

Training Entrepreneurs

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VoxDevLits are wiki-inspired literature reviews that aim to summarise the evidence base on narrowly defined topics related to development economics. Each Lit is written by a community of scholars working on the specific topic addressed in the review. They are intended for both policymakers and researchers. We aim to describe what we have learned from research and to highlight the important questions for which evidence is lacking. The Lits are living documents that will be updated approximately once per year. All published versions will be available on the VoxDev website so that scholars can cite the reviews with confidence that the version cited will be accessible in the future.

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Abstract

Aid agencies and governments spend more than a billion US\$ on entrepreneurship training annually. What have we learned about the effectiveness of training? We review research on entrepreneurship training. Classroom-based training remains the most popular method of training owners and managers of small firms. A meta-analysis shows that the standard training model has modestly positive effects, on average, though the effects imply reasonably high returns on investments in training, given low costs per participant. Innovation on this basic training model has increased in recent years, particularly with regard to content. Both personal initiative and rule-of-thumb training show promise for subsistence-level enterprises. Individual consulting has shown significant positive effects for larger enterprises, but the model is expensive and markets for consulting do not appear to work well. Selection is important, particularly in matching the type of training with the type of enterprise. There are several seemingly promising approaches to training where definitive evidence is lacking. For example, Kaizen approaches and incubators and accelerators both appear to have positive effects, though the evidence is limited and, in the case of accelerators, there is limited evidence on whether the effects come primarily from selection or from the content of the programmes themselves.

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Summary

Aid agencies and governments spend more than a billion US\$ on entrepreneurship training annually. What have we learned about the effectiveness of training? We review the current understanding of enterprise training. Firms and entrepreneurs are not all the same, and many programmes are targeted to specific types of businesses. Our review is modular, designed so that readers interested in one particular topic do not need to read the entire review. We summarise the state of knowledge in each section as follows:

Traditional entrepreneurship training has modest but (across studies) significant effects on improving business practices and business outcomes for microenterprises. There is a lot of heterogeneity in both samples and results, so there is less guidance on which groups benefit most from traditional training.

Personal initiative and heuristic training can work well for subsistence entrepreneurs, although the quality of the trainers appears to matter a lot. It seems doubtful that medium-sized business owners lack drive and initiative.

Kaizen offers promise for smaller manufacturing firms above the subsistence level, although there are still fewer studies of this approach, and it has not been benchmarked against other training programmes.

Consulting appears to work, leading to improvements for both medium/large firms, and also for smaller firms with an average of 14 workers. However, consulting is expensive, and it is less clear how to scale such programmes. A group-based consulting approach offers potential, and more work is needed on ways to improve the market for consulting services.

Evidence on the effectiveness of incubators and accelerators in developing countries is still scarce, and it is unclear how much the training component matters, and which other non-monetary services have meaningful impacts.

Mentoring of subsistence firms does not appear to offer additional value beyond the cheaper in-person traditional training. Mentoring may work better as a substitute for training, particularly with more advanced firms looking to innovate, but evidence is limited. Matching firms with well-performing peers also offers promising results, although the impacts depend on the type of peer and only certain information will diffuse this way.

There is a need for further experimentation with alternative delivery methods, particularly online training **and the use of AI**, while television edutainment and SMS messages have not shown detectable impacts.

Creating employment is often a key goal of policymakers. Training programmes for microenterprises tend to increase the employment prospects only for the entrepreneur and do not generate new jobs for others. More expensive consulting programmes for larger firms have had some positive impacts on employment, although these may take time to materialise **and may crowd out employment in competing firms**.

This review will be updated as new information becomes available. Our hope is that by facilitating a dialogue between governments, practitioners and researchers, the reviews will generate new research that helps fill knowledge gaps.

I Introduction: The Benefits of Training and Consulting

There is a wide range of business and management practices that most firms benefit from adopting. For small firms, these include separating household and business accounts, keeping basic records, monitoring inventory, offering discounts and promotions to attract customers, and budgeting and planning. As firms grow, they also benefit from human resource practices that reward good employees and improve or remove less productive employees; processes for quality control and basic lean manufacturing; and practices to set and communicate production targets and monitor performance towards these targets. Systematic measurement of these types of practices across a range of countries and firm types documents that firms using better management practices are more productive and grow faster (Bloom and van Reenen 2010, McKenzie and Woodruff 2017).

Despite the potential benefits, many firms fail to adopt better business and management practices. Business training and consulting programmes are a popular approach to improving business practices. McKenzie (2021) notes that, although numbers are fragmentary and incomplete, at least US\$1 billion is spent annually training at least 4-to-5 million potential and existing entrepreneurs in developing countries. This raises the questions of whether this money is well spent, and whether the efficacy of these training programmes can be improved.

A review of early randomised evaluations of entrepreneurship training programmes found the evidence for their effectiveness to be underwhelming (McKenzie and Woodruff 2013). Most of these evaluations found that training leads to some improvement in business practices, but failed to find statistically significant effects on business profits or sales. While this was interpreted by some as showing that business training does not work, many of these studies used relatively small samples and therefore lacked the statistical power necessary to rule out sizable positive (or negative) impacts of training. Additional evaluations and a wave of experimentation with new approaches to training stimulated by this first review have produced a somewhat more positive picture. McKenzie (2021) uses a more formal meta-analysis and finds that traditional training programmes have a modest but significant effect on profits and sales of firms assigned to receive training. Given the costs of typical programmes, in many cases, firms earn enough within two years to recoup the full cost of training. We might still worry about the value of training programmes for at least three reasons. First, the effects McKenzie finds may be an upper bound on the effects of training programmes usually implemented as policy. Researchers often select the best providers and are careful to make sure that the intervention is implemented carefully, implying that small-scale experiments may not replicate in larger rollouts (Berge et al. 2012, Vivalt 2019). Second, with few exceptions (e.g. McKenzie and Puerto 2021), the returns estimated from evaluations are almost always private rather than social returns, as the experiments are not designed to measure spillovers to non-sample firms. **Third, Woodruff and Mahon (2025) compare the cost effectiveness of various interventions aimed at SMEs, and find that standard training programmes aimed at micro and small-scale enterprises do not fare well.** Nevertheless, the finding of positive private returns would be a first step to understanding which types of training programmes might provide positive social investments.

How should training be done to ensure it is effective and scalable? There is enormous heterogeneity in the types of entrepreneurs and firms, and different approaches are likely to be needed for different firm types. At one end, many microfinance organisations and governments interested in poverty alleviation aim to help poor people set up firms that can provide them with a basic livelihood, or help subsistence firm owners earn slightly more in their businesses. Next, there is a range of established small existing businesses that want to increase profits. A separate category are high-growth start-ups aiming to grow rapidly and potentially attract outside funding. Finally, there are small and medium enterprises that governments aim to help to improve productivity and increase employment. The right approach to building entrepreneurial skills is likely to differ across these different types of firms; even for a given firm type, there is considerable heterogeneity in the length and content of training programmes.

