.022	0.027	-0.005	0.027	0.103	0.533	0.302		
Panel B: Business Attitudes														
Business perception index (standardized score)	2526	-0.096	1.026	0.046	0.053	0.044	0.053	0.024	0.055	0.970	0.671	0.697		
Nr. of barriers for business	2550	1.112	0.800	-0.028	0.043	-0.028	0.040	-0.014	0.041	0.997	0.743	0.736		
Panel C: Household Financials														
Log of total savings from all sources in mln IDR ^{90p}	1225	-1.739	5.240	-0.590	0.415	0.105	0.399	-0.247	0.417	0.081	*	0.418	0.379	
Share of clients reporting increase in HH exp. in the last 6 months	2520	0.454	0.498	0.026	0.028	-0.011	0.027	0.011	0.027	0.163	0.573	0.403		
Log of HH exp. on non-durables in the last 30 days in mln IDR ^{99p}	2538	0.446	1.266	0.024	0.066	-0.084	0.068	-0.057	0.070	0.120	0.263	0.699		
Panel D: Life Satisfaction														
Life satisfaction (1=worst, 10=best)	2480	7.550	1.762	-0.024	0.095	-0.010	0.094	0.032	0.093	0.881	0.532	0.631		
Difference between life satisfaction now and two yrs. ago	2462	0.640	1.669	0.043	0.099	-0.136	0.101	-0.096	0.100	0.069	*	0.156	0.684	
Panel E: Loan Behaviour														
Current/last loan used for productive purposes	2000	0.725	0.447	-0.007	0.027	-0.011	0.027	0.008	0.027	0.893	0.585	0.495		
Currently in loan default or behind with repayments for any loan	1632	0.116	0.321	-0.006	0.020	0.006	0.020	0.025	0.021	0.568	0.131	0.329		

► *Note:* This table shows downstream outcome variables on the left, treatment arms and test statistics on top. Same clients are followed over time.

► *Sample:* Batch I (cooperatives) clients (N = 2,550).

► *Source:* Endline survey (2018 - 2019).

► *Columns:* (1)-(2) control group (N = 626). (3)-(4) training only arm (N = 632). (5)-(6) counseling only arm (N = 651). (7)-(8) training and counseling arm (N = 641). Columns (9) to (11) show the p-values of testing equality of β_{ITT} for two treatment arms respectively.

► In all regressions we control for age, gender, twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, enumerator- and FSP fixed effects, and present robust standard errors.

► The superscript *np.* indicates the winsorizing level.

► The statistical significance is given as follows: * indicates $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Table D.8: EFFECTS ON DOWNSTREAM OUTCOMES BY TYPE OF FSP (COUNSELING ONLY TREATMENT)

