

## **Teaching personal initiative beats traditional training in boosting small business in West Africa**

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### **Abstract**

Standard business training programs aim to boost the incomes of the millions of self-employed business owners in developing countries by teaching basic financial and marketing practices, yet the impacts of such programs are mixed. We test whether a psychology-based personal initiative training approach which teaches and promotes a proactive mindset that focuses on entrepreneurial behaviors can have more success. A randomized controlled trial in Togo assigned microenterprise owners to a control group (N=500); a leading business training program (N=500); or to personal initiative training (N=500). Four follow-up surveys track firm outcomes over two years and show personal initiative training increases firm profits by 30 percent, compared to a statistically insignificant 11 percent for traditional training. The training is cost-effective, paying for itself within one year.

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A large share of the labor force in most developing countries is engaged in small-scale entrepreneurship (1). However, most of these businesses are “too small and utterly undifferentiated from the many others around them” to ever grow beyond subsistence size (2, p.218). What distinguishes those individuals who end up growing their businesses from the rest? There has been a long-running debate about whether such successful entrepreneurs are “born or made” (3). The “born” view argues that entrepreneurs differ from the rest in their innate personality traits and desire to succeed, whereas the “made” view argues that entrepreneurs can be created through education and experience.

The billions of dollars spent by governments, microfinance organizations, and non-governmental organizations providing business training programs indicate a strong belief by many policymakers that entrepreneurship can be taught. Traditional business training programs such as those offered by the U.S. Small Business Administration, the International Labor Organization’s Start and Improve Your Business program, the International Finance Corporation’s Business Edge program, and Freedom from Hunger’s programs for microfinance clients aim to teach small business owners to use better business practices such as record-keeping, stock control, and simple marketing. There is increasing evidence in economics that better management and improved business practices matter for productivity in both large (4) and small (5) firms. However, few evaluations of traditional business training programs offered to existing firms have found sustained impacts on business profits, particularly for women (6-10). In addition to methodological issues such as a lack of statistical power in many existing randomized controlled trials, two possible explanations for this lack of impact are that traditional training does not result in a large enough change in the business practices they aim to teach; and that they are not teaching the right set of skills (11).

One promising approach to improving these outcomes has been to incorporate insights from other fields into the standard accounting and economics-based approach. Examples include using behavioral economics insights to design a “rules of thumb” based training program (8), and programs based on insights from marketing science (12). What characterizes these programs is that they aim to improve managerial knowledge. In contrast, the psychology literature has long noted predictors of entrepreneurial success that go beyond knowledge and standard economic variables (13). However, few attempts have been made to experimentally evaluate the success of teaching such attributes to owners of small-scale businesses in developing countries. In this report, we show how the use of a psychology-based mindset training program that develops key behaviors associated with a proactive entrepreneurial mindset can deliver lasting improvements for small business owners.

Personal initiative is defined as a self-starting, future-oriented, and persistent proactive mindset (14, 15). Such a mindset implies a readiness to act as a result of cognitive, affective, and motivational tuning preparing to solve entrepreneurial challenges. The personal initiative mindset is key to entrepreneurial success, since it involves looking for ways to differentiate oneself from other businesses, to anticipate problems, to better overcome setbacks, and to foster better planning for opportunities and long-term preparation. A pilot experiment (16) with a sample of 109 Ugandan business owners suggested the potential for a short training course to instill a mindset of greater personal initiative, leading to business improvements within a year. Using a large sample and more comprehensive training program, we conducted a randomized controlled trial which directly compares personal initiative training to traditional business training, and demonstrates the greater effectiveness of this alternative approach. Our results provide a middle ground between the “born with an entrepreneurial personality” versus “made by learning specific entrepreneurial practices”

viewpoints, by showing that training can teach people to develop a mindset with attributes like proactiveness that is often assumed to be innate.

We work with a sample of 1,500 microenterprises in Lomé, Togo, selected from applicants to a Government project financed by the World Bank. Applicants had to be in business for at least 12 months, have fewer than 50 employees, operate outside of agriculture, and not be a formally registered company. The supporting online material (SOM) text 1 provides full details of the selection process and a timeline (17). A baseline survey of these applicants was undertaken between October and December 2013. The business owners are almost equally split by gender (53% female), have an average age of 41 years, and average 9 years of education (Table S2). The sample contains a broad mix of industries (27% manufacturing, 48% commerce, 25% services), with the business earning a mean of 94,512 CFA (US\$199) in monthly profits at baseline, with a median of 40,000 CFA (US\$84) (18). The median firm had 2 employees, while the mean had 3.

The initial state of business practices in these firms suggested significant scope for improvement. This is particularly true for record-keeping, where only 37 percent keep accounts books and only 4.7 percent have a written budget. We also measure marketing, operations management, information seeking, and human resource practices, with only one-third using advertising or publicity, 71 percent comparing sales performance to objectives, and 66 percent visiting competitors to compare prices or product offerings. The mean firm is using 16 out of the 29 different practices we measure at baseline. The initial level of personal initiative shows business owners start with reasonably high levels of initiative, but still have room for improvement. Business owners show a mean personal initiative level of 4.2 on a five-point Likert scale with values ranging from 2.1 to 5.0. SOM text 2 describes the scale and its construction in greater detail.

The 1,500 firms were stratified by gender and sector, and then grouped into triplets according to baseline profits. Within each triplet, firms were then randomly assigned to a control group (N=500), traditional business training treatment group (N=500), and personal initiative training treatment group (N=500). Table S2 shows balance on baseline observables.

The traditional business training treatment group was invited to receive the Business Edge training program, which is an internationally accredited program developed by the International Finance Corporation. The content of the training focused on four core topics: accounting and financial management, marketing, human resource management, and formalization. The take-up rate was 83.8 percent of those invited to training.

The second treatment group was offered a new personal initiative training program. It has a very different content from traditional business training programs, focusing on teaching a mindset of self-starting behavior, innovation, identifying and exploiting new opportunities, goal-setting, planning and feedback cycles, and overcoming obstacles. The take-up rate was 84.4 percent.

SOM text 2 and Table S3 provide detailed information on each program. Both training programs were implemented in three half-day sessions per week over four weeks in April 2014 for a total of 36 hours classroom instruction. This was followed by a trainer visiting each business for three hours, once per month for the next four months to answer any follow-up questions and assist with the implementation of the concepts learned during training. Entrepreneurs enrolled in the training were required to pay a highly-subsidized fee of 5,000 CFA (approximately US\$10).

Four rounds of follow-up surveys were collected between September 2014 and September 2016, enabling us to track business outcomes for up to 2 years and 5 months after the training took place. Attrition rates were reasonably low, averaging 9 percent. SOM text 2 describes how the key

outcome measures were constructed, and details the estimation methodology which was set out in advance in a registered pre-analysis plan (<https://www.socialscisceregistry.org/docs/analysisplan/329/document>).

Our main hypothesis is that personal initiative training can be more successful than traditional business training in helping firms survive, sell more, and increase their profitability. We test this hypothesis in Table 1, which presents the intention-to-treat impacts of being assigned to either training program. We pool impacts over the four post-treatment waves to maximize statistical power, with the coefficients then representing the average impact over the 2.5 years post-treatment (19). Figure S1 shows the trajectory of impacts on profits over time. Impacts were lower in the third round, during a period of post-election uncertainty, but SOM text 3 shows we cannot reject that the round-by-round impacts of personal initiative training are equal to the pooled estimate.

Ninety-three percent of control group entrepreneurs are still operating a business at the time of our last survey round, and neither training program has a significant impact on firm survival. Although the point estimates are positive, the impact of traditional business training is not significant for sales, profits, or an aggregated index of these measures. In contrast, we find larger and statistically significant impacts of personal initiative training on all of these measures. Monthly sales increase by 114,733 CFA (\$241), which is a 17 percent increase relative to the control mean, and monthly profits by 28,709 CFA (\$60), a 30 percent increase relative to the control mean. Personal initiative training has a significantly higher impact than the business training on monthly and weekly profits, and on the aggregate index of sales and profits outcomes.

The resulting increase in firm profits occurs across the distribution, and is shown graphically in Figure 1. Entrepreneurs who went through personal initiative training are earning higher profits than those in the traditional training or control groups at every percentile. SOM text 4 and Table

S7 show this result is robust to alternative transformations of sales and profits. We cannot reject that there is no differential effect of either training according to gender (Table S8). Personal initiative training therefore also helps female-owned businesses to grow, in contrast to the experiences documented in the literature with many traditional training programs.

How does personal initiative training enable businesses to grow by more than traditional training?

We examine several key mechanisms in Table 2, and conduct further exploration in SOM text 5.

The first column of Table 2 examines the impact on the proportion of core business practices that firms are using. Traditional business training leads to a 6 percentage point increase in the number of good business practices used, which is consistent with the impact of several ILO training programs (5). However, without explicitly focusing on teaching these practices, personal initiative training results in almost the same total increase in business practices. Table S12 shows this occurs through changes in a wide range of practices, although traditional training improved record-keeping practices more. Column 2 then looks at the measure of personal initiative exhibited in the business. While traditional business training also leads to a significant increase, the impact is almost twice as large from the personal initiative training. We view this as changing the psychological mindset (20), and in SOM text 5 discuss how mindset differs from underlying personality traits, show robustness to alternative measures of personal initiative (Table S9), and show that the impact is enduring, lasting through the final survey round (Table S10).

Column 3 considers an aggregate index measure of different capital and labor inputs. We see both training programs led to firms using more inputs, but the impact was significantly larger with personal initiative training. Examining the components of this index in Table S13, we find that these firm owners used more labor, made more big investments, but do not use more paid workers or have higher levels of inventories than those who received traditional training.

Table 2's column 4 shows that personal initiative training leads to a 0.31 standard deviation increase in an aggregate index of innovation activities, which is significantly larger than the 0.12 increase for traditional training. In particular, firms that went through personal initiative training have introduced more new products, and these new products are more likely to have been their own idea and be new for the neighborhood, rather than just copied from others (Table S14). A consequence is that these firms are more likely to have diversified into a different product line (column 5). In column 6, we show that the personal initiative training leads to a 0.15 standard deviation increase in an aggregate index of access to finance, which is double the impact of the traditional business training. Firms are not more likely to receive a loan after training, but there is an increase in the amount they think they can borrow, and an increase in the amount actually borrowed. The personal initiative training has also large and statistically significant impacts on the amount received from gifts, which is not the case for the traditional business training.

Using mediation analysis, we show in Table S16 that business practices, personal initiative, capital and labor inputs, the diversification of product line, and access to finance, jointly mediate the total effect of personal initiative training and its differential effect from traditional training.

The personal initiative training cost US\$756 per invited participant (similar to that of the traditional training), yielding a \$60 per month increase in monthly profits over the first two years. As a result, it is extremely cost-effective, paying back the cost within approximately one year. SOM text 6 shows a lower bound on the return on investment (ROI) is 82%, and then, using different assumptions on how quickly the benefits might disappear beyond our sample period, we estimate ROIs ranging from 140% to 393% over a ten-year period.

Taken together, our results show how a psychological mindset training approach can lead to innovation and improved entrepreneurial success, thereby providing support for a middle ground



between entrepreneurship being born or made. Moreover, the impacts on intermediate channels suggest that personal initiative training largely enables firm owners to still obtain the key benefits of traditional training in terms of improved business practices and some input changes. However, by helping the entrepreneur to become more pro-active and constantly search for new opportunities, it also enables additional gains through encouraging owners to innovate: differentiating themselves from other businesses and developing new areas for their business. The results therefore suggest the promise of psychology to better influence how small business training programs are taught, and the importance of developing an entrepreneurial mindset in addition to just learning the business practices of successful entrepreneurs.

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## **Supporting Online Material**

SOM Text

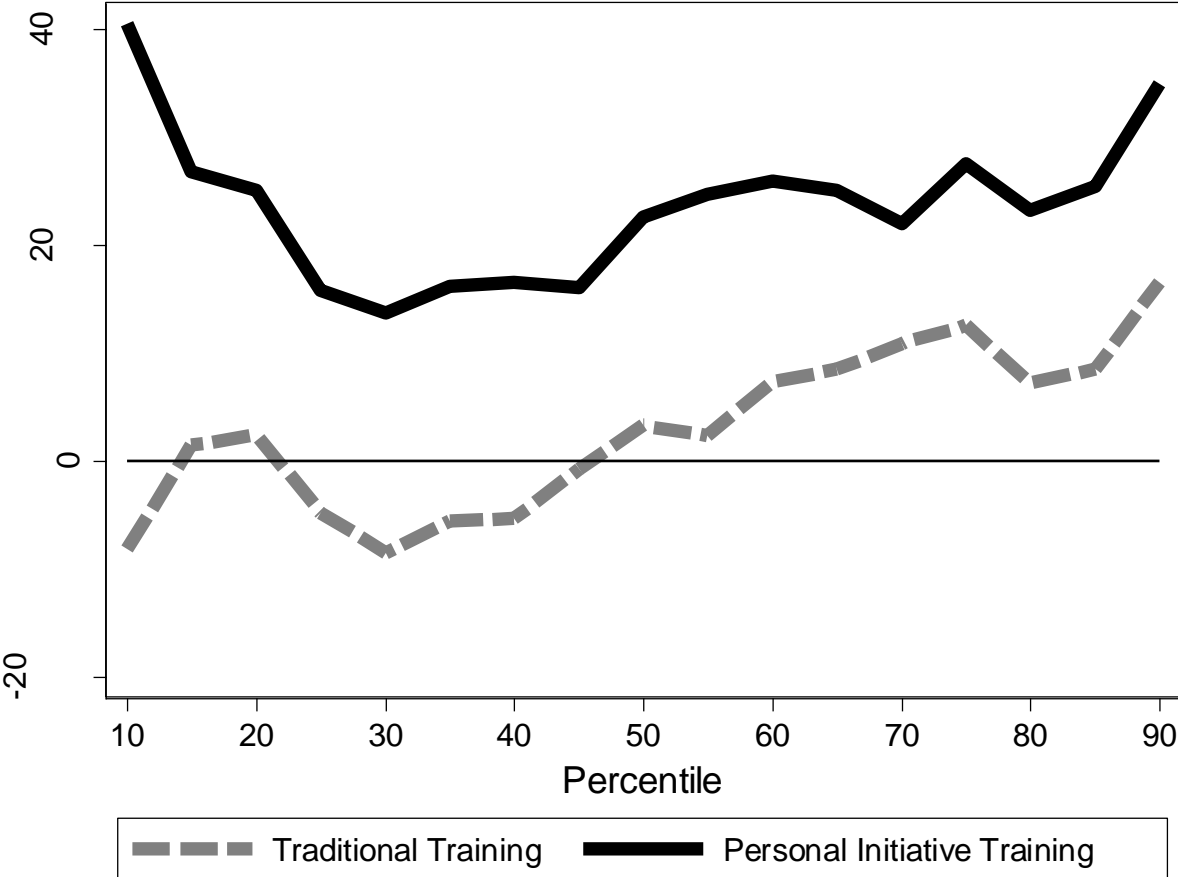
Figs. S1 to S2

Tables S1 to S16

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**Figure 1: Quantile Treatment Effects on Monthly Profits Show Greater Gains from Personal Initiative Training Across the Distribution**



Notes: Estimates from quantile regression of the inverse hyperbolic sine transformation of profits, which behaves like the logarithmic transformation but allows for zeroes and negative values. Regression pools data across all four follow-up rounds, controlling for survey round effects and baseline profits. The difference between the two training programs is statistically significant at the 10 percent significance level or lower for all percentiles shown except for the 15<sup>th</sup> ( $p=0.13$ ) and the 70<sup>th</sup> ( $p=0.20$ ). Figure S2 plots the p-values for testing equality of these effects.