This VoxDevLit aims to summarise the growing evidence base for these different approaches. For each approach, it discusses what a typical programme aims to do, describes a prototypical study using this approach, and then aims to summarise what we know about the effectiveness of such an approach to entrepreneurial training, and where gaps remain. As a living document, we hope that over time these gaps will be filled as newer studies are completed and the evidence-base grows.

II Teaching Skills in Microenterprises

The vast majority of firms in developing countries are microenterprises, with the modal firm consisting of a self-employed individual with no paid workers. These microenterprises are an important source of income for many poor households. The most prevalent forms of business training aim to help potential entrepreneurs start firms, and to help those already running these firms earn more income. Traditional training programmes aim to do this by teaching a wide range of business practices. A second approach attempts to simplify training by teaching a few heuristics and rule-of-thumb. Alternatively, rather than attempting to teach firm owners how to carry out specific practices, it may be more effective to change their aspirations and mind-set. Personal initiative training has shown some promise in improving performance through creating a more proactive mind-set. Finally, training programmes may offer a mixture of skill-based and attitude-based content, as well as tailored content for targeted groups such as women and youth.

IIA Traditional Small-Business Training

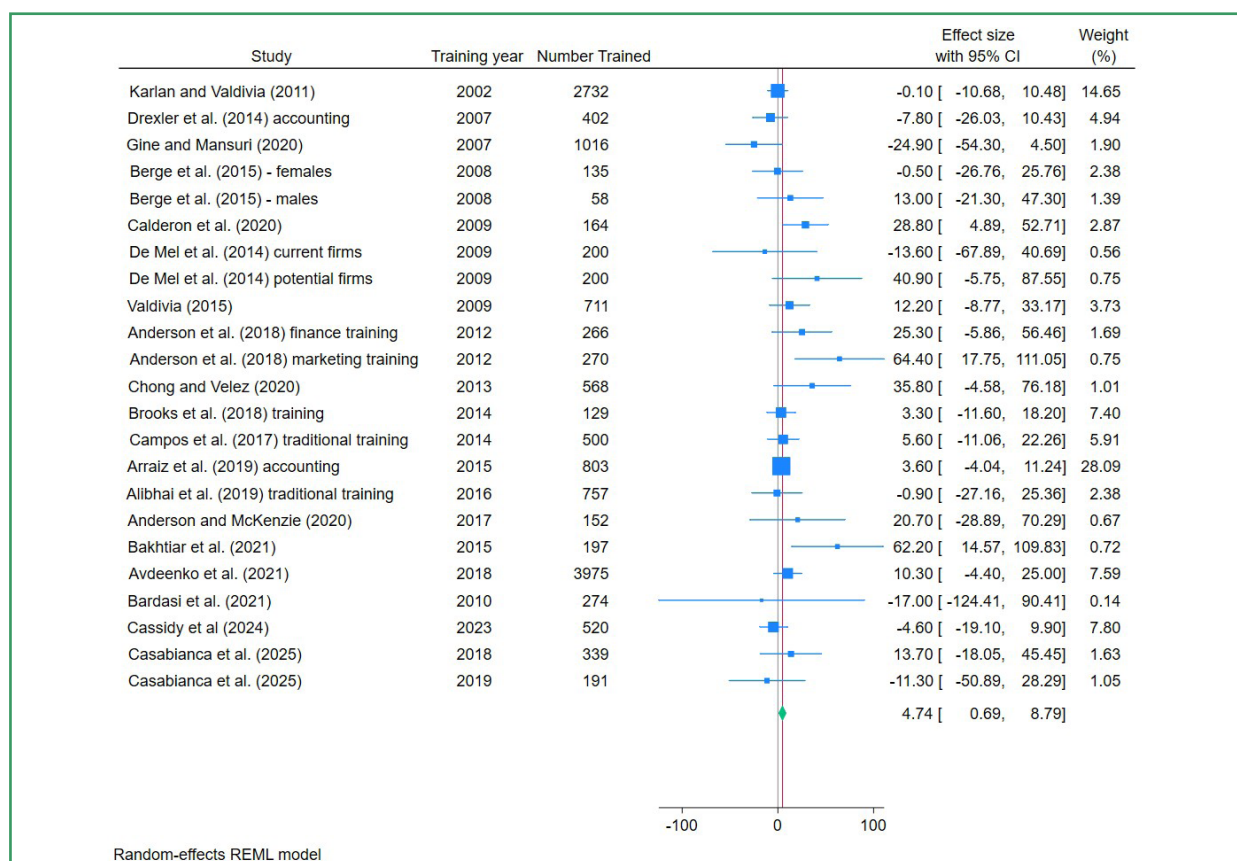
Classroom-based training in basic business practices is the most common approach to training small-scale entrepreneurs. The ILO's Start and Improve Your Business programme, and Freedom From Hunger's programmes for microfinance clients are examples of the best known and most widely implemented classroom-based training programmes. Although there is a wide variety of classroom business training programmes and approaches, a typical programme involves a trainer teaching a group of 15-40 participants over a period of 3-12 days. Courses for potential entrepreneurs looking to start a business focus on topics like generating a business idea, developing a business plan, permits, costing, pricing, and budgeting. Courses for owners of existing firms looking to grow cover record-keeping and accounting, marketing, human resources and hiring workers, stock control and inventory management, planning, and operations management.

Most of these training programmes reach scale by training a set of master trainers, who in turn train a network of trainers in different countries. The course materials are typically translated and adapted to local contexts. While courses are typically traditional teacher-led, classroom-based training, many also incorporate active learning. Participants take part in exercises or games to gain an understanding of key concepts, and complete assignments between training sessions that apply the content to their own businesses. Van Lieshout and Mehtha (2017) report costs for offering a 5-7 day SIYB course in 18 different countries. The costs range from US\$400 to US\$12,242 for a class of 20, with an average cost of US\$3,537, or US\$177 per participant. In many countries, and most randomised experiments, training is offered to firms for free or for a token cost – Van Lieshout and Mehtha (2017) report a median contribution by participants of 10% of the cost. This large variability in costs reflects differences in whether instructors are specialist trainers or NGO staff, whether venues need to be hired or classes can be held in schools or halls without charge, in transport costs for getting instructors to remote areas, and in the scale of training offered.

As the most prevalent form of business training, traditional classroom training has been subject to the largest number of evaluations. The first such randomised experiment was undertaken by Karlan and Valdivia (2011), who evaluated the impact of training offered to clients of a microfinance institution in Peru. A large sample of over 4,500 borrowers were randomly allocated at the village bank level to a control group, or to a treatment group that received up to 22 weekly training sessions of 30-60 minutes each. The results are also typical of much of the early literature: the authors find significant improvements in some measures of business practices and business knowledge, but no significant impact on business revenue (and they do not measure business profits).