Outcome	Control (All)		Cooperatives (C only)			Rural Banks			Dev. Banks		
	Mean (1)	SD (2)	N	$\beta_{ITT}^{Coop.}$ (3)	SE (4)	N	β_{ITT}^{Rural} (5)	SE (6)	N	$\beta_{ITT}^{Dev.}$ (7)	SE (8)
Panel A: Business Financials											
Log of revenue in the last 30 days in mln IDR ^{99p}	1.451	1.569	890	-0.022	0.109	766	0.139	0.139	196	0.426	0.313
Nr. of permanent workers	1.504	3.383	1193	-0.031	0.193	962	-0.441	0.285	287	-0.339	0.670
Nr. of permanent and casual workers (sum) ^{99p}	3.218	4.100	1194	0.072	0.232	962	-0.155	0.383	288	1.483	0.879 *
Log of total cost of business in the last 30 days in mln IDR ^{99p}	-0.803	4.666	1277	-0.143	0.268	1129	-0.056	0.295	296	0.191	0.503
Log of profit generated in the last 30 days in mln IDR ^{99p}	0.165	2.999	970	0.156	0.184	813	0.160	0.203	192	0.301	0.585
Log of profit in the worst month mln IDR ^{99p}	-0.580	3.340	991	0.036	0.207	819	0.461	0.224 **	202	0.369	0.804
Log of profit in the best month in mln IDR ^{99p}	0.975	1.952	994	0.049	0.122	829	0.148	0.139	199	0.865	0.426 **
Share of business earnings covers the exp. of this business	0.917	0.276	1184	-0.010	0.017	953	0.007	0.019	281	-0.007	0.030
Profit increased during the last 6 months	0.349	0.477	1177	0.025	0.028	950	0.049	0.030	284	-0.028	0.054
Panel B: Business Attitudes											
Business perception index (standardized score)	-0.096	1.026	1262	0.050	0.055	1112	-0.051	0.053	295	0.038	0.133
Nr. of barriers for business	1.112	0.800	1277	-0.027	0.041	1129	0.060	0.049	296	-0.018	0.098
Panel C: Household Financials											
Log of total savings from all sources in mln IDR ^{90p}	-1.739	5.240	617	0.048	0.423	688	0.169	0.458	137	-0.946	1.336
Share of clients reporting increase in HH exp. in the last 6 months	0.454	0.498	1262	-0.010	0.028	1113	0.018	0.030	292	0.048	0.060
Log of HH exp. on non-durables in the last 30 days in mln IDR ^{99p}	0.446	1.266	1271	-0.102	0.068	1126	0.013	0.056	294	-0.069	0.117
Panel D: Life Satisfaction											
Life satisfaction (1=worst, 10=best)	7.550	1.762	1237	-0.052	0.097	1110	-0.071	0.097	287	0.213	0.231
Difference between life satisfaction now and two yrs. ago	0.640	1.669	1227	-0.151	0.105	1104	-0.223	0.105 **	286	0.325	0.187 *
Panel E: Loan Behaviour											
Current/last loan used for productive purposes	0.725	0.447	996	-0.024	0.028	1025	-0.048	0.028 *	278	0.033	0.057
Currently in loan default or behind with repayments for any loan	0.116	0.321	836	0.014	0.020	842	-0.069	0.031 **	260	-0.003	0.050

► *Note:* This table shows downstream outcome variables on the left, the different samples on top. The same clients are followed over time.

► Sample: Estimation sample, counseling only treatment and control groups (N=2,692).

► Source: Endline survey (2018 - 2019).

► Columns (1)-(2) display the control group mean and standard deviation. In Columns (3)-(8) we present regression results. In all regressions we control for age, gender, the twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, enumerator and FSP fixed effects, and present robust standard errors. In Columns (3)-(4) we present results for cooperatives, considering only the counseling treatment and control group. In Columns (5)-(6) we present results for rural banks, in Columns (7)-(8) for development banks.

► The superscript *np.* indicates the winsorizing level.

► The statistical significance is given as follows: * indicates $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

We run a regression model similar to equation 2, but interacting the treatment indicator on the FSP identifier. We present results in Table D.9 and D.10 below. We restrict attention to the counseling treatment arm only, with the columns containing the point estimates of the interaction of treatment and FSP indicators. For better overview, we do not show standard errors but indicate statistical significance with stars as usual.

Table D.9: EFFECTS ON INTERMEDIATE OUTCOMES BY FSP (COUNSELING ONLY TREATMENT)