**Table 1: Impact of Training Programs on Survival, Profitability and Sales**

	Business	Monthly	Monthly	Weekly	Profits and
	Survival	Sales	Profits	Profits	Sales
					Index
Traditional Business Training	-0.005 (0.008)	38,077 (57,812)	10,746 (6,802)	3,086 (2,050)	0.029 (0.030)
Personal Initiative Training	-0.003 (0.008)	114,733* (58,619)	28,709*** (7,110)	6,685*** (1,979)	0.100*** (0.031)
Number of Observations	5,792	5,642	5,642	5,633	5,643
Number of Firms	1,499	1,492	1,492	1,492	1,492
Test of Equality of Treatments p-value	0.813	0.171	0.014	0.091	0.025
Control Group Mean	0.960	680,807	96,089	30,417	0.000

**Notes:**

Data are from four survey rounds collected by the authors, and show average impact over the 2.5 years post-training. All regressions include randomization strata and survey wave dummies. Huber-White robust standard errors in parentheses, clustered at the firm level.

\*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

Sales are winsorized (capped) at the 99th percentile and Profits at the 1st and 99th percentile, reducing the influence of outliers, and are expressed in terms of real CFA francs.

Profits and sales index is the mean of standardized z-scores of our various profit and sales measures.

F-test used to test equality of impacts of the two training programs.

**Table 2: Mechanisms through which training operates**

	Business Practices	Personal Initiative	Capital and Labor Inputs	Innovation Index	Diversified Product line	Access to Finance Index
Traditional Business Training	0.060*** (0.008)	0.065*** (0.015)	0.032* (0.020)	0.117*** (0.050)	0.044** (0.018)	0.070** (0.033)
Personal Initiative Training	0.054*** (0.007)	0.124*** (0.015)	0.078*** (0.020)	0.309*** (0.070)	0.092*** (0.018)	0.147*** (0.040)
Number of Observations	5,646	5,538	5,655	5,639	5,632	4,207
Number of Firms	1,492	1,484	1,492	1,492	1,492	1,473
Test of Equality of Treatments	0.458	0.000	0.024	0.011	0.010	0.043
Control Group Mean	0.618	4.32	0.000	0.000	0.335	0.000

Notes:

Huber-White robust standard errors in parentheses, clustered at the firm level.

\*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

# **SUPPORTING ONLINE MATERIAL**

## **Teaching personal initiative beats traditional training in boosting small business in West Africa**

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### **1. Sampling Methodology and Survey Design**

#### *Selection process and Sampling methodology*

The training forms one component of the Private Sector Development Support Project, a \$13 million lending operation from the International Development Association of the World Bank to the Government of Togo. The project launched a four-month communication campaign in Lomé to generate applicants for the program. This involved radio and television advertisements; banners; distributing more than 9,000 flyers; 138 information events partnering with three microfinance institutions, an association of female entrepreneurs, a government agency that works with the informal sector, an artisan's association and the *Chambre Régionale des Métiers-Lomé* (Regional Chamber of Artisans); and door-to-door communication to firms in 89 different neighborhoods.

At the end of this campaign, the project had received 3,396 applications, of which 3,220 met the eligibility criteria which entrepreneurs had been informed about during the communication campaign. As mentioned in the main text, to be eligible firms had to have fewer than 50 employees, not be formally registered at the *Chambre de Commerce et de l'Industrie du Togo* (Chamber of Commerce) or the *Centre de Formalités des Entreprises* (Business Formality Center), be in any sector apart from agricultural production, husbandry or fishing, and be in existence for 12 months or more.

The eligible applicants were then grouped into 47 distinct strata based on sector of activity and sales range, with equal numbers of companies then randomly chosen from each strata. This weighted the sample in favor of firms with higher sales and those in smaller sectors, while still ensuring representation from across the informal sector. In total 1,794 eligible companies were selected through this process to undergo a baseline survey, with the goal of surveying 1,500. As such, firms that were no longer interested or could not be found would be dropped.

#### *Survey*

The baseline survey was then carried out between October 2013 and December 2013 (see timeline below), covering 1,500 firms. Note that this timing was approximately eight months after firms had applied for the program, and so firms which had shut down in the meantime or lost interest in the interim were excluded.



The baseline survey was conducted by Feducia Consulting Group (FCG) from Benin. The survey contained four sections, covering contact and demographic information about the owner, details on the main business they operate, questions on the entrepreneur's skills, personality and background, and questions about the household of the business owner. The survey was administered face-to-face using paper questionnaires, and translated into three languages: French, Ewe and Kabiye.

We follow World Bank guidelines of adhering to local standards and regulations on human subjects clearance. In the case of Togo, the approval process depends on whether the project is affiliated with the government or not. As the survey was conducted under the supervision of the Togo Ministry of Commerce and Private Sector Promotion, there was no need for official clearance of the survey. However, according to the appropriate administrative process, the Minister of Commerce and Private Sector Promotion notified the Minister of Territorial Administration of the activities before the beginning of data collection. The purpose of the survey was clearly explained to participants, including the fact that participation in the survey would not have any impact on their participation in any government program, and that results would be kept confidential. Informed consent was then obtained from each survey participant.

#### *Randomization process*

The sample was grouped into strata based on three sectors (production, commerce, services), and gender.<sup>1</sup> Within these strata we formed triplets based on profits, and randomly allocated one individual to each group within each triplet. This was conducted in a semi-public ceremony involving representations from the government, the project, the partner organizations and the World Bank, and a bailiff sanctioned the transparency of the process.

Firms selected for training were then contacted and asked to come and pay the 5,000 CFA fee (approximately US\$10) at any one of three partner microfinance institutions in order to be able to participate.

#### *Follow-up surveys and attrition*

Four rounds of follow-up surveys were conducted according to the timetable below using face-to-face surveying. In order to incentivize response, survey participants were offered raffle tickets for survey completion, for prizes such as cellphones, t-shirts, and a refrigerator. Participants were also told that if they participated in all four follow-up rounds, they would be entered into a drawing for a motorcycle.

Response rates were high for a survey of informal firm owners. Table S1 reports the round by round response rates for the control group, and tests whether the response rates are significantly different for either training treatment. The control group response rate was 94 percent in round 1, falling to 88 percent for round 4. Both training treatments result in response rates which are 2 to 4 percentage points higher during the first three rounds, which is significantly different from the control group at the 10 percent level. In contrast, the response rate differences are smaller and

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<sup>1</sup> We had also intended to stratify on whether firms were above or below the median in terms of baseline business practices, but a coding error meant that this did not happen.

not significantly different amongst groups by the fourth survey round. In the robustness section (SOM text 4) we show our results are robust to using bounds analysis to account for this differential attrition.

For those who were not interviewed in follow-up surveys 2, 3 and 4, we collected information on business survival from the entrepreneur or the entrepreneur's friends, family or neighbors. Over these three waves, we received survival information for 64% of those not interviewed (51% in FU2, 49% in FU3 and 85% in FU4). Receiving survival information for those not interviewed is not linked to treatment status. While the survival rates of those who were not interviewed were lower than for those interviewed, survey attrition is not only due to closing the business. At follow-up 2, 3 and 4; 82%, 51% and 57% respectively of those not interviewed were still business owners or managers. Our survival measure incorporates this additional information.

### *Timeline*

November 2012-February 2013: Communication campaign and application window

October 2013-December 2013: Baseline survey

April 2014: Training interventions

May 2014-August 2014: Once a month mentoring sessions

September 2014: First follow-up survey

January-February 2015: Second follow-up survey

August-September 2015: Third follow-up survey

August-September 2016: Final follow-up survey

## **2. Methods**

### *Additional details on the intervention*

The program implemented two types of training: IFC Business Edge for traditional business training and the Personal Initiative training. The Togo Private Sector Development Support Project, funded by the World Bank, contracted a firm to carry out the implementation of the two types of training. Table S3 describes the main features of the two training programs.

### Business Edge training

The Business Edge training program is an internationally accredited management training program developed by the International Finance Corporation (IFC). It has been used in 56 countries around the world to train more than 200,000 individuals. The IFC Business Edge curriculum includes 59 modules on 7 management topics. Only firms that are recognized by IFC can deliver the Business Edge training, and all trainers must have completed a training program led by a certified Master Trainer. After leading a certain number of successful trainings and being evaluated by Certified and Master trainers, a Business Edge trainer can become certified.

To prepare for implementing IFC Business Edge in Togo, fifteen trainers were selected from the interview process for the training of trainers. The implementing firm selected twelve of these trainers based on observations during the training of trainers and the master trainer's recommendations.

The training of trainers for the IFC Business Edge took place over five days from March 3-7, 2014. Laban Mawungwe, an accredited Business Edge master trainer, and Bibiana Taku, the Chief of Party and a Business Edge certified trainer, led the training of trainers. As the Business Edge methodology is founded on the principal that the trainers are experts in the field that they will be teaching, the training of trainers mostly focused on the Business Edge methodology and approach to training, including didactic tools.

The IFC Business Edge training program is always tailored to the needs of the target population. This was also the case in this project in Togo. Before starting the program, the methodology requires the firm to conduct a training needs assessment with the participants. The appropriate modules that respond to the participants' identified needs are then selected from the existing curriculum and adapted to the level and existing knowledge of the target population. The needs assessment involved two different steps and a subsample of 85 entrepreneurs. In the first step, the entrepreneurs discussed their challenges, opportunities, strengths and external threats in groups and with the trainers, which enabled a qualitative SWOT diagnostic of the target beneficiaries. In the second step, the entrepreneurs completed questionnaires that quantified the perceived training needs and interests. The 12 selected local trainers led the one-day training needs assessment workshop with support from certified Business Edge trainers and the master trainer.

At the end of the training needs assessment, the certified trainers assisted the local trainers with the selection and adaptation of the training modules. The topics selected in Togo were accounting and financial management, commercial management and marketing, human resource management, and formalization and fiscal responsibilities. These topics are in a range of areas (accounting, financial planning, marketing, pricing and costing) that are quite typical in business training programs (11).

Different specialized trainers taught each of the modules. The pedagogical tools used during the Business Edge training included PowerPoint presentations, a participant workbook including key notions and examples, and individual and group exercises. Examples of the exercises include helping a fictive entrepreneur note operations in a cash book, calculate the total cost of production or sales, or identify sources of problems in customer care. The training also involved open group discussions on topics, such as the advantages and disadvantages of not paying taxes, and role-playing exercises, such as negotiations with suppliers or filling-in the business registration form.

#### Personal initiative training

The personal initiative training was developed by Frese and colleagues at the Leuphana University of Luneburg, Germany (jointly the Frese Research Group). The training is based on the psychological literature concerning personal initiative and action regulation theory, and it is

designed to help entrepreneurs understand and internalize the principals of a personal initiative mindset with its components of self-starting, future-oriented and persistent behavior (more on this later below). The personal initiative training program was piloted in Uganda (15). The pilot training was shorter and targeted start-ups and entrepreneurs with higher educational levels. The Frese Research Group modified the training to fit the duration of the program in Togo and to adapt to the target population of entrepreneurs. Additional modules were added on opportunity identification and alternative sources of financing. In addition, individual activities were transformed into group activities. The Frese Research Group simplified the curriculum and associated images with each principle to facilitate the learning and retention of ideas for those who were illiterate. As such, this was the first time that this program was used in this form with such a group of entrepreneurs.

Eighteen trainers were selected for the training of trainers. The training of trainers for the personal initiative training took place over five days from March 3-7, 2014. The Frese Research Group led the training of trainers. The first day focused on the basic principles of the training and the methodology. The remaining four days focused on the content of the training and used a learning-by-doing method in which different future trainers presented the content of the training and received feedback. After the training of trainers, the trainers were evaluated using both a written test and observation of their performance during the pilot training. The twelve trainers with the best performance were selected for the full training program.

The training on personal initiative had nine modules of varying length. The goals of the modules included (1) introduction to content; (2) being self-starting; (3) innovation and opportunity identification; (4) goal setting; (5) planning; (6) feedback; (7) overcoming barriers; (8) repetition of the content; and (9) personal project. The pedagogical tools used included presentations, videos, cases, working in groups followed by plenary discussions, questionnaires, and individual exercises.

#### *The difference between Personal Initiative Training and other Entrepreneurship Trainings*

Personal initiative training was developed on the basis of an action regulation theory approach to training and to entrepreneurship (21). Personal initiative implies proactive performance and is formally defined to be a syndrome of three components: self-starting behavior, long-term orientation and persistence (22). Personal initiative as a proactive mindset has been shown to be related to performance for employees in a meta-analysis (23) and is highly relevant to entrepreneurship (21). In the context of entrepreneurship, self-starting behavior implies doing something that differentiates the business from other businesses; long term orientation implies for example, plans that range into the future (such as thinking about business opportunities and threats in a year from now); persistence implies that one does not give up when problems occur or after a failed business project; rather one should learn from errors and mistakes and develop plans B and C.

We define personal initiative as a mindset that is changeable through training. It is useful to distinguish between personality *traits*, *mindsets*, and *states*. Traits tend to be highly stable across time and relatively wide in generalization across situations. There are often genetic determinants,

and although research shows these traits are not permanently fixed, they can be difficult to change. An example is the Big Five personality traits of extraversion, agreeableness, neuroticism, openness and conscientiousness. Recent research suggests that even these traits are not permanently fixed. For example, Roberts and Caspi (24) have argued that identity processes explain patterns of change in personality traits in adulthood. States on the other hand are highly variable across time and situations and are easy to change. Mindsets are in the middle between traits and states; a mindset as a cognitive, affective, and motivational tuning to follow a certain course of actions to meet task demands, thus creating a special preparedness for solving these tasks (20). Mindsets tend to be of medium stability across time and generalizability across situations.

Through personal initiative training, participants develop a proactive mindset with regard to the full action cycle of setting challenging goals (25), active information seeking, adequate and flexible planning and execution (26), and active feedback seeking. The training, thus, promotes a unique action oriented mindset, which is thoughtful and at the same time action oriented, creative, and experimental combined with good skill development of how to deal with problems and frustrations, including one's own errors (cf. 22). The training comprises twelve facets (the three components of personal initiative times four parts of the action cycle) which form the theoretical basis of the training modules.

Personal initiative training differs from other types of entrepreneurship trainings in terms of training content and training methods. Regarding training content, the major idea of personal initiative training is to develop a proactive mindset by increasing participants' learning orientation (and thus independent learning), enhancing the range of approaches to their businesses, reducing frustrations when problems occur or when errors and failures appear. Thus, the two trainings approaches cover largely different topics but even similar topics are treated very differently. For example, both trainings discuss the subject of finance. In the traditional training program, participants learn useful business skills like how to keep financial records, what types of lending products banks offer and what is needed to apply for a loan, etc. In contrast, the personal initiative training teaches participants to identify and approach unusual sources of money (self-starting behavior), that they should do bootstrapping in order to not need to rely on external funds in the long-term (future-oriented behavior), and that they should not give up in case they face financial problems, but develop plan B and C's to overcome financial shortages (persistent behavior). This is teaching a different mindset and to encourage participants to develop knowledge on finance on their own. The participants are also not taught to write a business plan and they do not get a list of microfinance institutions; rather they develop strategies to find out themselves where to go to get credit. Thus self-reliance and learning orientation are emphasized rather than providing direct prescriptive advice.