Many of the subsequent studies have also tested variants of traditional training. Figures 1 and 2 summarise the effects on sales and profits, respectively, from these different studies. When considered separately, we see that the confidence intervals of the impact of training in many of these studies are large and include zero. McKenzie (2021) estimates a random effects meta-analysis, and found that the training has a significant positive average effect on both profits and sales, with an estimated 4.7% improvement in sales and 10.1% improvement in profits. **Successive versions of this VoxDevLit have updated these figures to include new studies released since 2021. The current meta-analysis estimates an average improvement of 4.7% in sales and 10.7% in profits. This is a slight reduction from the estimates in the previous VoxDevLit, of 5.6% and 12.1%, respectively, which is attributable to the inclusion of Bardasi et al. (2021), Cassidy et al. (2024), and Casabianca et al. (2025).** McKenzie argues that improvements of this magnitude are in line with what is reasonable to expect given what we know about the returns to other forms of education and the return to capital, but that most studies do not have sufficient statistical power to detect effects of these magnitudes. Note that for a firm earning US\$100 a month, a 10% increase in profits would therefore enable the typical cost of US\$177 of a training course to be recouped within 18 months.

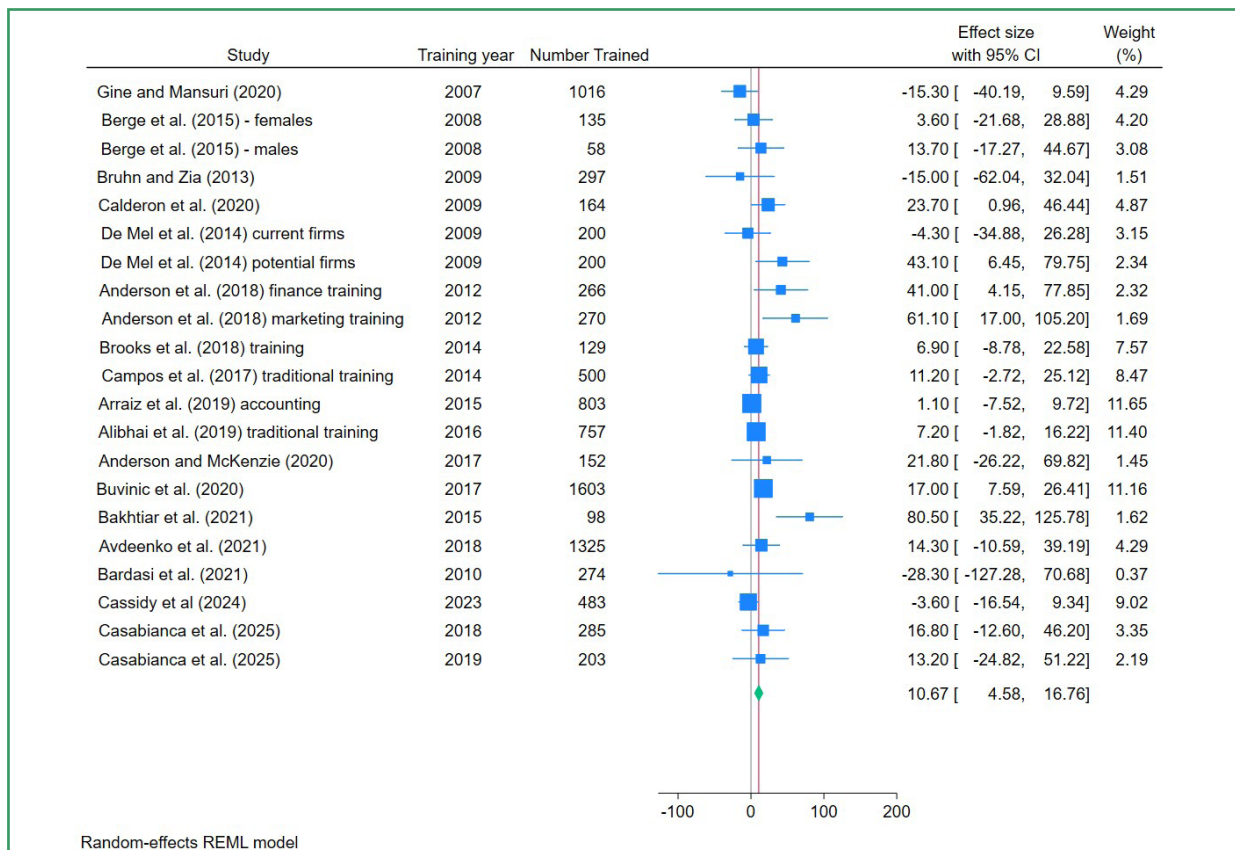
Figure 1 Estimates of the impact of business training on firm sales



Source: Original version McKenzie (2021), updated to include new studies

Why doesn't traditional training have a larger effect? McKenzie and Woodruff (2013, 2017) show that the modest effects on sales and profits are reflected in the fact that enterprise owners implement very few additional best practices after participating in training sessions. A typical SIYB training programme may attempt to teach owners 20 or 30 business practices; however, on average, participants end up improving only one or two of these practices. In part, this reflects the short nature of the courses, but it may also reflect the quality of the training programme and the selection of participants for the course. Training programmes that are more intensive, and those with screening that results in more selective entry into the programme, have shown both larger effects on business practices (e.g. Anderson et al. 2018) and larger effects of the training on enterprise performance.

Figure 2 Estimates of the impact of business training on firm profits



Source: Original version McKenzie (2021), updated to include new studies

Further work is needed to both measure the quality of training delivery, and to test different approaches to improving the effectiveness of this delivery. It seems likely that the quality of the trainers matters a lot, but there has been little research into how to best select and train trainers. Casabianca et al. (2025) test one approach to scaling: they find an NGO that had implemented a training programme in Uganda was able to train staff in local NGOs to deliver the same programme and achieve comparable improvements in business outcomes at 55% of the cost.

IIB Heuristics and Rule-of-Thumb

Standard training programmes teach a broad range of practices in a short period of time. They may provide more information than subsistence enterprises can or care to absorb. An alternative is to provide simpler training that focuses on heuristic guidelines or rule-of-thumb. For example, rather than trying to teach detailed accounting practices and how to calculate firm profits, rule-of-thumb training focuses on keeping household and business finances by giving a physical rule to keep money in two separate drawers, and only transfer money from one to the other with an explicit “IOU” note between the business and the household.

Drexler et al. (2014) evaluate such a training programme in an experiment with 1,193 microenterprises in the Dominican Republic. They find that the heuristic training worked better than more standard accounting training for lower-educated firm owners, but were unable to reject equality of impacts of the two types of training for the full sample (mean effect +4.9%, 95% C.I.: -14.6, +24.4). Statistical power is reduced because sales data is missing for almost half the sample. Somewhat stronger evidence comes from Arráiz et al. (2019), who evaluated a 4-hour rule-of-thumb training for finance amongst 2,408 microenterprises in Ecuador, comparing it with an accounting and finance training programme. Follow-up a year later shows that the heuristic-based approach increased daily profits by 8.1% (95% C.I.: +0.7, +16.0), and daily sales by a similar amount. The rule-of-thumb training was particularly effective for women and those with lower

cognitive scores. However, [subsequent studies suggest more limited effects](#). Cole et al. (2019) find limited impacts of sending rule-of-thumb voice messages to small firms in India and the Philippines. [Abebe et al. \(2023\)](#) use an interactive voice platform to send heuristic-based training on financing to women entrepreneurs in Ethiopia. They find changes in financial business practices, but no significant changes in business outcomes. Batista et al. (2022) find that a 4-hour rule-of-thumb based training for entrepreneurs in Mozambique has positive, but statistically insignificant impacts at 1 and 5 years, whereas combining it with access to mobile savings accounts results in larger impacts.