Outcome	FSP 1 β_{FT}	FSP 2 γ_{it}^2	FSP 3 γ_{it}^3	FSP 4 γ_{it}^4	FSP 5 γ_{it}^5	FSP 6 γ_{it}^6	FSP 7 γ_{it}^7	FSP 8 γ_{it}^8	FSP 9 γ_{it}^9	FSP 10 γ_{it}^{10}	FSP 11 γ_{it}^{11}	FSP 12 γ_{it}^{12}
Share of marketing knowledge questions answered correctly	-0.003	-0.045	-0.033	-0.031	-0.027	0.011	0.033	0.091 ***	-0.022	0.062 *	0.017	0.024
Share of financial management knowledge questions answered correctly	0.011	0.003	-0.016	-0.002	-0.008	0.010	-0.021	0.003	0.024	0.013	-0.057	-0.034
Share of clients not knowing the payment type	0.021	-0.006	-0.044	-0.045	-0.015	0.003	-0.019	-0.032	-0.051	-0.041	-0.058 *	-0.022
Share of marketing practices adopted ^{n.m.}	0.012	-0.035	0.003	-0.016	-0.004	-0.012	0.034	0.043	-0.013	-0.069 *	-0.073 **	0.082 *
Nr. of different marketing forms used ^{n.m.}	0.025	-0.038	-0.057 **	0.002	-0.008	0.064	0.120	0.056	0.123 *	-0.135 *	-0.043	0.006
Share of MSEs exporting outside Indonesia	0.009	0.000	-0.030	-0.037	-0.011	0.035	-0.010	0.014	0.045	-0.129 **	-0.074 *	-0.052
Share of clients keeping business and HH finances separately	0.007	-0.027	0.021	-0.014	-0.075	-0.095 *	0.073	-0.058	0.087	-0.058	-0.075	-0.076
Share of clients investing profit into the business	-0.001	0.080	0.045	-0.083	-0.030	0.016	-0.019	0.086	0.073	-0.041	-0.062	0.058
Share of clients preparing a business/ financial plan	-0.019	-0.031	0.030	0.038	0.006	-0.029	0.076	0.208 ****	0.108	0.060	-0.059	-0.036
Business plan includes cash flow	0.024	0.007	0.078	0.007	0.015	0.043	-0.022	-0.027	-0.006	0.034	0.033	0.002
Share of financial management practices adopted ^{n.m.}	-0.016	-0.012	-0.005	0.004	0.017	-0.008	0.045	0.043	0.024	0.026	-0.012	-0.002
Share of clients reporting being aware of the support that FSP is providing	-0.053 ***	0.224 ***	0.092 **	0.165 ***	0.146 ***	0.010	0.033	0.031	0.170 ****	0.073	0.046	0.081
Share of clients reporting having been offered support from FSP	-0.121 ****	0.244 ****	0.191 ****	0.214 ****	0.156 ****	0.081 *	0.131 ****	0.118 ****	0.203 ****	0.141 ****	0.108 ****	0.104 **
Share of clients reporting having participated in the program	-0.135 ****	0.224 ****	0.200 ****	0.257 ****	0.137 ****	0.244 ****	0.144 ****	0.129 ****	0.195 ****	0.152 ****	0.111 ****	0.161 ****