Regarding training methods, personal initiative training works with a training approach that is based on a number of principles from action regulation theory (15). It teaches personal initiative with the help of four steps (27). We illustrate the four steps with a training example teaching self-starting behavior in daily business routines:

1) *Presentation of action principles to create a rudimentary understanding of personal initiative.* To teach how to show more self-starting behavior and to avoid reactive behavior in daily business routines, trainers present action principles regarding self-starting behavior and provide examples how participants can use them in their businesses. Action principles are short and easy to follow guidelines which are based on scientific evidence. Examples are the action principles “Change your environment, don’t just react to environmental changes” and “Act first – be ahead of your competitors.” Through the action principles, participants develop a first rudimentary understanding of how to show self-starting behavior in their daily business routines.

2) *Verbalization and interiorization.* Participants then process and interiorize the action principles and develop first action schemes of self-starting behavior.

3) *Action training.* In the next step, participants actively practice the new behavior based on the action principles and create more sophisticated action schemes of self-starting behavior. Action theory states that knowledge should be tied strongly to practically relevant actions to enable deep level learning. To practice self-starting behavior in their daily business routines, participants start with an exercise based on the case of a business owner they can identify with, as illustrated in the slide below:

### **Possible daily routine of the owner of a small grocery store**

Time	Business activity
8.00	Open store and put up the usual advertisement outside the store.
- 8.45	Waiting for the first customer to come.
9.00	Phone call from supplier: he is not able to deliver fresh fruits today. This happens already the third time within the last two weeks. Hope it will get better soon.
9.30	Serving the customers. Some leave the store without buying anything because they were only looking for fresh fruits. Sending these customers to competitor next street.
11.00	Not many customers today, thus calling some friends by phone to use the time for chatting
13.00	Cleaning the outside-advertisement and the display.
14.30	Serving customers.
20.00	Closing the store.
- 20.20	Counting sales and calculating the turnover for today – not a good day...

They are also asked to prepare a schedule of their own last working day. After that, participants identify where the business owner has been self-starting and where he has shown reactive behavior. They then formulate alternative self-starting behavior the business owner could have shown. After they have practiced this with the help of the case, they look at their own work schedules, identify own reactive behavior (for example: sit and wait for clients) and formulate alternative self-starting behavior they want to show in the future instead (for example: work on

an advertisement campaign to attract further clients whenever there is no client in the shop). Participants present their results and the other participants and the trainer provide feedback with recourse to the action principles<sup>2</sup>. The feedback helps to refine the action schemes of self-starting behavior the participants have developed.

4) *Training transfer*. In a last step, participants apply their newly developed self-starting behavior in their concrete workplaces. In the training, they are asked to develop a personal project that ideally introduces new processes, new services or products to their businesses. Participants implement the personal projects in their own businesses and apply the internalized action principles. At this stage, feedback comes from their own errors and the real business environment. Trainers provide additional feedback on whether participants have translated the action principles regarding self-starting behavior in their daily business routines into self-starting business behavior.

A second example of practicing an action-oriented approach is a set of exercises around opportunity identification, focused on getting business owners to think of creative new products or services they could offer. They are given the example exercise in the slide below, to work on brainstorming new ideas. They then are asked to list the latest technological inventions, demographic changes, laws, and trends in Togo and think of new business ideas to take advantage of these opportunities by combining one of their strengths with an interest or hobby they have.

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<sup>2</sup> A precursor of such a training in a completely different field with different participants was a self-efficacy training for the unemployed that used an action-oriented approach to increase job-search and speed up reemployment (28) – that training also used a randomized control group design for evaluation.

## Exercise: Think outside the Box IV



To avoid the obvious, you can combine different ideas.

### Instruction:

Work in teams of two and choose two of these objects. Create a new product or service by combining the two objects. Try to make the product/ service as unique as possible!



Lomé, Togo

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### Organization of the training and mentoring interventions

The training programs took place in hotel conference rooms in several different areas across Lomé in order to be as close to the entrepreneurs' businesses as possible. Proximity to the training location would decrease the cost of participating for the entrepreneurs, both in terms of transport costs and the time needed to get to the training site. Also to avoid disruptions to the business activities, the training sessions were spread out over the course of one month, in April 2014. Entrepreneurs were invited to three half-day sessions per week over the course of four weeks. In order to ensure effective participation of entrepreneurs, the classroom size was targeted at 20 entrepreneurs per class.

In order to accommodate all of the entrepreneurs, the trainers provided instructions in a mix of simple French and local languages. In addition, each classroom had also a training assistant who could assist the illiterate entrepreneurs during individual or group work. The training assistant was paid by and reported directly to the government project and also facilitated quality control and outreach to absent entrepreneurs.

In order to benefit from the mentoring sessions, the entrepreneurs had to be present at a minimum of 10 out of the 12 classroom training sessions. This was a way to motivate entrepreneurs to participate in the whole training program. The participation was of 84 percent for both training programs. Within participants, 84 percent (71 percent of total) participated in at least 10 of the 12 sessions of the Business Edge training, and 87 percent (73 percent of total)



participated in at least 10 of the 12 sessions of the personal initiative training. These were then the proportions of entrepreneurs that benefited from the mentoring sessions.

The mentoring sessions took place with each entrepreneur individually in his or her business for three hours once a month for four months (May, June, July, and August 2014). Each trainer was assigned to approximately 40-42 entrepreneurs. The personal initiative trainers became the mentors for the entrepreneurs that they taught in the classroom, as there was already a relationship between the trainer and the entrepreneur. As the Business Edge trainers were not assigned to a specific classroom during the classroom training, each trainer was randomly assigned a group of entrepreneurs for the mentoring portion of the program. As the trainers were specialized in certain subjects, they collaborated as necessary to best meet the needs of the entrepreneurs.

Throughout the training and mentoring, the project used the following methods to ensure quality:

- 1) *Feedback from participants.* To be able to get direct feedback from the trainings' target group, the project conducted a daily survey on the entrepreneurs' satisfaction with the trainer, the trainings' content, their level of comprehension, the training contents' importance for the businesses and their perceived personal participation during the session. An independent person (training assistant) conducted these surveys to make sure that the participants' answers were not influenced by the trainers' presence.
- 2) *Feedback from independent observers.* In order to get another daily personal feedback on the trainings' quality and to validate the participants' impressions concerning the training, the training assistant evaluated every training session. The criteria for this evaluation were the same criteria used for the participants' feedback. In addition, the training assistant reported on the start and end times for the training, giving explanations when a session was longer or shorter than it should have been.
- 3) *Quality control by training experts.* Throughout the whole training period, training experts experienced in the training approaches visited the 48 training groups unannounced to check whether the trainings were delivered in the way they were intended to on a daily basis. Quality control visits continued during the mentoring sessions. The training experts also discussed the difficulties and problems in several group meetings and during their visits with the local trainers.
- 4) *Video-recording.* In order to follow up on every single training group on a daily basis, all training sessions were recorded and sections were watched at the end of every training day. The same training experts that visited the training groups during the day watched several sequences of all training groups in order to check quality and decide on which training group needed to be visited the following day.
- 5) *Phone calls to beneficiaries.* During each month of the in-house mentoring, a research assistant randomly contacted 10% of the beneficiaries in order to ensure the presence of the trainer, the duration of the mentoring sessions, and to collect feedback on the quality of the mentoring and the satisfaction of the entrepreneur.
- 6) *Mentoring reports.* At the end of each mentoring session, the trainer completed a report on the items discussed, the entrepreneurs' progress toward their goals, the recommendations made, and the difficulties encountered. The training firm's Chief of Party and the project unit systematically reviewed the reports to ensure quality.

### *Measurement of key outcomes*

The outcome variable specifications were defined in a pre-analysis plan, which was registered with the American Economic Association trial registry<sup>3</sup> before beginning data analysis. To adjust for inflation, we adjusted the nominal values of all financial variables to real values with a base of December 2013 using the consumer price index published at the Institut National de la Statistique et des Etudes Economiques et Démographiques (INSEED-TOGO), a public establishment attached to the Togolese Ministry in charge of statistics.

Due to the risk of type one error, we regrouped the variables of interest into families of outcomes and followed the methodology of (29). For each family of outcomes, we created an average z-score index by ensuring all variables in the outcome were coded in the same direction, calculating the z-score of each variable by subtracting the control-group mean and dividing by the control group standard deviation, and averaging the z-scores of the outcomes for each family.

The outcome variables in Table 1 and Table S5 were defined in the following way:

- **Business survival:** Indicates whether entrepreneurs currently own or manage a business, regardless of whether the business is the same or different from baseline. In follow-up surveys 2, 3 and 4, information on business survival for firms that were not interviewed was obtained when possible by asking the entrepreneur over the phone or asking the entrepreneur's friends, family or neighbors.
- **Monthly sales:** Entrepreneurs were asked "what was the revenue of your business in the last full month?". The variable was winsorized at the 99<sup>th</sup> percentile and coded to 0 for individuals who no longer had businesses.
- **Monthly profits:** Following (30), we asked business owners for profits directly rather than attempting to have them match up revenue and expenses for the same period. Entrepreneurs were asked "what were the profits of your business in the last full month? That is, your revenue after having paid all expenses including the salaries of employees, but before paying your own salary". The variable was winsorized at the 99<sup>th</sup> and 1<sup>st</sup> percentiles and coded to 0 for individuals who no longer had a business.
- **Weekly profits:** Entrepreneurs were asked for the amount of their profits in the previous week, after paying all business expenses including the salaries of their employees but before paying themselves a salary. The variable was winsorized at the 99<sup>th</sup> and 1<sup>st</sup> percentiles and coded to 0 for individuals who no longer had a business.
- **Profits and sales index:** This index averaged the z-scores of the following 9 variables according to the procedure described above:
  - Last month's sales
  - Last month's sales, winsorized at the 99<sup>th</sup> percentile
  - Last month's sales, transformed using the inverse hyperbolic sine
  - Last week's sales, winsorized at the 99<sup>th</sup> percentile
  - Last month's profits
  - Last month's profits, winsorized at the 99<sup>th</sup> and 1<sup>st</sup> percentiles

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<sup>3</sup> <https://www.socialscienceregistry.org/trials/888/history/5468>

- Last month's profits, transformed using the inverse hyperbolic sine
- Last week's profits, winsorized at the 99<sup>th</sup> and 1<sup>st</sup> percentiles
- Total profits from all businesses owned or managed, winsorized at the 99<sup>th</sup> and 1<sup>st</sup> percentiles

The outcome variables in Table 2 were defined in the following way:

- Business practices: This is the simple average of the number of the following 47 business practices that the entrepreneur uses. For most of the business practices, the entrepreneur was asked over the past 6 months how often they used the practice, with four possible response options: never, about once per month, about once per week, every day. These practices were first recoded to binary, with only those saying they never used the practice being coded to 0. For some of the practices, entrepreneurs were only asked whether they use them or not, and these practices are indicated below with a star. Variables were coded to 0 for those who no longer had a business.

*Marketing and customer service practices*

- Asks customers what products or services they would like to see
- Asks clients if satisfied with their products or services
- Offers promotions
- Changes the presentation of products or services to make them more attractive
- Used at least one form of publicity—constructed from a question asking about whether they used the following forms of advertising:
  - Written press
  - Radio or television
  - Classified ads through professional, trade or religious associations
  - Trade fair
  - Posters/flyers/business cards
- Used at least 2 forms of publicity, constructed using the question listed above
- Asks customers who do not come back why they did not return\*

*Record keeping and financial management practices*

- Keeps accounting books\*
- Keeps all types of accounting books, constructed from a question asking whether entrepreneurs keep a record book only for:
  - Purchases
  - Sales
  - Cash register operations
  - Inventory
- Has a written budget\*
- Has a budget that shows monthly expenses\*
- Has a budget that shows yearly expenses\*
- Gives receipts to customers systematically\*
- Keeps receipts from suppliers\*
- Has a business bank account\*
- Pays self a fixed salary\*

- Does not mix business and personal money\*
- Registers all sales and purchases\*
- Able to use accounting books to see amount of money business has\*
- Able to prove to a bank they would have money left after paying expenses to reimburse a loan\*

*Operations and performance management practices*

- Sets sales objectives\*
- Compares real sales to objectives, with those who do not set objectives recoded to 0
- Negotiates with suppliers to get a better price
- Does not have insufficient inventory in stock: this variable was coded 1 for those who say they never had insufficient inventory in stock
- Takes inventory of stock
- Analyzes sales trends
- Analyzes firm performance
- Calculates costs\*
- Calculates profits or losses\*
- Knows which product or service contributes most to profits, coded from a question asking what product or service contributes most to profits.

*Information and opportunity seeking practices*

- Visits competitors to know price or products
- Evaluates the need in the market for their products or services
- Seeks new markets
- Identifies potential new customers, suppliers, competitors
- Compares prices or quality of suppliers
- Discusses business ideas with friends, consultants or other entrepreneurs
- Seeks additional capital for the business
- Uses internet, books, magazines or newspapers to learn new things in the sector
- Discusses with other entrepreneurs in the sector
- Seeks new production, marketing or administrative techniques
- Asks supplier what sells well in the sector\*
- Meets with groups of entrepreneurs\*

*Human resource management practices*

- Has written contracts with workers, constructed using a question asking how many workers have contracts and coded to 0 if the business had no workers
- Trained employees externally\*, coded to 0 if the business had no workers
- Provided training internally to employees\*, coded to 0 if the business had no workers
- Evaluated employee performance, coded to 0 if the business had no workers
- Provided feedback to employees, coded to 0 if the business had no workers
- Personal initiative: We measured personal initiative at all five measurement waves with the help of a seven-items scale developed by (26):
  - 1. I actively attack problems.

- 2. Whenever something goes wrong, I search for a solution immediately.
- 3. Whenever there is a chance to get actively involved, I take it.
- 4. I take initiative immediately even when others don't.
- 5. I use opportunities quickly in order to attain my goals.
- 6. Usually I do more than I am asked to do.
- 7. I am particularly good at realizing ideas.

The participants answered the items on a five-point Likert scale ranging from “Totally disagree” to “Totally agree”. The internal consistency of the scale was good, with Cronbach’s alpha values ranging from .72 to .77. The personal initiative score is then the mean of the responses to these seven questions. In order to make the scale more behavior-oriented and a measure of a mindset and to be able to look at the development of personal initiative over time, we added the words “In the last six months” before the scale at the post-treatment measurement occasions. All items were translated from English into French and back. To assure that all participants could understand the items, local translators also translated all items from French into the two most prevalent Togolese local languages and back.