Table 1 Impacts of rule-of-thumb training

Study	Country	Training Year	Sample Size	N Training	Follow-up length	Point estimate	95% C.I.
<i>Impact on Sales</i>							
Drexler et al. (2014)	Dominican Republic	2007	1,193	404	12 months	4.9	(-14.6, 24.4)
Arraiz et al. (2019)	Ecuador	2015	2,408	801	12 months	7.4	(1.0,14.1)
Cole et al. (2019)	Philippines	2016	2,096	1,066	3 months	-6.8	(-17.3, 3.6)
Cole et al. (2019)	India	2016	3,849	1,924	3 months	6.1	(-1.7,14.0)
Grohmann et al. (2021)	Uganda	2017	500	166	6 months	-3.7	(-34.8,27.5)
Abebe and Hailemichael (2023)	Ethiopia	2021	6000	3000	8 months	-0.3	(-8.5, 7.9)
<i>Impact on Profits</i>							
Drexler et al. (2014)	Dominican Republic	2007	1,193	404	12 months	n.a.	n.a.
Arraiz et al. (2019)	Ecuador	2015	2,408	801	12 months	8.1	(0.7, 16.0)
Cole et al. (2019)	Philippines	2016	2,096	1,066	3 months	-4.1	(-13.5,5.3)
Cole et al. (2019)	India	2016	3,849	1,924	3 months	-0.2	(-6.8,6.4)
Grohmann et al. (2021)	Uganda	2017	500	166	6 months	23.5	(-11.8, 58.9)
Abebe and Hailemichael (2023)	Ethiopia	2021	6000	3000	8 months	4.3	(-6.5, 15.1)

Note: Batista et al. (2022) not shown since the control mean of profits in their study is negative, making calculation of percent growth on the control mean problematic.

The idea of providing simplified rules that business owners can use offers an appeal for helping the smallest businesses and least-educated entrepreneurs to run their subsistence enterprises slightly better. However, it is unclear from existing studies whether these approaches have long-lasting effects, or whether firms stop using heuristics over time (existing studies only follow firms for a year at most). Moreover, to date, there are limited examples of the types of rule-of-thumb that can be used, largely limited to financing, and it is less clear whether there are relevant heuristics for marketing, stock control, and other important areas of the business.

IIC Teaching an Entrepreneurial Mind-Set

Classroom training programmes typically focus on improving technical business skills in record-keeping, marketing, etc. An alternative approach instead targets attitudes, particularly mind-set and aspirations. Borrowing heavily from psychology, personal initiative training programmes have been the subject of several evaluations in recent years, showing some promise. Personal initiative training aims to develop a proactive entrepreneurial mind-set, encouraging owners to search continuously for new opportunities, learn from errors, and think of ways to differentiate their business from others. For example, a training exercise involves entrepreneurs thinking through their previous business day, and asking what they can do so that tomorrow is an improvement over yesterday.

Campos et al. (2017) carried out an experiment with 1,500 microenterprise owners in Togo, testing the impact of personal initiative training compared to both a control group, and to a group that received the Business Edge programme, a traditional small business training approach. Both groups received 36 hours of classroom training, followed by a trainer visiting each business for one three-hour visit per month for each of the next four months. Personal initiative training is found to improve business profits by 30% over the next two and a half years, which is significantly higher than the 11% increase from traditional training. The result is that the US\$750 cost-per-participant of training is recouped with increased profits in less than one year. Campos et al. (2025) track firms in this experiment up to 7.5 years after training to measure whether these impacts persist. They find an average impact on profits of 52% from personal initiative training after this period, but that the results differ significantly by gender over this longer period. Men in their study see their profits continue to grow, to the point where they are \$148 more per month (77%) higher than the control group, whereas impacts for women are smaller than those for men (\$39 per month) and not statistically significant. They cannot completely explain these gender differences, but speculate that they in part reflect more limited scope for growth in the sectors women tend to operate in.

While there is a lot of interest from different organisations in trying these psychological approaches, there are still many open questions about how to best implement this form of training. Efforts to follow up on the Campos et al. (2017) Togo study found less promising results in Ethiopia (Alibhai et al. 2019) and Jamaica (Ubfal et al. 2019), but quite strong results in Liberia from an interpersonal skills programme (Dammert and Nansamba 2019). Figures 3 and 4 summarise the results, and provide a meta-analysis of this emerging set of studies. The average impacts on profits and sales are 14% and 10% improvements, respectively, but we see considerable heterogeneity in the impacts across different studies.

One potential explanation for the heterogeneity in results lies in the quality of the trainers and intensity of treatment. A second issue that needs further research is the role of follow-up one-on-one visits after training, a feature of the Togo intervention. It is also unclear what the upper limit on firm size or baseline entrepreneurial attitudes should be for participants in these programmes – such training may be less effective for entrepreneurs who already have strong aspirations and who are proactive to begin with. Finally, some programmes combine modules on traditional training topics with modules on personal initiative, with mixed results. Ubfal et al. (2019) find lower point estimates for the combined treatment compared with personal initiative training alone, but Frese (2024) reports preliminary results from an experiment with farmers in Mozambique, where adding personal initiative on top of agricultural training increased agri-business activities and business profits for farmers compared to just the agricultural training alone.