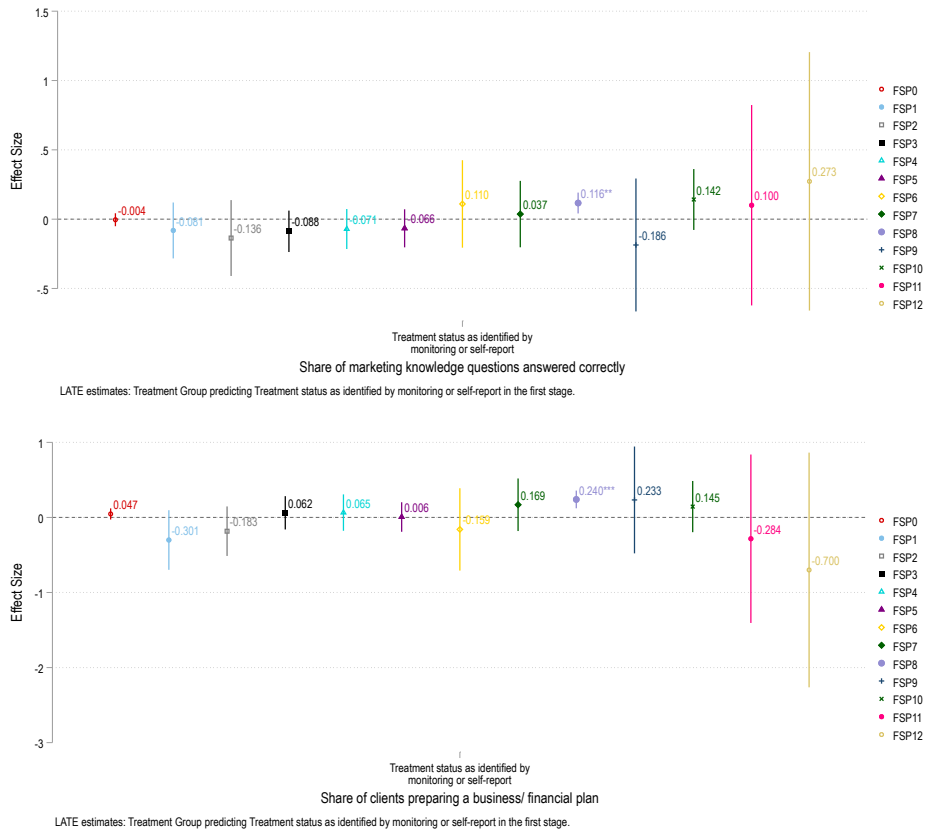
• Note: This table shows intermediate outcome variables on the left, the different FSPs on top. The same clients are followed over time.
 • Sample: Estimation sample, counseling only treatment and control groups (N=2,692).
 • Source: Endline survey (2018 - 2019).
 • The columns contain the point estimate of the interaction of the treatment indicator with the FSP identifier for the twelve FSPs. In all regressions we control for age, gender, twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, enumerator and FSP fixed effects, and present robust standard errors.
 • The superscript *n.m.* indicates that missing values were interpreted as zero to generate index variables.
 • The statistical significance is given as follows: * p < 0.1, ** p < 0.05, *** p < 0.01, **** indicates p < 0.001.
 • Table D.10 contains results for downstream outcomes.

Table D.10: EFFECTS ON DOWNSTREAM OUTCOMES BY FSP (COUNSELING ONLY TREATMENT)