- Capital and labor inputs: This index averaged the z-scores of the following 10 variables according to the procedure described above:

*Labor inputs:*

- Number of hours owner worked personally, winsorized at the 99<sup>th</sup> percentile
- Number of people who work in the business, excluding the entrepreneur, but including family members who work in the business, unpaid workers, temporary workers, apprentices, managers and owners who work in the business
- Number of paid workers
- Number of workers only receiving transport stipends
- Number of unpaid workers
- Number of hours business open per week

*Capital:*

- Value of physical assets, winsorized at the 99<sup>th</sup> percentile
- Capital investments over the past 12 months, winsorized at the 99<sup>th</sup> percentile
- Value of inventory, winsorized at the 99<sup>th</sup> percentile
- Dummy variable taking the value of 1 if the business made a large capital investment (greater than three times the median baseline profits) over the past 12 months

- Innovation index: This index averaged the z-scores of the following 8 variables according to the procedure described above:

- Introduced at least one new product or service over the past 6 months
- Number of new products or services introduced over the past 6 months
- Process innovation: the entrepreneur actively sought new production, marketing or administration techniques over the past 6 months

*Degree of innovation*

- Main new product/service was a new product line
- Main new product/service was inspired by the entrepreneur's ideas
- Business had introduced products or services that were new for the neighborhood
- Quantitative innovativeness of business ideas: the number of business ideas that the entrepreneurs have had in the previous six months. Quantitative innovativeness was measured in the last three follow up waves.
- Qualitative innovativeness of business ideas: We measured qualitative innovativeness of business ideas in the last three follow up measurement waves. In order to assess qualitative innovativeness of business ideas, entrepreneurs were asked to describe their most innovative business idea of the last six months in detail and to describe what they thought made the idea so different from what is usually done in the market. Two independent local coders rated the innovativeness of business ideas. Interrater reliabilities were good, ranging from ICC=.82 to ICC=.86. The codings were done with the help of a coding scheme based on (31). We took the average of the coders' ratings as a measure of qualitative innovativeness of business ideas
- Diversified product line: Entrepreneurs were asked in each round what their primary sector of activity was, whether they operate in a secondary activity or not, and if so what their secondary sector of activity was. This variable was constructed looking at the secondary sector of activity and takes the value of 1 if the secondary sector of activity was different than the secondary activity at baseline. This was determined using the smallest level of sector aggregation we collected.
- Access to finance index: This index averaged the z-scores of the following 7 variables according to the procedure described above, and all variables were recoded to 0 for those who no longer had a business:
  - Maximum amount they could borrow in 2 weeks' time for a business emergency
  - Received at least 1 loan from any source in the past 12 months
  - Received at least 1 loan from a bank or micro finance institution in the past 12 months
  - Sum of the most recent loans received from each source in the past 12 months—0 if no loans received
  - Sum of most recent of financial gifts received for the business
  - Has an account in a bank or microfinance institution
  - Has a business account in a bank or microfinance institution

The outcome variables in Table S7 were defined in the following way:

- Monthly sales (no winsorizing): Defined using the same variable as described in Table 1 outcomes; however, the values have not been winsorized. The variable was coded to 0 for those who no longer had business.
- Monthly sales (IHS): Defined using the same variable as described in Table 1 outcomes; however, the values were transformed using the inverse hyperbolic sine. The variable was coded to 0 for those who no longer had business.

- Monthly profits (no winsorizing): Defined using the same variable as described in Table 1 outcomes; however, the values have not been winsorized. The variable was coded to 0 for those who no longer had business.
- Monthly profits (IHS): Defined using the same variable as described in Table 1 outcomes; however, the values were transformed using the inverse hyperbolic sine. The variable was coded to 0 for those who no longer had a business.
- All business profits: Entrepreneurs were also asked if they own or manage any other businesses. If so, they were asked for these additional business' previous month's profits, after paying all business expenses including the salaries of their employees but before paying themselves a salary. The profits from these additional businesses were added to the main business's previous month's profits. The variable was then winsorized at the 99<sup>th</sup> and 1<sup>st</sup> percentiles. The variable was recoded to 0 for those who no longer had a business.

The outcome variables in Table S13 were defined in the following way:

- Capital and labor inputs: This is the same as described above for Table 2.
- Owner's hours: Entrepreneurs were asked how many hours they personally work in their business in a typical week. They were asked to include time spent purchasing merchandise or inputs, on production, on serving or waiting for customers, or other business activities. This variable was winsorized at the 99<sup>th</sup> percentile and coded to 0 for those who no longer had a business.
- Number of workers: Number of people who work in the business, excluding the entrepreneur, but including family members who work in the business, unpaid workers, temporary workers, apprentices, managers and owners who work in the business. This was coded to 0 for those who no longer had a business.
- Paid workers: Of the number of workers, the number of workers who are paid. This was coded to 0 for those who no longer had a business and for those with no workers.
- Operating hours: Entrepreneurs were asked how many days per week the business is open in a typical week and how many hours per day the business is open in a typical day. This variable is the product of the number of days and the number of hours and was coded to 0 for those who no longer had a business.
- Business assets: Category by category, entrepreneurs were asked the number of items that the business owns and then the approximate value of all of the items in the category in their current condition. This variable is the sum of the approximate value in current condition of all of the different categories of assets, winsorized at the 99<sup>th</sup> percentile. This was coded to 0 for those who no longer had a business. The categories included:
  - Machines and equipment
  - Other work tools
  - Vehicles (car, motorcycle, bicycle, push-cart, trailer)
  - Furniture
  - Land, buildings, kiosks or other installations
  - Other physical assets, excluding inventory

- Investments made: In the same question as described for assets, for each category, entrepreneurs were asked the amount of purchases of these items over the past 12 months. This variable sums the purchases made in all categories and winsorizes it at the 99<sup>th</sup> percentile. This was coded to 0 for those who no longer had a business.
- Inventory levels: First, entrepreneurs were asked whether they had any inventory in stock, including merchandise to resell, production inputs, products in the production process, or detached parts that are currently in the business. For those in commerce who said they do not have any inventory, the interviewer confirmed that the entrepreneur understood the question. Then, the entrepreneur asked the total value in terms of sales price of all of the inventory that the business has currently. The variable was coded to 0 for those with no inventory and for those with no businesses, and it was winsorized at the 99<sup>th</sup> percentile.
- Major investment: This variable was calculated using the investments made variable described above. It was a dummy variable coded to 1 if the investments made were superior or equal to three times the median monthly baseline profits.

The outcome variables in Table S14 were defined in the following way:

- Innovation index: This is the same variable as in Table 2.
- Introduced new products: The business introduced at least one new product or service in the past six months. New brands of similar products were considered new products. This variable was coded to 0 for those with no business.
- Number of new products: Indicates the number of new products and services introduced in the past six months. New brands or similar products were considered new products. This variable was coded to 0 for those with no business.
- Process innovation: Entrepreneurs were asked over the past six months how often they actively sought new production, marketing or administration techniques using the following scale: never, about once a month, about once a week, daily. This was coded 0 for those with no businesses and those who never use the practice and coded 1 for those who use it with any frequency.
- New product line: Entrepreneurs who introduced at least one new product or service were asked to name the main new product or service introduced over the past 6 months. The main product or service was defined as the one that most contributed to turnover. They were then asked whether this product or service was a new product line or a variation, different brand or new model of an existing product line. This variable was coded to 0 for those with no business and for those who had not introduced any new products or services.
- Inspired by own idea: Regarding the main product or service introduced, entrepreneurs were asked whether the main product or service was 1=invented by the business from their own ideas 2=invented by the business but inspired by ideas seen elsewhere 3=Purchased from a supplier 4=Other. This variable was coded 1 if the answer to that question was 1. This variable was coded to 0 for those with no business and for those who had not introduced any new products or services.



- New to neighborhood: Entrepreneurs were asked whether they had introduced any products or services that were new for their neighborhood at the time when they introduced them over the past 6 months. This variable was coded to 0 for those with no business and for those who had not introduced any new products or services.
- Diversified main product line: Entrepreneurs were asked in each round what their primary sector of activity was. This variable takes the value of 1 if the primary sector of activity was different than at baseline. This was determined using the smallest level of sector aggregation we collected.

The outcome variables in Table S15 were defined in the following way:

- Gender attitudes: This index averaged the z-scores of the following 8 variables according to the procedure described above:
  - Hours not spent on caretaking for dependent elderly and children
  - % of household decisions that women in the household can influence: Entrepreneurs were asked who in their household makes the following decisions: daily household expenses, how to use the entrepreneur's income, what to do in case of illness, whether the children go to school or not, whether the entrepreneur works in his/her business or not, whether the entrepreneur and their partner use contraception or not.
  - Attitudes about women's decision-making authority: Entrepreneurs were asked who in the household should have more influence on the several decisions: the husband, the wife, or the husband and wife should have equal influence. For each decision, we created a dummy variable taking the value of 1 if the entrepreneur responded the wife or the husband and wife should have equal influence. This variable was the average of the dummy variables. The decisions included:
    - Household purchases of more than 10,000 FCFA (approximately US\$20)
    - Daily household purchases
    - The wife's personal purchases
    - Borrowing or lending money
    - The wife's career choice
    - If the wife works at home or outside the home
    - The wife's working hours
    - The wife's participation in community groups
    - Family planning (having children)
  - Autonomy of women or of married men's wives: Women were asked whether they could go to different locations on their own without permission, on their own with a male family member's permission, or only accompanied. Married men were asked the same questions about their wives. This variable is the percentage of places where the woman can travel on her own without permission. The locations included:
    - Go to the market to make purchases
    - Go to the clinic for health reasons
    - Visit friends or family in the neighborhood

- Visit friends or family in another neighborhood in Lome
  - Visit friends or family in another city
- Percentage of women expected to face sexual harassment concerning their business: Men and women were asked how many female entrepreneurs out of 10 they expected to be solicited for sexual relations from someone other than their husbands in exchange for business support in the past 12 months.
- Percentage of female respondents having faced sexual harassment in the context of their business in the past twelve months
- Attitudes of acceptable work for women: percentage of the following professions that are acceptable for a woman—mason, market seller, hair braider, mechanic, food seller by the road, carpenter
- Attitudes of acceptable work for men: percentage of the following professions that are acceptable for a man—mason, market seller, hair braider, mechanic, food seller by the road, carpenter
- Registered formally: In round 4, entrepreneurs were asked if they were registered with the Chamber of Commerce or the Business Formality Center and if so, at what date they registered the business. For previous waves, the registration status of the business was calculated by comparing the survey date to the date at which the business registered.
- Networking: This index averaged the z-scores of the following 12 variables according to the procedure described above, and all variables were recoded to 0 for those who no longer had a business:
  - Discusses business ideas with others
  - Discusses new techniques or suppliers with other entrepreneurs
  - Meets with at least one group of entrepreneurs
  - Belongs to the Chamber of Artisans or the DOSI
  - Number of times per year meets with other entrepreneurs
  - Number of entrepreneurs in the groups of entrepreneurs with which they meet

*Benefits from networks*

- Receive money from networks
- Receive new suppliers from networks
- Receive new customers from networks
- Shared tools, inputs, equipment or employees with networks
- Purchased inputs or stocks wholesale together with members from networks
- Made changes from networks

The outcome variables in Table S9 were defined in the following way:

We assessed quantitative and qualitative personal initiative with the help of interview questions adapted from (15) which have been used in in a previous study on personal initiative training for entrepreneurs (16). To code the answers, we used the coding scheme developed in (16) and adapted it to the context of Togolese entrepreneurs.

- *Quantitative personal initiative:* Quantitative personal initiative was measured as the number of changes entrepreneurs have introduced in their businesses in the previous six

months. Two independent local coders rated quantitative personal initiative. Minor changes that did not require a lot of effort were coded as “1” and major changes that required substantial effort in terms of time or financing were coded as “2”. An example for a minor change is painting a wall in the business. A major change is for example the relocation of the business. Interrater reliabilities for quantitative personal initiative were good, ranging from ICC=.93 to ICC=.94.

- *Qualitative personal initiative*: To measure qualitative personal initiative, entrepreneurs were asked for which change they had introduced in the previous six months they had invested the most effort. Subsequently, they reported on their personal initiative regarding this change, answering questions on whether they had developed the idea for the change themselves, implemented the change in a self-starting and unique way, and whether they tried to differentiate their change from changes in other businesses. Two independent local coders rated the entrepreneurs’ answers. They rated the answers on a scale from zero (no change) to five (high level of qualitative personal initiative). An example of high qualitative personal initiative is an entrepreneur producing furniture who has developed the idea to use materials that are unique on the Togolese market. On the internet, he looked for European furniture and got inspired by some furniture made of a special pleather. He put effort into finding the material and produced different prototypes of furniture before he decided on the final products to sell. Interrater reliabilities for qualitative personal initiative were good, ranging from ICC=.95 to ICC=.98.
- *Personal initiative behavior z-score*: To combine the measures of quantitative and qualitative personal initiative, we computed a z-score behavior index of the two measures.

The outcomes in Table S11 were defined in the following way:

- *Big 5 Personality Traits*: We measured personality using the French version of the Big Five Inventory (32). We selected those items that showed the highest item-total correlations in a pre-test with 40 entrepreneurs and adapted the wording to our study context whenever necessary. The items were translated and back-translated into the two most prevalent local languages. We measured extraversion with 3 items ( $\alpha = .66$ ), agreeableness with 4 items ( $\alpha = .60$ ), neuroticism with 4 items ( $\alpha = .68$ ), openness with 4 items ( $\alpha = .63$ ), and conscientiousness with 5 items ( $\alpha = .78$ ). The response scale was a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Reverse coded items were recoded before we computed the scores. The mean of the items of every subscale were taken as measure of the subscale.
- *Entrepreneurial Passion*: Entrepreneurial passion was measured at baseline and round 3 and round 4, using nine items developed by (33). We only included the items of the subscales passion for inventing and passion for developing and excluded all items on passion for founding, as our study participants had already founded their business. We also excluded one item on producing product prototypes (“I feel energized when I am developing product prototypes”) as this item was not applicable for many of the businesses in our study sample. The mean of the remaining nine items constitutes the

entrepreneurial passion score. A sample item of the scale is “It is exciting to figure out new ways to solve unmet market needs that can be commercialized.” Internal consistency was good (baseline:  $\alpha = .81$ ; Follow-up 3:  $\alpha = .85$  Follow-up 4:  $\alpha = .80$ ). The response scale was a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

- *Risk attitude*: Entrepreneurs were proposed two different investments in which the business would have different amounts of profits in good and bad months. The probability of each situation was 50%. The variable indicates the number of the business they chose, with higher scores indicating more risk-seeking behavior. They had the choice between the following 8 businesses:

Business number	Profits in a bad month	Profits in a good month
1	15,000 FCFA	15,000 FCFA
2	13,500 FCFA	28,500 FCFA
3	12,000 FCFA	36,000 FCFA
4	10,500 FCFA	37,500 FCFA
5	9,000 FCFA	45,000 FCFA
6	6,000 FCFA	48,000 FCFA
7	3,000 FCFA	57,000 FCFA
8	0 FCFA	60,000 FCFA

### *Baseline balance*

In Table S2 we compare the baseline characteristics of the three groups in order to show baseline balance on observables and provide a description of the businesses in our study. We see the sample is well balanced on baseline characteristics. In terms of individual characteristics, 53 percent of the sample are female, and the typical owner has not completed secondary schooling, with an average of 8.6 years of schooling. The average age of the entrepreneurs is 41, with a 10-90 range of 29 to 55. Forty eight percent of the firms are in commerce, 27 percent in production/manufacturing, and the remaining 25 percent in services. Monthly sales average 648,179 CFA (US\$1362), and monthly profits 94,512 CFA (\$199). The mean (median) firm has 2.8 (2) workers, with 27 percent of firms having no workers, and 95 percent having 10 workers or fewer. We see at baseline that firms on average are near the middle of the range of both the business practices and personal initiative scales: they are doing 57 percent of practices, and have a mean score of 4.2 out of 5 on personal initiative. We cannot reject that the baseline observables are jointly orthogonal to treatment status when comparing traditional business training to control ( $p=0.748$ ), comparing personal initiative training to control ( $p=0.746$ ), or comparing the two training treatments to each other ( $p=0.496$ ).