Figure 3 Estimates of the impact of psychological training on firm profits

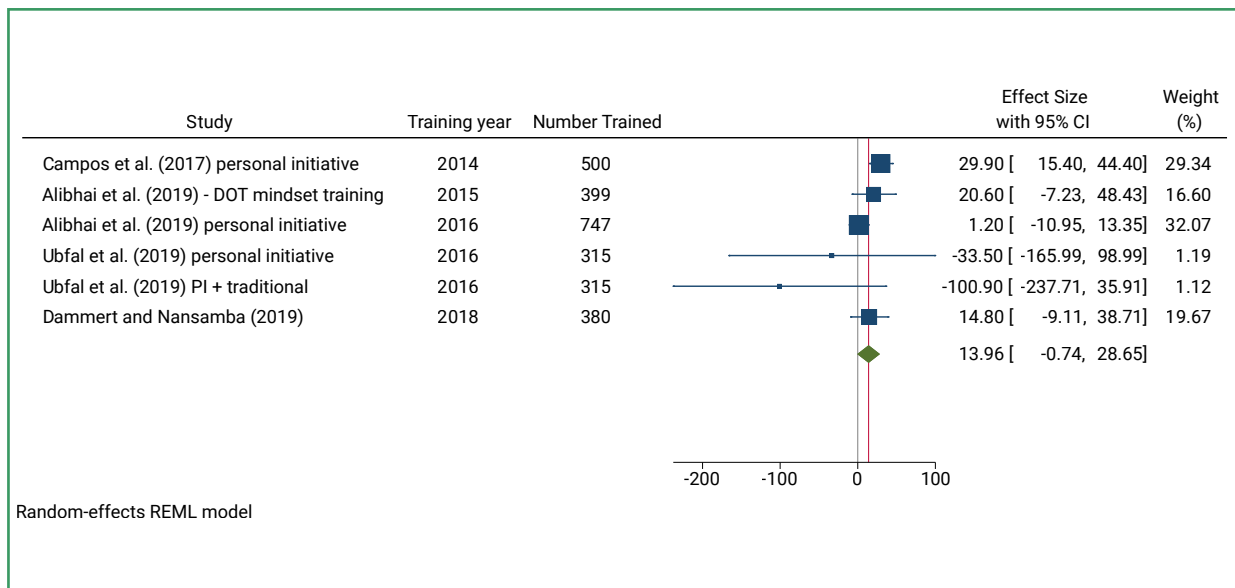
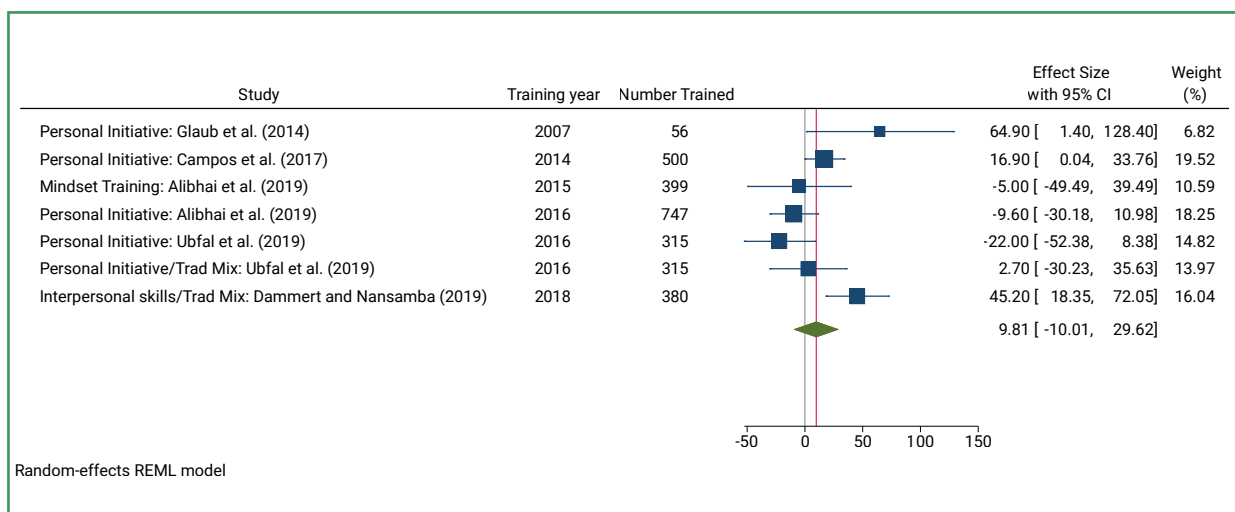


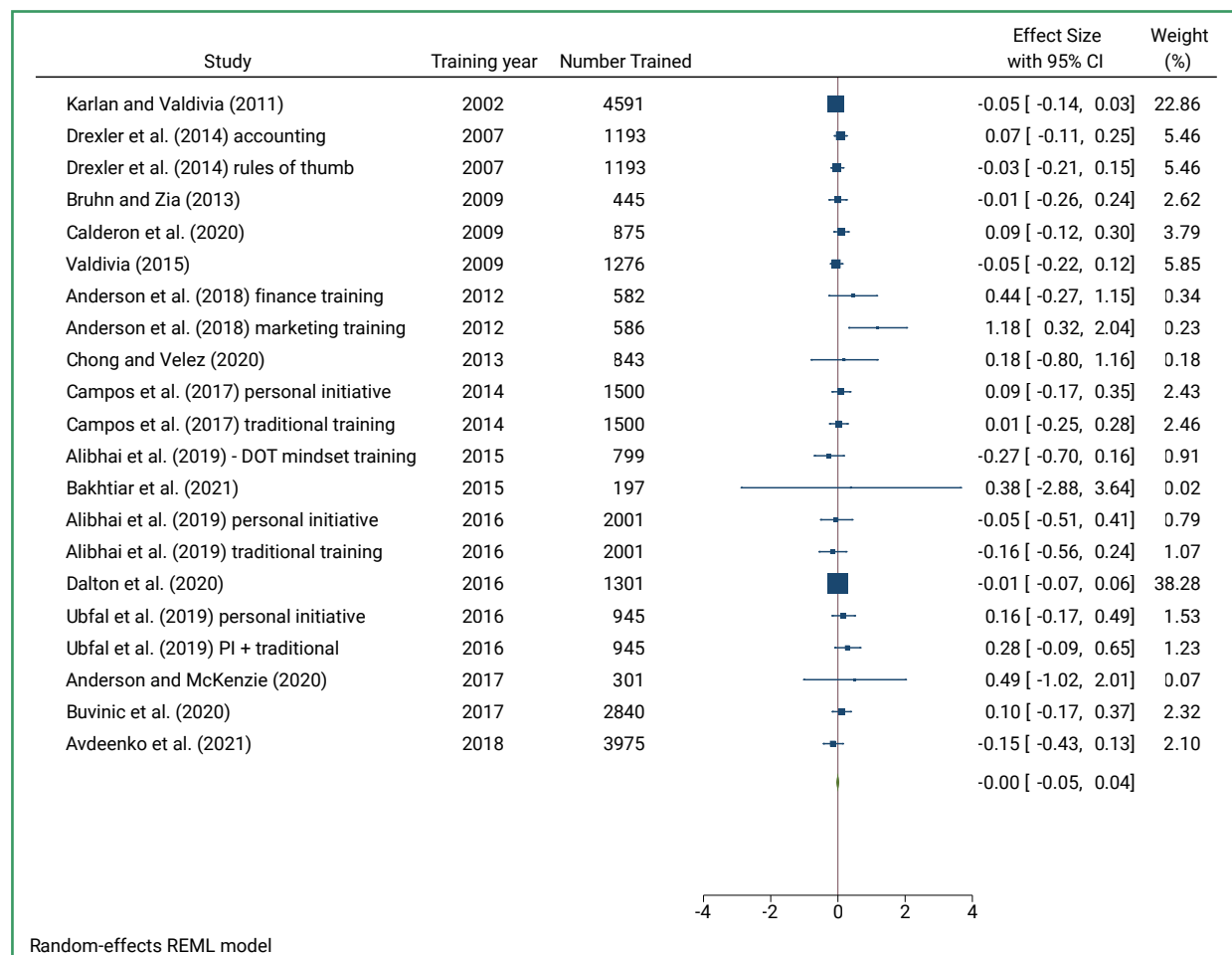
Figure 4 Estimates of the impact of psychological training on firm sales



IID Training Impacts on Employment

Employment is an important concern for most policymakers, and government subsidies for training are sometimes in part motivated by the belief that it will not only help the person being trained, but also help create jobs for others. However, the typical microenterprise taking part in business training has at most one additional worker apart from the owner. We have seen that firm profits increase by a modest amount of around 10-12%, which equates to only \$5-10 a month for a firm earning \$50-100 a month in profits. We should therefore not expect the gain in profits to support the firm taking on another employee. To examine this, we have collected the employment impacts of both traditional and alternative approaches to business training in Figure 5, and run a meta-analysis of the average effect. We see that the treatment impacts are almost always small in magnitude, and statistically insignificant, and the meta-analysis average effect is a very precise 0, with a 95% confidence interval of (-0.05, +0.04) workers.