Outcome	FSP 1		FSP 2		FSP 3		FSP 4		FSP 5		FSP 6		FSP 7		FSP 8		FSP 9		FSP 10		FSP 11		FSP 12									
	β_{ITT}	γ_{im}^2	γ_{im}^2	γ_{im}^3	γ_{im}^3	γ_{im}^4	γ_{im}^4	γ_{im}^5	γ_{im}^5	γ_{im}^6	γ_{im}^6	γ_{im}^7	γ_{im}^7	γ_{im}^8	γ_{im}^8	γ_{im}^9	γ_{im}^9	γ_{im}^{10}	γ_{im}^{10}	γ_{im}^{11}	γ_{im}^{11}	γ_{im}^{12}	γ_{im}^{12}									
Log of revenue in the last 30 days in mln IDR ^{99b}	-0.011	0.084	-0.342	0.199	*	-0.095	0.149	0.069	0.189	0.242	0.186	0.102	0.235	0.037	0.179	0.509	0.366	-0.075	0.313	0.516	0.271	*	0.154	0.312	0.150	0.256						
Nr. of permanent workers	-0.023	0.191	-0.478	0.608		0.083	0.239	0.166	0.252	0.567	0.533	-0.420	0.442	-0.021	0.399	-0.953	0.689	-0.123	0.613	-0.329	0.681		-0.280	0.416	-0.309	0.474						
Nr. of permanent and casual workers (sum) ^{99b}	0.177	0.185	-0.910	0.598		0.097	0.287	-0.004	0.400	0.011	0.484	-0.277	0.498	-0.293	0.715	-0.775	0.862	1.003	0.805	1.477	0.855	*	-0.226	0.543	-1.165	0.708						
Log of total cost of business in the last 30 days in mln IDR ^{99b}	-0.003	0.217	-0.992	0.694		-0.293	0.428	-0.696	0.569	0.147	0.420	0.421	0.478	-0.141	0.603	0.504	0.550	-0.835	0.586	-0.015	0.523		-0.959	0.922	1.484	0.838						
Log of profit generated in the last 30 days in mln IDR ^{99b}	0.228	0.148	-0.257	0.578		-0.228	0.287	-0.072	0.484	0.134	0.313	0.169	0.367	-0.237	0.279	0.185	0.506	0.003	0.474	0.033	0.550		0.006	0.628	0.162	0.510						
Log of profit in the worst month mln IDR ^{99b}	-0.008	0.171	-0.370	0.458		-0.294	0.208	-0.332	0.513	0.704	0.398	*	0.396	0.455	-0.213	0.384	0.406	0.534	0.638	0.566	0.241	0.683		0.531	0.485	0.830	0.410					
Log of profit in the best month in mln IDR ^{99b}	0.014	0.099	-0.273	0.168		0.266	0.197	-0.686	0.239	***	0.059	0.222	0.486	0.288	*	-0.098	0.215	0.389	0.349	0.197	0.340		0.682	0.353	*	-0.599	0.562					
Share of business earnings covers the exp. of this business	0.008	0.014	-0.001	0.040		-0.045	0.029	-0.002	0.035	-0.009	0.029		-0.004	0.029	0.003	0.045	-0.018	0.039	-0.004	0.032		-0.009	0.032		0.012	0.088	0.002	0.043				
Profit increased during the last 6 months	0.035	0.023	-0.000	0.061		-0.005	0.046	0.008	0.050	-0.033	0.051		-0.009	0.052	-0.114	0.068	*	0.040	0.057	0.128	0.064	**	-0.064	0.056	-0.062	0.104	-0.011	0.078				
Business perception index (standardized score)	0.007	0.044	-0.020	0.123		0.055	0.085	0.229	0.134	*	-0.094	0.088		0.110	0.093	-0.103	0.110		-0.095	0.102		-0.266	0.123	**	-0.024	0.127	0.173	0.146	-0.020	0.166		
Nr. of barriers for business	-0.007	0.036	0.013	0.088		-0.005	0.064	0.053	0.079	-0.082	0.080		-0.024	0.091	0.324	0.111	***	-0.051	0.102	-0.029	0.103		-0.031	0.095	0.158	0.128	0.041	0.136				
Log of total savings from all sources in mln IDR ^{99b}	0.406	0.335	0.497	1.409		-0.247	0.586	0.576	1.049	-0.554	0.684		-1.631	0.542	***	-1.712	0.815	**	0.644	1.072	1.283	1.050		-1.679	1.183	-0.301	1.209	-0.984	1.154			
Share of clients reporting increase in HH exp. in the last 6 months	-0.023	0.023	0.121	0.070	*	-0.037	0.047	0.016	0.053	0.000	0.051		-0.014	0.053	0.039	0.067	0.061	0.059	-0.008	0.072		0.071	0.061		-0.053	0.076	0.115	0.077				
Log of HH exp. on non-durables in the last 30 days in mln IDR ^{99b}	-0.072	0.058	0.001	0.140		0.107	0.080	0.220	0.206	-0.210	0.120	*	-0.147	0.108	0.137	0.115		-0.006	0.105	0.238	0.142	*	-0.038	0.139	0.027	0.179	0.030	0.141				
Life satisfaction (1=worst, 10=best)	-0.005	0.077	-0.617	0.269	**	0.024	0.157	-0.140	0.165	0.181	0.185		-0.040	0.167	-0.416	0.193	**	0.168	0.172	0.449	0.219	**	0.135	0.218		-0.652	0.283	**	0.059	0.297		
Difference between life satisfaction now and two yrs. ago	-0.098	0.087	-0.378	0.273		0.166	0.180	-0.142	0.172	-0.220	0.169		0.045	0.174	-0.214	0.200		0.133	0.169	0.268	0.248		0.395	0.197	**	-0.969	0.340	***	0.120	0.328		
Current/last loan used for productive purposes	-0.010	0.024	-0.056	0.083		-0.028	0.041	0.026	0.076	-0.028	0.041		0.018	0.054	-0.026	0.063		-0.018	0.058	0.006	0.065		0.034	0.058		-0.039	0.081		-0.165	0.073	**	
Currently in loan default or behind with repayments for any loan	0.003	0.017	-0.138	0.098		-0.002	0.015	0.071	0.053	-0.056	0.058		0.030	0.029	-0.027	0.068		-0.121	0.060	**	0.004	0.064		-0.004	0.048		-0.009	0.077		-0.166	0.085	*