Table S4 provides the same table for the subsample that remained to be interviewed at the fourth follow-up survey. We again see baseline on baseline observables for this subsample. We cannot reject the hypothesis that baseline observables are jointly orthogonal to treatment status when comparing traditional business training to control ( $p=0.874$ ), comparing personal initiative

training to control (p=0.563), or comparing the two training treatments to each other (p=0.540). As a result, attrition has not changed the balance across treatment groups.

### *Measuring the impact*

Our primary specification is an intention-to-treat analysis using all four follow-up rounds pooled together, along with the lag of the dependent variable in order to maximize power (19). This was set out in our pre-analysis plan. For outcome  $Y$  we then estimate the following equation for firm  $i$  at time  $t$ :

$$Y_{i,t} = \alpha + \beta_T \text{TraditionalTraining}_i + \beta_{PI} \text{PersonalInitiativeTraining}_i \\ + \gamma Y_{i,0} + \sum \theta_s 1(i \in s) + \sum_{j=1}^4 \delta_j 1(j = t) + \varepsilon_{i,t}$$

Where *TraditionalTraining* and *PersonalInitiativeTraining* are dummy variables for assignment to one or the other training program,  $Y_{i,0}$  is the baseline value of the outcome (with an additional dummy variable included if the baseline data are missing for some observations),  $\theta_s$  are randomization triplet fixed effects,  $\delta_j$  are survey round fixed effects, and the error term  $\varepsilon_{i,t}$  is clustered at the firm level.  $\beta_T$  and  $\beta_{PI}$  then represent the average impact over 2.5 years of being assigned to traditional business training and personal initiative training respectively. A t-test is then used to test these regression coefficients are significantly different from zero. We then conduct an F-test of  $\beta_T = \beta_{PI}$  in order to assess whether the two training programs have similar impacts or not.

In addition to this primary specification, we also investigate the trajectory of impacts by allowing the treatment impacts to vary by follow-up period, estimating:

$$Y_{i,t} = \alpha + \sum_{j=1}^4 \beta_{j,T} 1(j = t) \text{TraditionalTraining}_i \\ + \sum_{j=1}^4 \beta_{j,PI} 1(j = t) \text{PersonalInitiativeTraining}_i \\ + \gamma Y_{i,0} + \sum \theta_s 1(i \in s) + \sum_{j=1}^4 \delta_j 1(j = t) + \varepsilon_{i,t}$$

We then test for equality of treatment impacts across our four rounds by using an F-test to test that  $\beta_{1,T} = \beta_{2,T} = \beta_{3,T} = \beta_{4,T}$  and  $\beta_{1,PI} = \beta_{2,PI} = \beta_{3,PI} = \beta_{4,PI}$ .

We use two approaches to deal with multiple hypothesis testing. The first is to clearly specify in our pre-analysis plan a set of primary outcomes: survival, profitability and sales. We consider improvements in these outcomes the most important metric of training success, and much of the remainder of our analysis involves exploring different potential intermediate channels or mechanisms that might lead to changes in these primary outcomes. Secondly, as detailed above,

we follow (29) and test the significance of families of outcomes by aggregation into a standardized index.

To test whether the influence of the personal initiative training on the profits and sales index (see Table 1) is mediated by the mechanisms seen in Table 2, we used the Monte Carlo method for assessing mediation (MCMAM) (34-35). This involves the following steps. First, we ran regression analyses with the personal initiative training dummy variable predicting the mediator variables, controlling for the traditional business training condition, the profit and sales index at baseline, and the additional dummy variable for missing profit and sales index data at baseline. Second, we ran regression analyses with the personal initiative training dummy variable and the respective mediator variable (business practices, personal initiative, capital and labor inputs, innovation index, or changed activity) predicting the profits and sales index as outcome variable, controlling for the same control variables as in the first step. We used the unstandardized regression coefficient of the personal initiative training dummy variable (a path) from step one and the unstandardized regression coefficient of the respective mediating variable from step two (b path) as well as their squared standard errors to compute the 95% Monte Carlo confidence intervals based on 20,000 repetitions. An interval that does not include zero indicates a significant indirect effect of the personal initiative training on the sales and profits index through the respective mediator. To look at the Monte Carlo confidence intervals for the total indirect effect, we used the a paths from all significant mediator models as well as the b paths of the significant mediators when all included in the same regression model. We used the R code for computing the total indirect effect provided by (34). The survey data, questionnaires and Stata and R code for replication of the results have been deposited in the World Bank's Open Data library at the following link: <http://microdata.worldbank.org/index.php/catalog/2860>

### **3. Round by Round Impacts**

Figure S1 shows that mean profits for the personal initiative training group exceed those of the traditional training and control groups in all four follow-up rounds. Table S5 presents the round-by-round treatment impacts on primary outcomes, along with a test of equality of treatment effects over time. Although we cannot reject equality of treatment effects over time on survival, sales, or for the aggregate index of sales and profits with personal initiative training, we do reject equality of impacts over time for profits. The survey round 3 impacts are lower than the other rounds. The third survey took place in August and September 2015, four months after the presidential election. The post electoral period was marked by social unrest and uncertainty regarding social, political and economic stability. Tensions, planned protests and clashes between protesters and police affected many businesses by forcing them to close or reduce their operating hours. Uncertainty about the security situation may have lowered appetite to invest or take risks. In addition, gas prices were raised in July 2015, increasing the costs of intermediate goods and inputs and sparking additional protests.

Nevertheless, we cannot reject that the impact of training on monthly profits is equal in the other three rounds ( $p=0.112$  for traditional training,  $p=0.124$  for personal initiative training), and

likewise, we cannot reject that the round-by-round impacts of personal initiative training on monthly profits in Table S5 are equal to the pooled estimate of 28,709 reported in Table 1 ( $p=0.112$ ). Given this, we report the pooled impacts in the main text, which maximizes statistical power and gives the average impact over the 2.5 years post-intervention. The round 4 point estimates of the impacts of personal initiative training on sales and profits are slightly larger than these pooled impacts, so reporting the pooled impacts is also conservative in terms of providing information on the lasting impact.

#### **4. Robustness**

##### *Robustness to attrition*

As noted above, the overall rates of attrition were reasonably low, averaging 9 percent. Table S1 showed these rates to differ slightly by treatment status in some rounds, by 2 to 3 percentage points at most. Table S4 showed that the sample responding to the endline was still balanced on baseline observables, suggesting that the different groups should still be comparable even after attrition. Nevertheless, to examine robustness to differential attrition, we employ a bounding exercise following (36).

The results are shown in Table S6. The first column repeats our treatment effects from Table 1 in the main text. The second column provides a lower bound on the treatment effect, by assuming that all the differential attritors were from the topmost tail of the distribution. We therefore trim the firms with highest values of the outcomes from the two treatment groups to balance attrition rates. For example, in the first follow-up, there were 8 more firms responding in the traditional business training group than the control, and 11 more in the personal initiative group. We therefore drop the 8 highest firms in terms of the profits and sales index from the traditional business training group in this round, and the 11 highest from the personal initiative group. We see that this extreme assumption (that it was the absolute best firms that attrited from the control) would result in no significant treatment effects from either treatment.

We therefore consider less extreme adjustments. The third column assumes that the extra firms that attrited from the control group have outcome values that would place them at the 95<sup>th</sup> percentile of the personal initiative group's outcome distribution, and the remaining columns assume they would have been at the 90<sup>th</sup> and 75<sup>th</sup> percentiles. We see that under any of these three assumptions, which still allow for large positive selection into attrition in the control group, that the personal initiative training still has a positive and significant treatment effect, and beats traditional business training. We therefore consider our treatment impacts robust to reasonable assumptions about any impact coming through differential attrition.

##### *Robustness of primary outcomes to other specifications*

Our main specifications use the levels of sales and profits as the outcome, with winsorizing used to reduce the influence of outliers. This is done for two main reasons. The first reason is to allow for the possibility of zeros, and for profits, also to allow for negative values. We code firms which close as earning zero profits and making zero sales. This has the advantage of preserving the randomization and enabling comparisons between treatment groups and the control without

concerns as to whether treatment affects selection into operating. The result is that 10.9 percent of our follow-up observations have zero or negative profits (including 3 percent with negative profits), and 9.0 percent have zero sales. One reason for zero profits and sales is the business being closed. The second reason is that we want to be able to translate the impact in profits into an average level effect for cost-benefit analysis.

Nevertheless, a possible concern with the use of levels is that mean impacts could be driven by the top of the distribution. Table S7 examines the robustness of our key profits and sales outcomes to other specifications. Profits and Sales have a large dispersion, and so our base specification winsorizes at the 99<sup>th</sup> percentile to reduce the influence of outliers. We see that the personal initiative training continues to have a larger treatment impact than traditional business training without this winsorization, but the difference is statistically significant for sales but not for profits. An alternative approach to handling outliers is to apply the inverse-hyperbolic sine transformation, which is similar to a log transformation but allows for zero and negative values. Personal initiative training again has larger impacts than traditional business training using this transformation, although the difference for profits is not statistically significant at conventional levels ( $p=0.119$ ). Finally, the last column of the table considers a broader measure of profits, which also includes any profits earned in secondary businesses. We see the control mean of these profits is approximately 10 percent higher than the mean for our primary measure of profits in the main business. We continue to see a positive and significant impact of personal initiative training on this broader measure of business profitability, and that the impact is significantly larger than for traditional business training.

Figure 1 in the text showed that personal initiative training shifted the entire distribution of profits. It does this through estimating quantile treatment effects on the inverse hyperbolic sine of profits at each fifth quantile between the 5<sup>th</sup> and 95<sup>th</sup>, again using the pooled sample and clustering at the firm level. Figure S2 presents the p-values from testing equality of the personal initiative training with traditional business training at each quantile: we see we can reject equality of treatment impacts at every quantile between the 10<sup>th</sup> and the 90<sup>th</sup>, except for the 15<sup>th</sup> ( $p=0.13$ ) and the 70<sup>th</sup> ( $p=0.20$ ).

#### *No differential impact on primary outcomes by gender*

One of the key motivations for the study was to find a form of business training that would also help female-owned firms to grow, given the limited effectiveness found in several other studies in the literature. In Table S8 we test whether either training program had differential impacts by gender. We see that personal initiative training has a small negative interaction effect for women on business survival, suggesting it may cause slightly more of them to shut down. However, the interaction effects on profits and sales are all positive, but not statistically significant. In contrast, traditional business training has negative interaction effects with being female. These point estimates are consistent with traditional business training being less effective for women. However, for none of our sales or profits measures can we reject equality of treatment effects of the personal initiative training by gender.

## **5. Investigation of Alternative Mechanisms**



### *Self-reporting*

Since not all microenterprises in developing countries keep reliable records, all experiments which aim to measure impacts on profits and sales have had to rely on self-reported survey measures of these outcomes. This is also the case for our experiment. This raises the potential concern of a reporting bias, whereby those who have attended training may change how they report profits and sales in the survey, either as a way of trying to please the interviewer to show gratitude for the program, or because they are somehow more confident or boastful about their business. We have several measures to reduce the likelihood that this is driving the measured impact of personal initiative training or its difference from traditional training.

Firstly, in introducing the survey to participants and requesting their participation, we were careful to delink the survey from the training as much as possible. Participants were told that the survey was “on behalf of Innovations for Poverty Action (IPA), a nonprofit research institution that aims to find innovative solutions for the challenges to development in many different countries”, and that the “goal of this survey is to understand the situation and the characteristics of micro and small enterprises in Togo”. Detailed questions about the training were only asked at the end of the first follow-up survey, and only after questions on sales and profits had been answered. As a consequence, the incentives of participants to exaggerate responses were greatly reduced compared to a situation in which the survey was explicitly tied to the training program or carried out by the program implementers.

Secondly, if such a bias to exaggerate outcomes to show gratitude for training were to exist, we would expect this to apply equally for both types of training. It should therefore not explain why we find larger impacts for the personal initiative training over traditional training. Thirdly, if such a bias were to occur, we might expect to see owner’s emphasizing how hard they are working by over-reporting how much time they spend working in the business. Yet Table S13 shows no change in owner’s hours.

Finally, while the majority of our outcomes are closed form survey measures, we do have several outcomes that may be harder to mis-report and still show more positive effects for personal initiative training. The first is our qualitative measure of personal initiative in Table S9, which is based on independent coding of open-ended questions about the changes introduced in the business over the previous six months. The second is our qualitative measure of innovation, which forms part of our main innovation index, and is reported separately in Table S14. This measure is also based on independent coding of open-ended questions about the most innovative business idea in the last six months. Both of these questions involve more probing by the enumerators, and are harder to mis-report than yes/no questions about business activities or asking financial numbers. For both outcomes we see positive and significant effects of personal initiative training, which are larger than the impacts for traditional training. As such, we do not believe that differential mis-reporting is likely to be the main mechanism behind our results.

### *Additional details on impacts through business practices*

Table S12 explores which business practices were changed with the different training programs. Our overall measure of business practices is comprised of practices in five different domains:

marketing and customer relations, record-keeping, operations and performance management, information and opportunity seeking, and human resource practices. We see positive and significant impacts of each training program on each of these five subcomponents. We cannot reject equality of impacts by treatment status for four out of the five subcomponents, with the only differential effect coming through record-keeping practices, which traditional business training impacts more.

Examining the impacts at the individual practice level confirms further that both training treatments have similar positive impacts on a wide range of business practices. Personal initiative training has significant impacts on 38 out of 47 practices, and traditional business training on 36 practices. The only individual practices where we can reject equality of impacts by type of training in favor of traditional business training are all around record-keeping: keeping all types of accounting books, does not mix business and personal money, and registers all sales and purchases. In contrast, personal initiative training has stronger impacts on more proactive practices like research to learn new things in the sector, asking customers what products they would like to see, visiting competitors to see what they are selling, and asking suppliers what sells well.

#### *Robustness to other measures of personal initiative and psychological channel*

Table S9 shows the effect of both training programs on personal initiative when operationalized with the help of three behavioral measures: quantitative personal initiative behavior, qualitative personal initiative behavior, and the z-score of the two measures.

The personal initiative scale displayed in Table 2 is a widely used, validated scale and therefore a good measure of personal initiative. In order to make it less trait-like and a better measure of mindset we measured personal initiative of the last 6 months (the time elapsed since the last measurement wave) and, thus, overcomes some problems of a pure personality type measure. Personal initiative is defined as proactive behavior in the work context (14) and personal initiative training aims at enhancing personal initiative behavior. Thus, to make the argument that the trainings influence personal initiative, we have to show their impacts on personal initiative behavior. We therefore tested the impact of the two training programs on behavioral measures to check for robustness of our results.

The results for the effects of both trainings on the behavioral personal initiative measures show the same pattern as the results for the effects on the personal initiative scale. Both trainings have a significant positive effect on all behavioral personal initiative measures. Personal initiative training affects all three measures more strongly than the traditional business training.