Figure 5 Estimates of the impact of business training on employment



Note: Effect sizes are expressed in terms of jobs created per firm assigned to training.

The main employment impacts of business training for microenterprises are instead likely to be on employment for the firm owner, who may be more likely to start a new business, and to have that business to survive after taking part in training (McKenzie and Woodruff 2013). But training microenterprises does not seem to create more jobs for others, at least over the 1-2 year time horizons of most evaluations. Even over longer durations, there appears to be plenty of scope for many microenterprises to grow profits without needing to hire more labour. For example, Campos et al. (2025) find no growth in employment over 7.5 years, despite profits growing 52%. Instead, entrepreneurs have built up capital. This lack of employment impact can also reflect that many microenterprises are underutilising their existing labour and capital inputs (Walker et al. 2024), so that they have scope to grow without needing to hire more workers.

IIE Training for Women and Youth Specifically

The different training approaches discussed above are designed to apply to a wide variety of microenterprises. However, specific groups of entrepreneurs may face additional constraints, or need additional tailored content.

Programmes for Female Entrepreneurs

Training programmes designed specifically for female entrepreneurs may aim to also help them overcome additional gender barriers to firm growth, by helping them enter into different sectors, or by teaching them how to better manage segregating household and business tasks, overcoming stereotypes, and working with other women. An example of such a programme is the ILO’s Gender and Enterprise Together

(GET Ahead) programme, which combines standard topics like recordkeeping, separating business and household finances, costing and pricing, etc., with topics on gender. This programme has been evaluated in two randomised experiments in Vietnam (Bulte et al. 2016) and Kenya (McKenzie and Puerto 2021). While the programme improved business practices in both cases, only the Kenya study found significant improvements in profits and sales after three years (Table 2). Using a market-level randomisation, McKenzie and Puerto (2021) show that this growth does not appear to have just come from taking away sales from untrained women, but rather, the trained women introduced new products and total market sales grew.

Table 2 Impacts of female-specific training

Study	Country	Training Year	Sample Size	N Training	Follow-up length	Point estimate	95% C.I.
<i>Impact on Sales</i>							
Bulte et al. (2016)	Vietnam	2012	4,041	670	1 year	-108.7	(-318.8, 101.4)
McKenzie and Puerto (2021)	Kenya	2013	3,537	1,172	3 years	18	(6.1, 29.9)
<i>Impact on Profits</i>							
Bulte et al. (2016)	Vietnam	2012	4,041	670	1 year	128.1	(-18.4, 274.7)
McKenzie and Puerto (2021)	Kenya	2013	3,537	1,172	3 years	15.4	(3.4, 27.3)

However, it is unclear how much the extra gender content helped, compared to just the traditional business skills being taught. McKenzie and Puerto (2021) report that they do not see significant impacts on gender attitudes, self-efficacy, or working together with other women, and associated qualitative work does not find women reporting the gender component as especially useful. It would be useful in future work to compare the effects of a programme like GET Ahead to a standard business training programme like SIYB.

Programmes for youth

Youth are another common target group for business training programmes, **with an emphasis on new business generation as a source of youth employment and earnings**. There are at least three variants of youth business training programmes offered. The first consists of training for out-of-school youth, with the goal of getting them to start businesses or expand existing businesses. In a number of cases, this training is coupled with other forms of assistance such as small grants, making it sometimes hard to assess the impact of training alone. Calderone et al. (2022) provide an example in Tanzania, where rural youth aged 23 on average were given three months of twice a week classroom training on soft skills and business idea and business plan generation, followed by nine months of aftercare. The programme, called STRYDE 2.0, has been implemented at significant scale, reaching over 53,000 youth in four African countries. After two years they find a 2.4 percentage point increase in the likelihood of employment and no significant impact on earnings for the full population, with impacts larger for women: the training cost \$418 per head, and their estimates of earnings increases for those who took up training are \$3 a month for the pooled sample, or \$26 per month for women alone. Brudevold-Newman et al. (2024) compare the impact of a microfranchising programme targeting female youth in urban Kenya with a cash grant programme and pure control. The microfranchising programme bundles training on both technical and business skills with an in-kind grant of the assets needed to establish the business and post-entry mentoring. They find that the microfranchising training increases self-employment rates by about 10 percentage points, an effect sustained for the six years of post-intervention data. But while income increases in the short run relative to the pure control group, the income effect is not sustained after six years.

A second case consists of entrepreneurship education taught in secondary schools, such as the Educate! programme. These programmes typically consist of a combination of soft skills training and business concepts. A challenge in measuring the impact of these programmes is that the impacts may not be seen for several years, until youth have finished school. For example, Chioda et al. (2023) evaluate the Educate! programme that is taught to students in the final two years of secondary school in Uganda and which has an emphasis on entrepreneurship. They conduct a follow-up survey four years later and find that 36% of the sample are still enrolled in tertiary education, leading them to conclude that even four years is too soon to examine labour market outcomes. Chioda et al. (2025) conducted an experiment with 4,400 youth in their final year of secondary school in Uganda (average age 20), and gave them a different three week intensive course that combined hard skills (teaching business practices) and soft skills. They find that four years later the youth are 6 percentage points more likely to be self-employed, and have 30% higher earnings from all labour market activities, with this increase largely driven by more self-employment income. However, half the sample is still in school four years afterwards. They follow the youth further with a nine year follow-up, and find no difference in business ownership rates between treatment and control after this longer period, but that the businesses operated by trained youth are using better business practices and earn 16% higher profits. Berge et al. (2022) conduct an experiment with final year secondary school students in 80 schools in Tanzania, offering economic empowerment and entrepreneurship training that runs for 1.5-2 hours per week for eight weeks. Three to four years later, they find 29% of the control group to be self-employed, compared to 38% of the treatment group, and total work income is about 80% higher relative to a low base of around \$11 per month in the control group. Bruhn et al. (2022) examine the long-run effects of a financial education programme for public high school students in Brazil that was piloted in an experiment with 892 schools. The programme included modules on work and entrepreneurship, equivalent to 14-28 hours of material integrated into the regular school curriculum during one semester. Nine years later, treatment students were 10% more likely to own a formal microenterprise, compared to 6.9% of control students owning such enterprises, and were less likely to hold a formal job instead.