• Note: This table shows downstream outcome variables on the left, the different FSPs on top. The same clients are followed over time.
 • Sample: Estimation sample, counseling only treatment and control groups (N=2,692).
 • Source: Endline survey (2018 - 2019).
 • The columns contain the point estimate of the interaction of the treatment indicator with the FSP identifier for the twelve FSPs. In all regressions we control for age, gender, twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, enumerator and FSP fixed effects, and present robust standard errors.
 • The superscript *op* indicates the winning level.
 • The statistical significance is given as follows: * p < 0.1, ** p < 0.05, *** p < 0.01, **** indicates p < 0.001.

Figure D.4: LOCAL AVERAGE TREATMENT EFFECTS: SHARE OF MARKETING KNOWLEDGE QUESTIONS ANSWERED CORRECTLY - BY FSP



Note: The top figure displays the marginal effects of comparing program uptake rate across the treatment and control group clients, disaggregated by the twelve FSPs. The outcome is an indicator for “marketing knowledge questions answered correctly” as reported by clients in the endline survey. The bottom figure displays the marginal effects for the outcome “business plan includes cash flow” across the treatment and control group clients, disaggregated by the twelve FSPs. FSP0 refers to regression results for all FSPs combined.

- ▶ Source: Endline survey (2018 - 2019).
- ▶ Results from separate regressions by FSP, controlling for age, gender, the twenty most imbalanced baseline covariates, dummies indicating imputation in baseline variables, and enumerator fixed effects. We present robust standard errors.
- ▶ Note that counseling was offered in all FSPs, whereby FSP 1 to 6 offered all three treatment arms and FSP 7 to 12 offered counseling only. Self-reported participation in the counseling sessions likely suffers from larger measurement error, likely due to the fact that counseling was done as part of regular loan collection routines.
- ▶ Corresponding ITT results reported in Figure 5.

4-3 Robustness checks for average treatment effects

As in any empirical study, bias and imprecision might arise during the processes of data collection (which comprises the steps defining the constructs underlying outcomes, determining the sample composition and randomization, as well as taking measurement) as well as during the process of data analysis (which comprises the steps cleaning the data, selecting the econometric model, estimation and inference). Hence, our robustness checks address all stages as follows:

Definition of Constructs. For profits, we included two different constructs in our questionnaire: firstly, we measure profit directly, and secondly, as the difference between revenues and costs. Cross-checking these different measurements for profit helps judging their validity. However, a training in financial planning might have changed the reporting of these financial outcomes without changing the underlying true values. Therefore, we also tested whether treatment had an impact on the reporting bias, which we define as the difference of the two constructs as percent of the direct profit measurement.

Sample Composition and Randomization. In our main specification we include observations for which some baseline covariates were missing by imputing the corresponding value. As a robustness check we ran regressions on the subsample of observations for which no randomization variable was missing. This excludes 10.3% of our sample. Note that in our endline survey we allowed for baseline respondents to be replaced by other household members if these share business responsibilities, including in financial decision making. In the PAP, we suggested to constrain our analysis to the subsample of panel individuals as robustness check. Since only 2.03% of baseline respondents were replaced by other household members, we refrained from doing so. Instead, 12.34% of our sample reported having changed the FSP between baseline and endline survey. As a robustness check, we restricted our sample to those clients who did not switch FSPs.