This impact on personal initiative is enduring. Table S10 shows the personal initiative training has positive and significant impacts in all four rounds, including the last round which occurs 2 years and 5 months after training took place. In contrast, traditional training has a short-term impact on personal initiative, which has disappeared by the last two rounds. The impact of the personal initiative training is statistically different from traditional training in all rounds but the second.

We argue that the main psychological impact of intervention is to change the psychological mindset of personal initiative. Such a mindset can stabilize if it is successful, and so the initial improvement in personal initiative, by spurring business success, can in turn cause this change in mindset to endure over time, as shown above. Table S11 shows personal initiative training also had a greater impact than traditional training on another type of mindset: an affective measure of entrepreneurial passion – this effect is similar to the mindset of personal initiative. We also investigate impacts on the big five personality traits; however, personality traits were collected only in follow-up round 3. Table S11 shows that personal initiative training did have a significant impact on extraversion and openness, and a marginally significant impact on conscientiousness. However, none of these impacts are significantly different by type of training when using a 5 percent significance level, and the  $p=0.07$  value for testing equality of impacts on openness is not significant if we adjust for multiple hypothesis testing across the five outcomes. Therefore, to the extent there are impacts on these psychological traits, they cannot explain why we get different impacts from the different trainings. Finally, we also considered whether the risk-seeking attitude of the entrepreneur changed as a result of either training. Risk attitudes are considered “deep parameters” or “primitives” in most economic models, and a ‘trait’ by psychologists, and are difficult to change. Neither training program changed risk attitudes.

#### *Additional details on capital and labor input impacts*

Table S13 unpacks in further detail the overall capital and labor inputs index in Table 2 of the main text. The personal initiative has a positive impact of about 10 percent in the number of workers, which is statistically different from the traditional managerial training program. Businesses are also reported as operating 2 hours more per week after the personal initiative training. However, there are no significant impacts of either training on owner’s weekly hours worked or the number of paid workers. The personal initiative training has also significant impacts on the use of several capital inputs: firms are holding more business assets, have made more investments in terms of revenues, have more inventories, and more large investments in terms of a binary threshold than the control group. The point estimates are larger for personal initiative training than for traditional business training for these impacts, but the difference is only significant for making large investments. Aggregating these inputs into the standardized index in the first column and in Table 2 shows more input use after personal initiative training.<sup>4</sup>

#### *Additional Details on Innovation*

Table S14 unpacks the overall innovation index measure in Table 2. Personal initiative training results in increased innovation along a number of different dimensions: firms are more likely to introduce new products or services and innovate on processes. The new products they introduce are more likely to constitute a new product line for the firm, to be inspired by their own ideas rather than copying from others, and to be something new for the neighborhood. The coding of open-ended descriptions of business ideas shows that firms’ business ideas are more innovative. While there are some significant impacts of traditional business training, personal initiative

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<sup>4</sup> The aggregate index also includes several additional pre-specified outcomes: the number of unpaid workers, and the number of workers only paid a transport stipend. We cannot reject equality of training treatment impacts on either outcome.

training has significantly larger impacts than traditional business training for many of these measures. These results are therefore consistent with the emphasis in personal initiative training on developing self-starting behaviors that involve constantly looking for new opportunities, and experimenting with new ideas.

The second to last column of Table 2 showed that this innovation resulted in treated firms being more likely to report diversifying a product line. The last column of Table S14 shows this is not the case for the primary business activity. Innovation therefore appears to be getting business owners to diversify their product offerings and doing additional and new activities within their existing business, rather than getting firm owners to change their business activities completely.

#### *Evidence on other pre-specified channels of impact*

Table S15 investigates several other pre-specified potential channels of impact. The first column considers the treatment effect on an index measure of questions on female empowerment and gender attitudes. Neither treatment has a significant impact on this measure. The second column considers firm registration. The traditional business training program discussed the process of how to register formally, whereas the personal initiative training did not. We see an increase in formalization for firms that went through the traditional business training program, but no significant impact for personal initiative training. The third column shows that both training programs lead to increases in firms discussing business ideas with other owners. This may come about through the networks formed by attending regular training sessions with other business owners. However, there is no significant difference in this measure across treatments.

With the exception of formalization, these additional potential channels of impact did not show differential impacts by type of training. Therefore, we do not consider them important mechanisms for explaining why the personal initiative training leads to larger impacts on primary outcomes than the traditional business training. The existing evidence on formalization (e.g. 37) suggests that few informal firms appear to experience gains in profitability through formalizing, so we also do not consider formalization to be a key mechanism.

#### *Mediation Analysis Results*

Table S16 provides the mediation analysis results. A confidence interval that does not include zero indicates a significant indirect effect of the personal initiative training on the sales and profits index through the respective mediator. The results reveal that the innovation index is the only non-significant mediator. Business practices, personal initiative, capital and labor inputs, a diversification of activity, and access to finance are all mechanisms through which personal initiative training affects business success. Business practices by themselves appear to fully mediate the impact of personal initiative training on the outcome measure, but do not account for the difference between the two training treatments. On the other hand, capital and labor inputs and access to finance do not fully mediate the impact of the personal initiative training on their own; however, they do explain the difference between the two trainings on their own. The last column of Table S16 combines all significant mediators, and we see that jointly business practices, personal initiative, capital and labor, diversifying the product line, and access to finance fully mediate the effect of personal initiative training on business success. Furthermore,

they also account for the difference in impacts between the two training treatments, and there is no longer a significant difference in direct impacts of the two trainings after accounting for this group of mediators.

## **6. Return on Investment (ROI) calculations**

The personal initiative training cost \$756 per person offered training, and yielded an average increase in monthly profits of \$60 per month over the first two years post-intervention. If we assume a discount rate of 10 percent, then the return on investment (ROI) depends on the extent to which these returns persist beyond the time frame of our study. We consider several scenarios to give a range of plausible return on investments:

- The most conservative is to assume that there are no gains beyond the two years. Then the ROI is still  $(12*60 + (12*60)/1.1)/756 - 1 = 81.8\%$
- A second scenario assumes that the earnings gains in the third year are only half what they were in the first and second years, and only one quarter in the fourth year, and do not persist thereafter. The ROI under this scenario is 140%.
- A third scenario assumes that the gains last up to 10 years, but are depreciating at 20 percent per year from the third year onwards. The ROI under this scenario is 295%.
- A final scenario is to assume the gains last up to 10 years, but depreciate at 10 percent per year from the third year onwards. The ROI under this scenario is 393%.

Of course it is possible that the gains last beyond 10 years, or grow over time. Either case would result in even larger ROIs.

In contrast, the traditional training cost \$718 per person offered training, and yielded a statistically insignificant average increase in monthly profits of \$23 per month over the first two years. Given the lack of statistical significance in the impact, we should be especially cautious in calculating a return on investment for this training. Under the most conservative assumption that the gains do not persist after two years, the ROI is -26.6%; under the second scenario with depreciating gains in the third and fourth years, the ROI is 3.7%; while under the third scenario with depreciating gains over 10 years, the ROI is 59%. So this training only passes a cost-benefit test if the (statistically insignificant) gain persists well beyond the time frame of our study.

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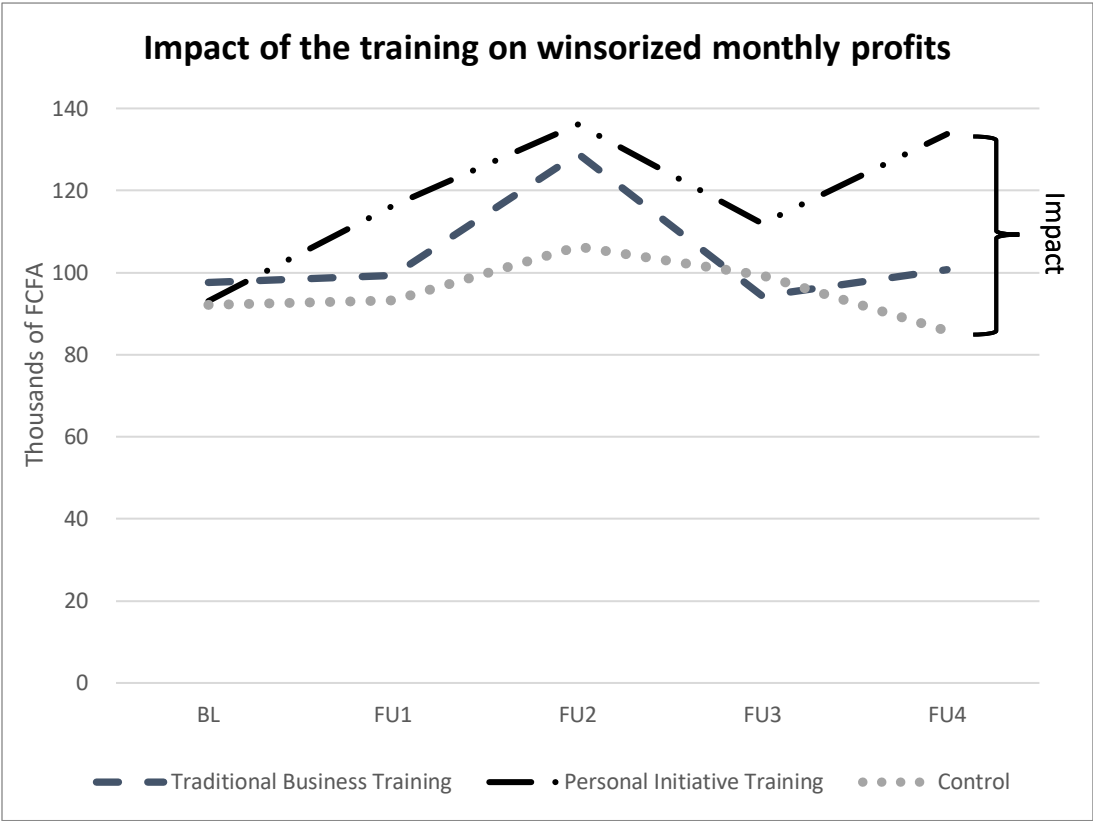
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### **SOM Figures**

Figure S1 Round by Round Trajectory of Monthly Profits

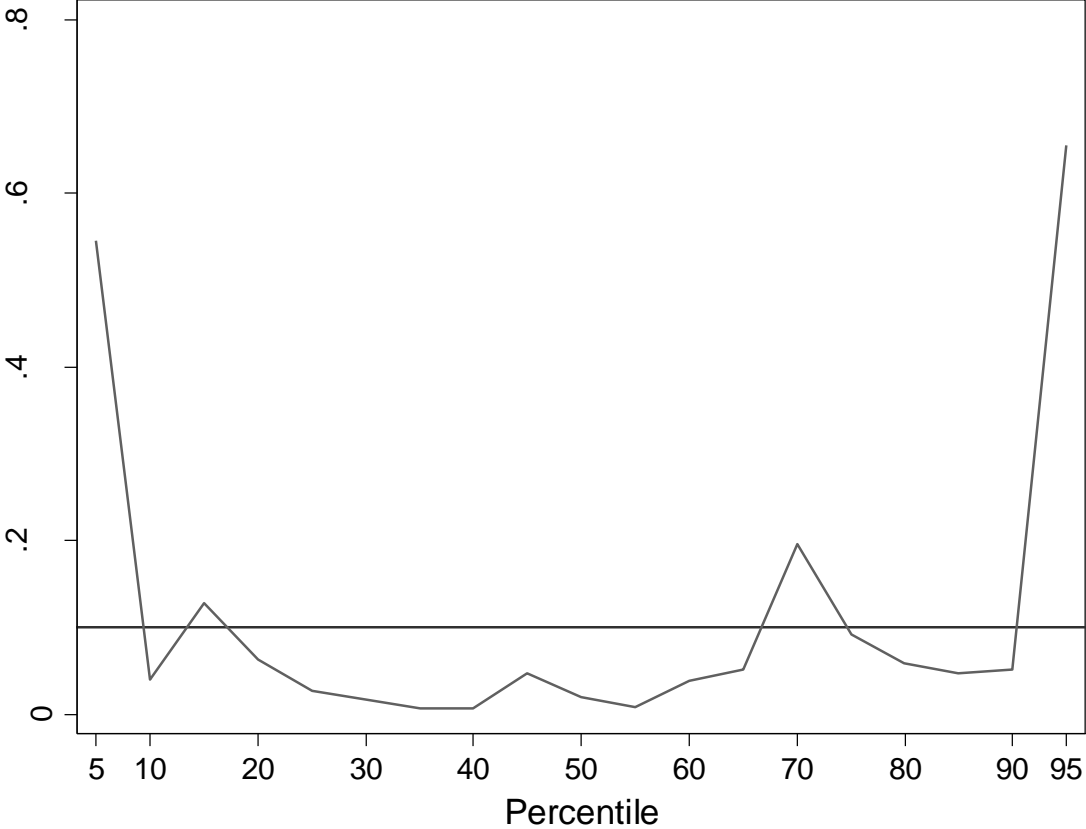
Figure S2 P-Values for Testing Equality of Treatments at Different Quantiles

**Figure S1: Round by Round Trajectory of Monthly Profits**



Notes: BL denotes Baseline, FU1-FU4 denote follow-up 1 through follow-up 4.

**Figure S2: P-values for testing Equality of Training Treatments at Different Quantiles**



Notes: p-value shown is for testing the quantile treatment effect of personal initiative training on the inverse hyperbolic sine of profits (in Figure 1) is equal to that of traditional business training at the specified quantile. In the rejection region, the personal initiative training impact is larger.



**Table S1: Impact of Training on Survey Response Rates**

	<b>Round 1</b>	<b>Round 2</b>	<b>Round 3</b>	<b>Round 4</b>
Traditional Business Training	0.016 (0.014)	0.042** (0.017)	0.032* (0.017)	0.008 (0.019)
Personal Initiative Training	0.022* (0.013)	0.030* (0.017)	0.032* (0.017)	0.028 (0.019)
Sample Size	1,500	1,500	1,500	1,500
Test of Equality of Treatments	0.642	0.462	1.000	0.290
Control Group Mean	0.940	0.898	0.906	0.882
Test of Equality of Traditional Business Training Impacts Over Time p-value:				0.286
Test of Equality of Personal Initiative Training Impacts Over Time p-value:				0.953

Notes:

All regressions include randomization strata. Huber-White standard errors in parentheses.

\*, \*\*, and \*\*\* denotes significance at the 10, 5, and 1 percent levels.