Entrepreneurship programmes may also be offered in universities. An example is an experiment in Tunisia which taught entrepreneurial skills during the last year of university. While the study found positive impacts on starting new firms after one year, these effects disappeared over a four-year horizon (Alaref et al. 2020). Frese et al. (2016) report promising impacts after one year on starting new firms for a psychology-based training programme called STEP implemented in universities in four African countries. This programme consists of 12 weekly 3-hour action-oriented sessions, and students are required to identify a real business opportunity, start a microbusiness at the start of the course, apply the lessons to it each week, and manage it until the end of the programme. Peschmann et al. (2025) pool results from this action-oriented STEP training across 6,257 students in 7 countries (Kenya, Liberia, Rwanda, South Africa, Tanzania, Uganda, and Mexico), measuring impacts right after training, at 18 months, and at 2 years. They find the programme increases both self-employment (by 22%, or approximately 9 percentage points on a control mean of around 40%), and wage employment. Profits are initially lower in the treated firms (but this might reflect selection into who operates a firm), but then catch up to the control group for no long-term effect. Total income from both self-employment and wages is 10% higher after two years.

Comparing and synthesising impacts from youth business training programmes is difficult for several reasons. The goal of these programmes is often employment, and so one of the main impacts is on whether youth start a firm. But it is not always clear that self-employment is the most desirable employment option, particularly since the business failure rate tends to be highest for youth (McKenzie and Paffhausen 2019). In the longer-run, youth may also be better off investing in schooling rather than starting a business, so examining employment over the longer term is important. Second, because the control group often starts very few firms, measuring the impacts on profitability or sales is difficult because control group means can be low. Looking at total income from all income-earning activities, including wage work, is likely to be a better measure for comparability. Third, since youth often cycle in and out of different labour market activities frequently, while others stay in school and start employment later, judging success of these programmes may require a longer time frame than for programmes that work with established businesses.

III Medium- and Large-Scale Enterprises and High-Growth Start-Ups

Training programmes aimed at microenterprises yield, on average, modest increases in profits and sales. However, there is no evidence that training unlocks rapid and sustained growth of microenterprises. Training appears to be a means of increasing incomes of microenterprises, but not of generating the sort of growth that will propel the aggregate economy. What is the evidence that training and consulting is effective when applied to larger-scale enterprises? The existing evidence for larger firms is much more limited, at least in part because larger firms are fewer in number and training programmes need to be more intense and therefore more expensive. We divide the review into evidence on sector-based programmes designed around the Kaizen model, business consulting, and programmes like incubators and accelerators designed for high-growth start-ups.

IIIA Kaizen

An alternative form of training focuses on production and quality management. There are several randomised evaluations of programmes based on the Japanese-inspired concept of lean production, or *kaizen* (continuous improvement), delivered to firms organised in industry clusters. This includes visual control examining workflow and bottlenecks, and habit-forming techniques such as 5S, which induce workers to reduce waste, ensure safety first, maintain machinery and equipment, keep the workspace clean and uncluttered, and find remaining problems and suggest solutions. The first experiment to test this approach is Mano et al. (2012), who added a module on this approach to two modules based on the ILO's standard programme (SIYB). Working with 167 small metalwork firms in Ghana, they find that training increases one-year survival by 8 to 9 percentage points, but effects on profits and sales are imprecisely measured (Table 3).

Table 3 Impacts of *kaizen*

Study	Country	Training Year	Sample Size	N Training	Follow-up length	Point estimate	95% C.I.
<i>Impact on Sales</i>							
Mano et al. (2012)	Ghana	2007	167	60	1 year	37.3	(-50.4,125)
Higuchi et al. (2019)	Tanzania	2010	113	26	3 years	90.2	(33, 148)
<i>Impact on Profits</i>							
Mano et al. (2012)	Ghana	2007	167	60	1 year	24.9	(-66,115)

The *kaizen* approach has also been evaluated with experiments amongst 316 steel construction and knitwear firms in Vietnam (Higuchi et al. 2015), and 113 garment firms in Tanzania (Higuchi et al. 2019). In both cases, the researchers split the samples into four groups, comparing classroom training only with training on-site, or a combination of the two. The number of firms getting any particular training combination is small – approximately 30 in the Tanzania example. Neither study estimates impacts on profits, but they both show that firms adopt more management practices, and that value-added improves after some time. A longer-term follow-up of the Vietnam sample by Higuchi et al. (2017) finds firms assigned to training were 17 percentage points more likely to still be in business five years after training. [Higuchi et al. \(2023\)](#) find this gap has closed after 10 years, with no significant impacts on management, survival, or revenue over this period (although their 10-year follow-up coincides with the time of the COVID-19 pandemic). The Tanzania study also finds large increases in sales – 90% higher after three years for the group getting both classroom and on-site training (95% C.I.: +33, +148). None of the *kaizen* studies report impacts on firm employment.

While these results suggest potential in this *kaizen* approach, studies on much larger sample sizes are needed to feel more confident in the effectiveness. Moreover, it would be good to benchmark *kaizen* against a standard training programme, to measure how much additional benefit the *kaizen* content provides.

IIIB Other Specialised Training for SMEs

Apart from this *kaizen* approach, classroom-based training has seldom been used with small and medium enterprises, except for programmes that aim to train their workers. But other types of specialised training may also have a role in helping SMEs. A first example is MBA-style training for executives. Custódio et al. (2020) test this idea by providing executive education in finance to managers of 93 medium and large firms in Mozambique and find this decreases the amount of working capital held and increases the return on assets. A second example is providing training specifically focused on expanding demand through accessing specialised customers such as governments or overseas buyers. Hjort et al. (2020) provides an example, conducting an experiment with 1,192 firms of average size 14 employees in Liberia, inviting them to a seven-day training on how to bid for large procurement contracts. Take-up is low, with only 20% of firms attending, but they find trained firms win more contracts, with a large, but not statistically significant, impact on revenues from contracts.

IIIC Consulting

Business consulting offers a more customised, intensive, and individually tailored approach. A typical consulting intervention begins with a diagnostic that evaluates existing management practices across a range of functional areas such as production, logistics, human resources, and finance, and identifies a set of priority areas for improvement. A consultant or team of consultants then works directly with management and workers of the firm to implement improvements in the firm in a sustained and intensive interaction that can often last for six months or more. Governments supporting the use of consultants often are most interested in the impacts of these programmes on the productivity of firms and on employment, rather than just sales and profitability.

The cost of consulting programmes can vary dramatically depending on the number and type of consultants used, and their intensity. A single local consultant working one-on-one with a small firm for 88 hours costs US\$ 4,000 in Nigeria (Anderson and McKenzie 2020) and US\$ 12,000 for 200 hours in Mexico (Bruhn et al. 2018). In contrast, a team of local consultants cost US\$ 30,000 per firm for 500 hours of consulting in Colombia (Iacovone et al. 2022) and a team of international consultants had a market price of up to US\$ 250,000 per firm for 780 hours of working with large firms in India (Bloom et al. 2013). While these numbers are much larger than the cost of training smaller firms, since the firms receiving consulting are much larger and profitable to begin with, a 5% or 10% improvement in profits may still be enough for consulting to pay for itself.