Taking Measurements. We included enumerator fixed effects in our main specification to account for differences in asking questions and reporting answers. We checked robustness against excluding these. As a further robustness test, we excluded all observations from enumerators who reported at least one outlier in more than 40% of their observations. This excludes five enumerators and 7.3% of observations from our sample. Furthermore, we ran all analyses restricted to the subset of clients without obvious reporting bias. More precisely, we excluded clients who reported higher profits than revenues, or who reported higher profits in the worst month than in the best month. This excludes 14.64% of our sample.

Cleaning. For key quantitative variables, such as revenues, cost and profits, we conducted the same analyses at different levels of winsorizing: non-winsorized, 1%-winsorized and 5%-winsorized (as in Bruhn et al. 2013). We also ran regressions excluding all clients with any outlier (18.89% of the sample).³³ Since we deviated from the PAP by using the log value of quantitative outcomes, we also estimated results for quantitative outcomes without this transformation.

Econometric Models. Our estimation is based on the econometric model described in section 4. In particular, our main model uses the twenty most imbalanced baseline variables as covariates. We also ran two regressions using the ten most imbalanced, and the thirty most imbalanced variables as covariates respectively. In addition, we used lasso methods to select covariates that best predict the treatment indicator. Furthermore, we estimated two models with an additional control variable: First, we controlled for the distance of the client and the FSP using GPS data. Second, we included a dummy variable which takes value one for branches/cashpoints which did not report implementation in the monitoring system.

Inference. In our main specification, we present heteroscedasticity-robust, unclustered standard errors. As a robustness check, we cluster standard errors at the branch/cashpoint level. Alternatively, we estimated standard errors using randomization inference. We also estimated pseudo-effects, using variables as outcomes which are plausibly unaffected by treatment, namely age, having completed primary education, marital status, number of adults in the household and number of people in the household who additionally earn an income.

Results. Table D.11 contains results from the main robustness checks on selected variables. Further results are available upon request. The individual estimates differ slightly across the different specifications as would be expected. The important thing to note is that there are hardly any changes in the significance of the estimates however. Whereas some models yield additional weak significance for some outcomes, none of these are robust against changes in the models. Overall, the robustness checks confirms the results from the main specification presented above.

LASSO. Whereas our main model specification includes those baseline variables with greatest imbalance, bias might also arise from near-balanced variables if they have predictive power for future outcomes. We therefore use a PDS lasso algorithm, which additionally selects the baseline controls that best predict the outcome of interest for each outcome separately. The set of covariates used in our model is then the union of the set of baseline controls that predict treatment and the set of baseline controls that predict the respective outcome, together with the usual additional controls gender, age, set of dummies for imputation, and FSP and enumerator fixed effects. The point estimates for all but the quantitative outcomes on cost and profits remain unchanged, and for the latter inference is unaffected. The results are available upon request.

³³The winsorizing we use in the main specification identifies 14.24% of our observations to contain exactly one outlier, 4.23% to contain exactly two outliers, and 0.43% to contain more than two outliers.