**Table S2: Characteristics of Sample and Baseline Balance**

	Control Group (A)			Traditional Training (B)			Personal Initiative Training (C)			P-values		
	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median	A=B	A=C	A=B=C
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<b>Strata Variables</b>												
Monthly Profits winsorized	92,742	146,411	45,000	97,540	164,456	42,000	93,239	148,770	40,000	0.301	0.299	0.146
Business in commerce sector	0.48	0.50	0.00	0.47	0.50	0.00	0.48	0.50	0.00	0.083	0.158	0.162
Business in production sector	0.27	0.45	0.00	0.27	0.45	0.00	0.28	0.45	0.00	0.318	0.083	0.199
Female	0.53	0.50	1.00	0.53	0.50	1.00	0.52	0.50	1.00	0.564	0.158	0.424
<b>Owner and Firm Characteristics</b>												
Age of business owner	41.3	9.5	41.0	41.3	9.5	41.0	41.0	10.0	40.0	0.939	0.546	0.811
Years of schooling	8.8	4.2	10.0	8.4	4.6	9.0	8.6	4.5	9.0	0.161	0.560	0.301
Age of firm (Years)	12.6	9.1	10.0	12.3	9.0	10.0	11.8	9.1	9.0	0.741	0.093	0.304
Monthly Sales winsorized	653,559	1,293,947	200,000	631,765	1,205,573	200,000	659,255	1,230,999	200,000	0.553	0.930	0.815
Weekly Sales winsorized	198,261	398,481	60,000	188,700	365,106	60,000	211,080	415,638	60,000	0.573	0.604	0.528
Weekly Profits winsorized	32,120	55,166	15,000	34,437	61,829	15,000	31,210	57,106	13,000	0.425	0.480	0.495
Number of workers	2.8	4.1	2.0	2.8	4.0	2.0	2.8	4.0	2.0	0.787	0.872	0.964
Capital stock winsorized	816,324	2,192,140	150,000	742,024	2,149,504	135,050	734,993	2,005,552	147,900	0.580	0.550	0.793
Personal initiative scale	4.26	0.45	4.29	4.21	0.49	4.14	4.23	0.44	4.29	0.069	0.299	0.186
Business practice score	0.57	0.14	0.59	0.56	0.15	0.55	0.57	0.14	0.59	0.292	0.416	0.203
<b>Sample Size</b>	500			500			500					
<b>Joint Orthogonality Test p-value:</b>										0.748	0.746	

Notes: p-values for tests of equality of means between the two groups control for randomization strata.

**Table S3: Summary description of the two programs**

	<b>Traditional Business Training IFC Business Edge</b>	<b>Personal Initiative Training</b>
<b>Length</b>	<b>48 hours</b>	<b>48 hours</b>
Classroom	36 hours - 12 sessions of 3 hours	36 hours - 12 sessions of 3 hours
One-to-one Mentoring	12 hours - 4 individual visits of 3 hours each	12 hours - 4 individual visits of 3 hours each

<b>All-in Cost</b>	<b>\$358,836</b>	<b>\$378,065</b>
Of which: personnel	\$243,065	\$260,069
Cost per invited participant	\$718	\$756

Implementing firm	Impact Conseil, DMC, and Cible	Impact Conseil, DMC, and Cible
Trainers requirements	<ul style="list-style-type: none"> <li>• 4 year university degree or higher in one of the following fields: (i) Fiscal affairs (ii) Marketing (iii) Human resource management (iv) Operations management and quality control (v) Accounting and financial management (vi) Management</li> <li>• Minimum of 3 years of experience doing training or coaching for business in one of the following domains: (i) Marketing (ii) Finance (iii) Accounting or fiscal relations (iv) Human resources (v) Operations and quality control (vi) Personal productivity</li> <li>• At least 2 years of professional experience in management</li> <li>• Availability for the entirety of the mission</li> <li>• Initiative and ability to adapt</li> <li>• Ability to motivate micro-entrepreneurs</li> <li>• Good communication and pedagogical skills</li> <li>• Fluent in French and at least one national language</li> </ul>	<ul style="list-style-type: none"> <li>• 4 year university degree or higher in one of the following fields: (i) Entrepreneurship (ii) Development sociology or social sciences (iii) Human resources (iv) Psychology (v) Management</li> <li>• Minimum of 3 years of experience training or coaching businesses in the domains of entrepreneurship, development sociology, social sciences, human resource management, psychology, or management</li> <li>• At least 2 years of professional experience in the domain of entrepreneurship</li> <li>• Availability for the entirety of the mission</li> <li>• Initiative and ability to adapt</li> <li>• Ability to motivate micro-entrepreneurs</li> <li>• Good communication and pedagogical skills</li> <li>• Fluent in French and at least one national language</li> <li>• Experience working with illiterate adults is desirable</li> </ul>
Language	Materials in French, training in simple French with inputs in local languages	Materials in French, training in simple French with inputs in local languages
Training of trainers	March 3-7, 2014	March 3-7, 2014
Size of classroom	20 people	20 people
Locations of classroom training	Hotel conference rooms in neighborhoods where businesses were located	Hotel conference rooms in neighborhoods where businesses were located
Trainers	Different trainer for each module. Each of the 12 training sessions within a class included a	Twelve trainers in total. Each trainer instructed a cohort on all topics. They then mentored

	separate trainer specialized in the topic. Trainers were randomly assigned to mentoring of one of their classes.	individuals from the class they had taught.
Take-up of classroom training	84%	84%
Attendance of 10-12 sessions (and benefited from mentoring)	71%	73%

<b>Content</b>	<p><u>Accounting and financial management (12 hrs)</u></p> <ul style="list-style-type: none"> <li>• Advantages of record keeping</li> <li>• Use simple accounting tools</li> <li>• Establish an inventory record</li> <li>• Understand the financial situation</li> <li>• Calculate the unit cost of a product or service</li> <li>• Interpret business profits</li> <li>• Importance of planning your cash flow</li> <li>• How to establish a cash flow plan</li> <li>• What constitutes a good cash flow plan</li> <li>• Identify means to increase cash flow</li> <li>• Efficiently manage urgent needs</li> <li>• Plan for the expansion of the business</li> <li>• Know how to finance the expansion of the business</li> </ul> <p><u>Commercial management and marketing (15 hrs)</u></p> <ul style="list-style-type: none"> <li>• Importance of customer service</li> <li>• Identify the customer base</li> <li>• Techniques to better serve customers</li> <li>• Difference between consultative and transactional sales</li> <li>• 6 steps of the consultative sales cycle</li> <li>• Consultative sales techniques into practice</li> <li>• Market segmentation</li> <li>• Key advantages of a product</li> <li>• Be able to position oneself in a market</li> <li>• 4 key elements (4 Ps) of marketing</li> <li>• Interaction between different steps in the marketing mix</li> <li>• Commercial negotiations</li> <li>• Negotiations</li> <li>• Effectively conduct a negotiation</li> <li>• Manage difficult situations and disputes</li> </ul> <p><u>Human resource management (6 hrs)</u></p> <ul style="list-style-type: none"> <li>• Steps preceding the decision to hire</li> </ul>	<p><u>Being Self-Starting (3 hrs)</u></p> <ul style="list-style-type: none"> <li>• Self-starting means to start actions without waiting for outside instructions or role models</li> <li>• Understand and identify self-starting behavior. Differentiate from reactive behavior</li> <li>• Internalize that being self-starting means to spend energy and to take some risks. Being self-starting as the only way to sustainable success</li> </ul> <p><u>Innovation and Opportunity Identification (8 hrs)</u></p> <ul style="list-style-type: none"> <li>• Innovation to be ahead of competitors in the long run</li> <li>• Creativity and new ways of thinking to generate new business ideas</li> <li>• Build on own strengths, interests, and resources to generate new business ideas</li> <li>• Look for unusual and unique sources of information</li> <li>• Own needs, check market needs, changes and problems to generate new business ideas</li> <li>• Evaluate generated business ideas -- feasible or not. Feedback from different people to make a good judgment</li> </ul> <p><u>Goal Setting (3 hrs)</u></p> <ul style="list-style-type: none"> <li>• Set goals that follow the principles of good goal setting (specific, measureable, ambitious, realistic, time-bound) “SMART-PI”</li> <li>• Set long-term goals</li> </ul> <p><u>Action Planning (10 hrs)</u></p> <ul style="list-style-type: none"> <li>• Necessary steps to achieve the goal</li> <li>• Keep the plan flexible</li> <li>• Organize steps and schedule them, weekly</li> </ul>
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	<ul style="list-style-type: none"> <li>• Recruitment procedures</li> <li>• Importance of making employees loyal to the competitiveness of the business</li> <li>• Functions of human resource management</li> <li>• Identify the best employees</li> <li>• Tools to make employees loyal and how to put them into practice</li> </ul> <p><u>Formalization and fiscal responsibilities (3 hrs)</u></p> <ul style="list-style-type: none"> <li>• Know the basic fiscal notions about taxes for the development of their business</li> <li>• Understand the advantages of formalizing the business and the necessary process and procedures</li> </ul>	<p>and long-term.</p> <ul style="list-style-type: none"> <li>• Monitor progress and see what to change in order to reach the goal <ul style="list-style-type: none"> <li>• Financial Planning: Be active in getting minimally needed finance</li> <li>• Choose cheapest sources of finance</li> <li>• Use bootstrapping methods in order to minimize the reliance on external sources of finance</li> <li>• Not to give up just because of lack of financial resources</li> </ul> </li> </ul> <p><u>Feedback (3 hrs)</u></p> <ul style="list-style-type: none"> <li>• Importance of feedback and its value</li> <li>• Use different sources of feedback</li> <li>• Look for feedback that is difficult to get</li> <li>• Actively look for negative feedback</li> </ul> <p><u>Overcoming Barriers (3 hrs)</u></p> <ul style="list-style-type: none"> <li>• Think of possible barriers</li> <li>• Find creative ways of overcoming these barriers in the long run</li> <li>• Not give up when obstacles occur</li> </ul> <p><u>Repetition of the Content (3 hrs)</u></p> <ul style="list-style-type: none"> <li>• Help entrepreneurs remember and synthesize the content of the training.</li> </ul> <p><u>Personal Project (3 hrs)</u></p> <ul style="list-style-type: none"> <li>• Develop a personal project to implement in their business during the mentoring phase</li> <li>• Participants give each other feedback</li> <li>• Trainer provides feedback to encourage projects that are more innovative, action oriented and future oriented</li> <li>• Entrepreneurs sign a contract with themselves to implement training principles</li> </ul>
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*Additional notes on costs:* The total cost of providing the training consists of four categories: Personnel costs which consist of costs to pay the local trainers and international personnel costs who were in charge of training the trainers and monitoring quality; venue hire and food costs for the training sessions; logistics costs such as materials and transportation; and taxes. Since detailed time allocation of the senior management of the training firm across the two trainings was not kept, her salary was divided equally among the two training types for this costing. However, she was responsible for monitoring the quality of the traditional training, whereas a different person monitored the PI training and her costs were added into the PI training costs only. So the effective cost of the two trainings would be even closer to each other than the estimate above.

**Table S4: Baseline Balance for Sample Interviewed at Last Follow-up**

	Control Group (A)			Traditional Training (B)			Personal Initiative Training (C)			P-values		
	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median	A=B	A=C	A=B=C
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<b>Strata Variables</b>												
Monthly Profits winsorized	93,293	151,249	40,000	95,976	165,111	40,000	89,620	141,565	40,000	0.421	0.159	0.052
Business in commerce sector	0.46	0.50	0.00	0.46	0.50	0.00	0.46	0.50	0	0.101	0.181	0.180
Business in production sector	0.29	0.45	0.00	0.28	0.45	0.00	0.28	0.45	0	0.344	0.101	0.218
Female	0.52	0.50	1.00	0.52	0.50	1.00	0.52	0.50	1	0.585	0.181	0.447
<b>Owner and Firm Characteristics</b>												
Age of business owner	41.5	9.6	41.0	41.1	9.5	40.5	40.9	9.8	40.0	0.588	0.536	0.742
Years of schooling	8.8	4.2	10.0	8.5	4.4	9.0	8.8	4.4	9.0	0.355	0.970	0.622
Age of firm (Years)	12.8	9.1	11.0	12.5	9.2	10.0	11.8	9.0	9.0	0.898	0.113	0.206
Monthly Sales winsorized	645,437	1,295,432	200,000	633,175	1,239,935	200,000	660,198	1,249,202	200,000	0.325	0.978	0.690
Weekly Sales winsorized	195,495	402,866	60,000	190,723	377,842	57,000	210,760	420,471	60,000	0.721	0.688	0.647
Weekly Profits winsorized	32,906	57,032	15,000	34,208	62,911	15,000	29,965	53,151	13,000	0.551	0.247	0.155
Number of workers	2.9	4.2	2.0	3.0	4.2	2.0	2.9	4.1	2.0	0.506	0.993	0.812
Capital stock winsorized	800,845	2,086,121	150,030	703,718	1,999,853	148,000	750,519	2,019,801	155,000	0.372	0.998	0.807
Personal initiative scale	4.25	0.44	4.29	4.20	0.49	4.14	4.23	0.44	4.28571	0.061	0.962	0.154
Business practice score	0.57	0.13	0.59	0.56	0.15	0.55	0.58	0.14	0.58621	0.224	0.270	0.196
<b>Sample Size</b>	441			445			455					
<b>Joint Orthogonality Test p-value:</b>										0.874	0.563	

Notes: p-values for tests of equality of means between the two groups control for randomization strata.

**Table S5: Round-by-Round Impacts on Primary Outcomes**

	Round 1	Round 2	Round 3	Round 4	p-value for test of equality across rounds
<b>Panel A: Firm Survival</b>					
Traditional Business Training	0.003 (0.008)	0.000 (0.011)	-0.004 (0.013)	-0.018 (0.018)	0.688
Personal Initiative Training	0.005 (0.008)	0.003 (0.011)	-0.016 (0.014)	0.001 (0.017)	0.460
Sample Size	1,429	1,443	1,444	1,476	
Test of Equality of Treatments	0.779	0.769	0.386	0.254	
Control Group Mean	0.981	0.971	0.964	0.927	
<b>Panel B: Monthly Sales (Winsorized at the 99th percentile)</b>					
Traditional Business Training	5,152 (61,662)	103,830 (89,860)	-39,924 (84,740)	40,260 (115,233)	0.318
Personal Initiative Training	170.353** (71,288)	73,539 (90,866)	61,759 (88,216)	131,976 (117,243)	0.818
Sample Size	1,429	1,393	1,416	1,404	
Test of Equality of Treatments	0.019	0.736	0.242	0.425	
Control Group Mean	619,367	734,332	696,389	675,056	
<b>Panel C: Monthly Profits (Winsorized at the 99th percentile)</b>					
Traditional Business Training	6,110 (9,027)	22,644* (12,662)	-4,946 (9,126)	14,845 (13,497)	0.046
Personal Initiative Training	23,079** (9,730)	29,779** (12,550)	12,647 (9,571)	47,923*** (14,645)	0.077
Sample Size	1,429	1,393	1,416	1,404	
Test of Equality of Treatments	0.088	0.590	0.061	0.029	
Control Group Mean	93,192	106,314	99,233	85,791	

**Table S5 continued: Round-by-Round Impacts on Primary Outcomes**

	Round 1	Round 2	Round 3	Round 4	p-value for test of equality across rounds
<b>Panel D: Weekly Profits (Winsorized at the 99th percentile)</b>					
Traditional Business Training	-249 (2,778)	7,649** (3,037)	-946 (3,633)	4,904 (4,242)	0.033
Personal Initiative Training	4,762* (2,882)	9,037*** (2,980)	138.3 (3,432)	12,291*** (4,317)	0.023
Sample Size	1,429	1,393	1,416	1,395	
Test of Equality of Treatments	0.090	0.670	0.762	0.093	
Control Group Mean	32,968	24,813	33,727	30,040	
<b>Panel E: Profits and Sales Index</b>					
Traditional Business Training	-0.012 (0.040)	0.071 (0.047)	-0.027 (0.043)	0.060 (0.058)	0.063
Personal Initiative Training	0.112** (0.045)	0.097** (0.047)	0.033 (0.045)	0.152*** (0.058)	0.200
Sample Size	1,429	1,394	1,416	1,404	
Test of Equality of Treatments	0.005	0.591	0.187	0.137	
Control Group Mean	0.000	0.000	0.000	0.000	

Notes:

All regressions include randomization strata.