Table D.11: ROBUSTNESS CHECKS

H	Main		Alternative Specifications																					
	(0)	(1) No miss.	(2) Same FSP	(3) -En.FE	(4) No enum. outlier	(5) No incons. profit	(6) No outlier	(7) 10C	(8) 30C	(9) +Distance	(10) +No Impl. Cl	(11) Cl(CashP)												
Panel A: Program Participation																								
20d	0.066	****	0.063	****	0.069	****	0.064	****	0.086	****	0.067	****	0.085	****	0.066	****	0.066	****	0.066	****	0.067	****	0.066	****
20d	0.086	****	0.084	****	0.084	****	0.090	****	0.124	****	0.087	****	0.104	****	0.086	****	0.086	****	0.086	****	0.086	****	0.086	****
20d	0.103	****	0.103	****	0.103	****	0.106	****	0.154	****	0.100	****	0.112	****	0.102	****	0.102	****	0.102	****	0.102	****	0.102	****
Panel B: Knowledge																								
1a	0.002		-0.004		0.003		0.008		-0.018		0.001		-0.008		0.003		0.001		0.002		0.002		0.002	
2a	-0.000		-0.001		-0.001		0.008		0.015		-0.002		0.006		0.002		0.001		0.001		0.001		0.000	
Panel C: Business Practices																								
3a	0.013		-0.017		0.006		0.022		0.082		0.029		-0.005		0.022		0.016		0.018		0.017		0.018	
4d	-0.007		-0.005		0.003		0.045		0.010		-0.011		-0.084		0.015		-0.004		0.000		-0.003		-0.003	
4c	0.022		0.026		0.030	*	0.025		0.001		0.016		0.013		0.025		0.023		0.023		0.022		0.022	
4c	0.029	**	0.031	**	0.024	*	0.004		0.026		0.025	*	0.043	**	0.030	**	0.029	**	0.028	**	0.029	**	0.029	*
Panel D: Business Financials																								
5a	0.098		0.110		0.097		0.098		-0.010		0.101		0.074		0.107		0.118	*	0.114		0.107		0.110	
6b	0.134		0.114		0.187		0.169		0.052		0.148		0.083		0.128		0.138		0.133		0.130		0.133	
6b	0.161		0.173		0.185		0.175		-0.040		0.165		-0.163		0.166		0.167		0.161		0.162		0.162	
6b	0.101		0.098		0.175	**	0.110		0.113		0.081		0.114		0.101		0.117		0.106		0.106		0.107	
6c	-0.011		-0.014		-0.006		-0.010		-0.019		-0.013		-0.022	*	-0.009		-0.010		-0.011		-0.011		-0.010	
6d	0.011		0.001		-0.004		0.010		0.013		0.003		0.002		0.010		0.011		0.011		0.011		0.010	
8a	0.005		0.012		-0.002		0.012		-0.012		0.009		0.009		0.009		0.005		0.006		0.006		0.005	
Panel E: Loan Behavior																								
12a	-0.021		-0.012		-0.024		-0.026	*	-0.025		-0.020		-0.030		-0.018		-0.019		-0.018		-0.018		-0.018	

► *Note:* The Table contains results from below mentioned robustness checks. Different models on top, outcomes on the left. Results for further outcomes available upon request.

► *Sample:* All FSPs. Sample size varying.

► *Column (0)* includes the main specification.

Column (1) relative to main specification in column (0): Excludes observations with missing values at baseline.

Column (2) relative to main specification in column (0): Excludes clients who changed their FSP since baseline.

Column (3) relative to main specification in column (0): Removes enumerator fixed effects.

Column (4) relative to main specification in column (0): Excludes observations collected by enumerators who entered outlier values in more than 40% of observations.

Column (5) relative to main specification in column (0): Excludes observations where profit is larger than revenue, and the best-month profit is larger than the worst-month profit.

Column (6) relative to main specification in column (0): Excludes observations with at least one outlier in quantitative variables.

Column (7) relative to main specification in column (0): Adds ten most imbalanced control variables instead of twenty.

Column (8) relative to main specification in column (0): Adds thirty most imbalanced control variables instead of twenty.

Column (9) relative to main specification in column (0): Additionally controls for the distance to the FSP.

Column (10) relative to main specification in column (0): Additionally adds a dummy for zero implementation in a cluster.

Column (11) relative to main specification in column (0): Clusters the standard errors at the cash point.

► The statistical significance is given as follows: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, **** indicates $p < 0.001$.