Huber-White robust standard errors in parentheses. \*, \*\*, \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

Sales are winsorized (capped) at the 99th percentile and Profits at the 1st and 99th percentile, reducing the influence of outliers, and are expressed in terms of real CFA francs.

Profits and sales index is the mean of standardized z-scores of our various profit and sales measures.



**Table S6: Robustness of Primary Impact to Differential Attrition**

	<b>Table 1 Impact</b>	<b>Impact if we assume the additional attritors in the control group were from the:</b>			
		<b>Top</b>	<b>95th</b>	<b>90th</b>	<b>75th</b>
<b>Panel A: Profits and Sales Index</b>					
Traditional Business Training	0.029 (0.030)	-0.037 (0.024)	-0.007 (0.031)	0.011 (0.031)	0.030 (0.031)
Personal Initiative Training	0.100*** (0.031)	0.006 (0.024)	0.063** (0.031)	0.081*** (0.031)	0.101*** (0.031)
Sample Size	5,643	5,538	5,699	5,699	5,699
<b>Panel B: Monthly Profits</b>					
Traditional Business Training	10,746 (6,802)	-7,049 (5,176)	1,212 (6,881)	5,957 (6,860)	11,090 (6,896)
Personal Initiative Training	28,709*** (7,110)	2,476 (5,106)	19,054*** (7,139)	23,905*** (7,094)	29,151*** (7,103)
Sample Size	5,642	5,537	5,698	5,698	5,698

**Notes:**

Data are from four survey rounds collected by the authors, and show average impact over the two-years post-training. All regressions include randomization strata and survey wave dummies.

Huber-White robust standard errors in parentheses, clustered at the firm level.

\*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

Top denotes that top of treatment group distribution trimmed for differential attrition.

95th, 90th, and 75th denote that additional attritors in control group assumed to have outcome value at this percentile of the personal initiative training group distribution.

**Table S7: Robustness of Primary Outcomes to Other Specifications**

	Monthly Sales (No Winsorizing)	Monthly Sales (IHS)	Log (Sales +1)	Weekly Sales (Winsorized)	Monthly Profits (No Winsorizing)	Monthly Profits (IHS)	Log (Profits +1)	All Business Profits
Traditional Business Training	-203,131 (150,196)	-0.020 (0.148)	-0.016 -0.141	22,347 (16,343)	21,924* (11,991)	0.014 (0.174)	-0.031 -0.127	12,278 (7,938)
Personal Initiative Training	38,515 (166,676)	0.270* (0.147)	0.265* (0.140)	16,697 (16,169)	34,404*** (12,555)	0.268 (0.172)	0.343*** -0.1237	31,506*** (8,213)
Sample Size	5,642	5,642	5,642	5,633	5,642	5,642	5,367	5,643
Test of Equality of Treatments	0.073	0.040	0.038	0.722	0.437	0.119	0.002	0.028
Control Group Mean	923,336	11.95	11.32	193,057	100,104	9.97	9.99	107,279

**Notes:**

Data are from four survey rounds collected by the authors, and show average impact over the two-years post-training.

All regressions include randomization strata and survey wave dummies. Huber-White robust standard errors in parentheses, clustered at the firm level.

\*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

Unwinsorized data do not truncate the influence of outliers.

IHS is the inverse-hyperbolic sine, which is similar to a logarithm transformation

All Business Profits includes profits from any other businesses also run by the business owner, and are winsorized at percentiles 1, and 99.

Weekly Sales are winsorized at the 99th percentile

**Table S8: No Differential Impact on Primary Outcomes by Gender**

	Business Survival	Monthly Sales	Monthly Profits	Weekly Profits	Profits and Sales Index
Traditional Business Training	-0.014 (0.013)	127,361 (83,263)	18,138* (10,983)	5,530 (3,384)	0.047 (0.048)
Traditional Training*Female	0.017 (0.016)	-172,098 (116,110)	-14,029 (13,721)	-4,688 (4,171)	-0.028 (0.061)
Personal Initiative Training	0.010 (0.012)	94,491 (84,654)	25,609** (11,222)	6,447** (3,149)	0.086* (0.046)
Personal Initiative Training*Female	-0.025 (0.016)	38,857 (117,586)	5,911 (14,301)	481 (3,998)	0.032 (0.061)
Sample Size	5,792	5,642	5,642	5,633	5,643
Control Mean: Female	0.960	683,798	79,337	24,977	-0.040
Control Mean: Male	0.960	677,540	114,379	36,363	0.040

**Notes:**

Data are from four survey rounds collected by the authors, and show average impact over the two-years post-training. All regressions include randomization strata and survey wave dummies.

Huber-White robust standard errors in parentheses, clustered at the firm level.

\*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

Sales are winsorized (capped) at the 99th percentile and Profits at the 1st and 99th percentile, reducing the influence of outliers, and are expressed in terms of real CFA francs.

Profits and sales index is the mean of standardized z-scores of our various profit and sales measures.

**Table S9: Robustness to Other Measures of Personal Initiative**

	Personal Initiative Behavior Quantitative	Personal Initiative Behavior Qualitative	Personal Initiative Behavior Z-Score
Traditional Business Training	0.499*** (0.056)	0.400*** (0.054)	0.302*** (0.036)
Personal Initiative Training	0.702*** (0.057)	0.620*** (0.054)	0.445*** (0.036)
Sample Size	5,479	5,479	5,479
Test of Equality of Treatments	0.000	0.000	0.000
Control Group Mean	1.081	1.539	0.000

**Notes:**

Data are from four survey rounds collected by the authors, and show average impact over the two-years post-training.

All outcomes were measured at all follow up measurement waves.

All regressions include randomization strata and survey wave dummies. Huber-White robust standard errors in parentheses, clustered at the firm level.

\*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

Quantitative personal initiative behavior is the number of changes in the business in the last 6 months.

Qualitative personal initiative behavior is the personal initiative shown in the change with the most effort.

Personal initiative behavior z-score is the mean of standardized z-scores of quantitative and qualitative PI behavior.

**Table S10: Personal Initiative Training Has an Enduring Impact on Personal Initiative**

	Personal Initiative in:			
	Round 1	Round 2	Round 3	Round 4
Traditional Business Training	0.107*** (0.030)	0.098*** (0.030)	0.016 (0.030)	0.035 (0.033)
Personal Initiative Training	0.163*** (0.030)	0.145*** (0.031)	0.076*** (0.029)	0.105*** (0.031)
Sample Size	1,429	1,383	1,387	1,339
Test of Equality of Treatments	0.054	0.121	0.046	0.026
Control Group Mean	4.227	4.273	4.312	4.474

All regressions include randomization strata. Huber-White robust standard errors in parentheses.

\*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

**Table S11: Impact on the Big Five Personality Traits, Risk Attitude, and Entrepreneurial Passion**

	<b>Extraversion</b>	<b>Agreeableness</b>	<b>Neuroticism</b>	<b>Conscientiousness</b>	<b>Openness</b>	<b>Risk Attitude</b>	<b>Passion</b>
Traditional Business Training	0.105* (0.056)	0.022 (0.040)	-0.007 (0.046)	0.028 (0.029)	0.025 (0.035)	0.123 (0.100)	0.013 (0.017)
Personal Initiative Training	0.141** (0.055)	0.050 (0.038)	-0.075 (0.046)	0.058* (0.030)	0.087** (0.036)	0.138 (0.102)	0.065*** (0.017)
Sample Size	1,387	1,387	1,387	1,387	1,387	2,726	2,726
Test of Equality of Treatments	0.484	0.464	0.143	0.301	0.068	0.876	0.002
Control Group Mean	3.522	4.425	2.056	4.517	4.178	4.612	4.574

All regressions include randomization strata. Huber-White robust standard errors in parentheses.

Big Five measured in follow-up round 3 only, entrepreneurial passion and risk aversion in rounds 3 and 4.

\*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

**Table S12: Impacts on Subcomponents of the Business Practices Index**

	Marketing	Record-keeping	Operations Management	Information-Seeking	Human Resource Management
Traditional Business Training	0.058*** (0.010)	0.150*** (0.010)	0.039*** (0.009)	0.029*** (0.009)	0.039*** (0.012)
Personal Initiative Training	0.067*** (0.009)	0.102*** (0.010)	0.041*** (0.009)	0.036*** (0.009)	0.053*** (0.012)
Sample Size	5,638	5,637	5,638	5,639	5,641
Test of Equality of Treatments	0.355	0.000	0.750	0.389	0.234
Control Group Mean	0.690	0.300	0.780	0.780	0.380

**Notes:**

Data are from four survey rounds collected by the authors, and show average impact over the two-years post-training

All regressions include randomization strata and survey wave dummies.

Huber-White robust standard errors in parentheses, clustered at the firm level. \*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

**Table S13: Further Detail on Impacts on Capital and Labor Inputs**

	Capital and Labor Inputs	Owner's Hours	Number of Workers	Paid Workers	Operating Hours	Business Assets	Investments Made	Inventory Levels	Major Investment
Traditional Business Training	0.032* (0.020)	0.017 (0.970)	-0.088 (0.140)	0.020 (0.142)	0.851 (0.990)	294,216** (114,984)	37,172 (30,054)	97,611 (78,724)	0.031** (0.015)
Personal Initiative Training	0.078*** (0.020)	1.179 (0.960)	0.277* (0.153)	0.143 (0.154)	2.334** (0.969)	330,389*** (112,858)	82,306*** (29,779)	132,756* (78,846)	0.072*** (0.015)
Sample Size	5,655	5,631	5,653	5,641	5,632	4,204	4,191	5,632	4,191
Test of Equality of Treatments	0.024	0.225	0.019	0.445	0.128	0.752	0.155	0.658	0.006
Control Group Mean	0.000	57.54	2.97	1.49	60.84	911,258	188,357	897,674	0.190

**Notes:**

Data are from four survey rounds collected by the authors, and show average impact over the two-years post-training

All regressions include randomization strata and survey wave dummies.

Huber-White robust standard errors in parentheses, clustered at the firm level. \*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

All capital outcomes and the number of hours the owner works are winsorized at the 99th percentile. Financial variables are in real CFA.

Business assets and investments made were not measured in the first follow-up survey round.

Owner's hours and Paid Workers were not measured at baseline.



**Table S14: Further Detail on Innovation Responses**

	Innovation Index	Introduced New Products	Number of New Products	Process Innovation	New Product Line	Inspired by Own Idea	New to Neighborhood	Quantitative Innovation	Qualitative Innovation	Diversify main product
Traditional Business Training	0.117** (0.050)	0.084*** (0.016)	-0.234 (0.447)	0.020* (0.011)	0.048* (0.028)	0.034*** (0.010)	0.028* (0.016)	0.080 (0.201)	0.028 (0.025)	0.011 (0.018)
Personal Initiative Training	0.309*** (0.070)	0.163*** (0.016)	0.490 (0.555)	0.030*** (0.011)	0.120*** (0.028)	0.079*** (0.010)	0.066*** (0.016)	-0.018 (0.186)	0.066** (0.025)	0.027 (0.018)
Sample Size	5,639	5,638	4,202	5,635	1,429	5,631	2,816	4,168	4,114	5,639
Test of Equality of Treatments	0.011	0.000	0.134	0.317	0.012	0.000	0.021	0.533	0.122	0.371
Control Group Mean	0.000	0.290	1.290	0.880	0.200	0.110	0.150	2.58	2.09	0.170

**Notes:**

Data are from four survey rounds collected by the authors, and show average impact over the two-years post-training

All regressions include randomization strata and survey wave dummies.

Huber-White robust standard errors in parentheses, clustered at the firm level. \*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

Number of new products not asked in follow-up survey round 1.

New product line only asked in follow-up surveys round 1 and 4.

Inspired by Own Idea indicates that the new product or service offered was inspired by the entrepreneur's own ideas.

New to Neighborhood indicates product or service introduced was new to their neighborhood, asked in rounds 3 and 4 only

Quantitative and Qualitative innovation measures come from coding of open-ended responses in rounds 2 to 4. Quantitative innovation measures the number of ideas, and qualitative an assessment of the innovativeness of the most innovative idea.

**Table S15: Evidence on Other Pre-Specified Potential Mechanisms**

	Gender Attitudes	Registered Formally	Networking
Traditional Business Training	0.005 (0.017)	0.068*** (0.015)	0.135*** (0.032)
Personal Initiative Training	-0.008 (0.017)	0.015 (0.014)	0.117*** (0.031)
Sample Size	2,732	5,632	4,210
Test of Equality of Treatments	0.440	0.000	0.580
Control Group Mean	0.000	0.120	0.000

**Notes:**

Data are from four survey rounds collected by the authors, and show average impact over the two-years post-training

All regressions include randomization strata and survey wave dummies.

Huber-White robust standard errors in parentheses, clustered at the firm level.

\*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

Gender attitudes is an index of questions asked in rounds 3 and 4 on female autonomy and attitudes

Registered formally denotes registered with the Chamber of Commerce or the CFE

Networking is an index of questions on discussing ideas with other entrepreneurs, and meeting in business groups

**Table S16: Mediation Analysis Results**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	MV: Business Practices	MV: Personal Initiative	MV: Capital and Labor Inputs	MV: Innovation Index	MV: Diversified Product Line	MV: Access to Finance	MV: All Significant
	Profits and Sales Index	Profits and Sales Index	Profits and Sales Index	Profits and Sales Index	Profits and Sales Index	Profits and Sales Index	Profits and Sales Index
Traditional Business Training	-0.04 (0.029)	0.027 (0.031)	0.017 (0.027)	0.026 (0.030)	0.024 (0.030)	0.028 (0.032)	-0.007 (0.030)
Personal Initiative Training	0.032 (0.030)	0.092*** (0.031)	0.054* (0.028)	0.092*** (0.031)	0.096*** (0.031)	0.075** (0.032)	0.022 (0.031)
Business Practices	1.200*** (0.077)						0.581*** (0.092)
Personal Initiative		0.089*** (0.021)					0.001 (0.023)
Capital and Labor Inputs			0.587*** (0.047)				0.478*** (0.060)
Innovation Index				0.029 (0.023)			
Diversified product line					0.052** (0.025)		-0.045* (0.027)
Access to Finance						0.188** (0.079)	0.096 (0.062)
Sample Size	5,634	5,535	5,634	5,634	5,627	4,204	4,102
Test of Equality of Treatments	0.017	0.045	0.192	0.039	0.022	0.153	0.353
Control Group Mean	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Monte Carlo 95% CIs for Indirect Effect	[0.049; 0.089]	[0.006; 0.017]	[0.021; 0.074]	[-0.005; 0.025]	[0.000; 0.010]	[0.003; 0.053]	[0.022; 0.088]

**Notes:**

Data are from four survey rounds collected by the authors, and show average impact over the two-years post-training.

All regressions include randomization strata and survey wave dummies. Huber-White robust standard errors in parentheses, clustered at the firm level.

\*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels respectively.

The numbers in square brackets show the upper limits and lower limits of the Monte Carlo 95% confidence intervals for the indirect effects of personal initiative training on the profits and sales index through the respective mediators.

Access to Finance index includes potential and actual use of finance, as well as bank account ownership. Financial questions not asked round 1