Large Firm Consulting

A proof of concept that intensive individual consulting can deliver improvements in large firms was shown in an experiment by Bloom et al. (2013) with large textile factories in Mumbai, India. These firms had an average of 270 employees, US\$ 7.5 million in sales, and often had more than one plant. A sample of 17 firms (with 28 plants) was split into a treatment group of 11 and a control group of 6. The control firms received a one-month diagnostic, which was deemed necessary both to retain their interest and to ensure the quality and comparability of the information reported. The treated firms received an additional four months of consulting services aimed at improving management practices. Using high-frequency data on output and quality defects, Bloom et al. (2013) show that the intensive consulting intervention significantly increases output per worker and TFP, and significantly reduces inventory levels and the quality defect rate.

The intervention also led to improvements in management practices. They estimate that the changes resulted in an increase in profits of US\$ 325,000 per year per firm, implying that the cost of the consulting, which they estimate as US\$ 250,000, is recouped in less than a year. Why did managers not adopt the practices on their own? There are both proximate and deeper answers to this question. Using data that the consultants obtained from managers, Bloom et al. (2013) show that the proximate reasons are either that the managers were unaware of the practice (most often for 'uncommon' practices), or that they did not think that adopting the practices would be profitable (most often for 'common' practices). Bloom et al. (2020) returned 8-9 years after the consulting to see whether the improvements persist, finding that there is a lasting impact on firm practices and a proxy for productivity, but that firms stop using some of the management practices over time, particularly when key managers leave.

Scaling up such an approach is difficult given the expense. Iacovone et al. (2022) test whether consulting can be effective when delivered at a cheaper cost, in an experiment with 159 auto-parts firms in Colombia. They test an individual consulting intervention that is similar to the Indian case, but using local consultants and costing US\$ 30,000; and a group-based approach that has a consultant work with groups of 3-8 firms, at a cost of US\$ 10,000 per firm. They find that the group-based approach leads to the same improvement in measured management practices as the more expensive individual option, and that it results in increases in employment (6-15 workers), sales (28-33%), and profitability (5-26%) over the subsequent three years. Labour productivity increases by 11-14 percentage points, although this impact is not statistically significant. *In forthcoming work, the authors use administrative data to track impacts 8-10 years after the start of consulting. They find the group consulting continues to have sustained impacts over this longer time frame, with treated firms more likely to survive, have more employees, have approximately 50% higher sales and profits, and be more likely to export. Impacts for the individual consulting are smaller in magnitude and less robust.*

Consulting to Expand Exports

In addition to expanding productivity, policymakers often have a strong interest in increasing the variety and amount of exports. There are two approaches consulting can use to try to achieve this aim. The indirect approach is to first focus on improving general management practices, with the aim that this improves productivity and makes firms better able to compete in international export markets. Iacovone et al. (2025) test such a programme in Colombia, and find that it appears to have actually reduced exports, with firms improving general management practices but not those specifically related to exporting, and in some cases being advised to focus more on domestic sales. The alternative is to provide firms with specific help in learning how to attract customers in overseas markets, meet quality standards for different markets, and overcome logistics constraints that can make it hard to sell in another market. Cusolito et al. (2023) show that a mixture of training and consulting for innovative firms in the Western Balkans was able to expand exports at the intensive margin, enabling those firms who were exporting to sell more by expanding their customer base, learning specific knowledge about how to sell in particular European markets, and getting the confidence to move forward with new ideas.

Consulting for Small Firms

While the above experiments took place in firms with many workers and several departments, consulting can also potentially offer benefits to smaller firms. A very common form of government support occurs through matching grant programmes, where the government subsidises firms to use consulting services, but requires firms to pay a fraction of the cost. Campos et al. (2014) note that more than US\$ 1.2 billion has been spent on World Bank matching grant projects; however, they have been difficult to evaluate.

Bruhn et al. (2018) conduct an experiment with 432 micro, small- and medium-sized firms taking part in a matching grant programme in Puebla, Mexico, with firms paying 10-30% (depending on size) of the US\$ 12,000 cost of consulting. Their firms are much smaller than those in the Bloom et al. study, with around

70% classified as “micro” and 22% “small”, and an average of 14 full-time employees. Treated firms received weekly four-hour sessions over a period of one year. The researchers find generally positive but somewhat fragile impacts on profitability and return on assets at the end of the year of consulting. More impressive results come from national Social Security system (IMSS) data for as long as five years after treatment. The IMSS data show that treated firms grew faster than control firms after the programme, leading to 57% higher employment after five years, or 5.7 extra employees per treated firm. However, the IMSS records are available for just over half (57%) of their sample, and are aggregated to total employment for the treatment and control groups. We therefore cannot tell whether the growth comes from a few firms or is spread more widely across the sample. This makes the cost-effectiveness somewhat difficult to assess.

Anderson and McKenzie (2020) evaluate the effects of a government programme that offered firms with two to 15 workers 88 hours of consulting time spread over six to nine months. They find that two years later, consulting had improved a wide range of business practices, and that there were positive, but imprecise, impacts on sales, profits and employment. Anderson et al. (2022) use university students as consultants to visit Mexican small firms in 13 sessions of about three hours each, with the goal of helping firms modernise by improving the appearance and marketing of the store, or by improving their internal financial and stock-keeping methods. They find treated firms improve sales by 15 to 19% over the next 18 months, but do not report impacts on profits or the cost of scaling such an approach.

Martínez et al. (2025) evaluate 1,098 female-owned SMEs in urban Peru, with an average size of three workers, comparing 24 hours of individualised consulting with group consulting for groups of 6-7 entrepreneurs. As in the case of large firms, both approaches substantially improve outcomes, raising sales by 32% and profits by 24%. Using a machine learning-based approach, they find substantial heterogeneity in treatment effects only for individual consulting, with stronger gains for larger firms at baseline with better initial business practices and networks. In turn, group consulting fosters peer learning – particularly when firms are similar in adoption levels – which helps compensate for the lower consultant time per participant. With average costs nearly half those of individual consulting (US\$686 vs. US\$1,285), group consulting offers a scalable, cost-effective option for smaller firms, and aligning firms with the modality best suited to their characteristics can further amplify the impact of both treatments.

Markets for Training and Consulting Services

Although Bloom et al. show that the returns to very intensive management consulting are reasonably high, the market for these services has been slow to develop. Many firms appear willing to pay something for training, but demand falls quickly with price and the willingness to pay of most firms is far short of the cost of providing these services (Maffioli et al. 2023).

There are multiple reasons why firms may be reluctant to pay for training or consulting, and why these markets do not work as well as they could. A first set of reasons relates to information frictions. Firms may not know what they do not know, and over-estimate how well-managed they are. For example, Iacovone et al. (2022) find that Colombian firms perceive their management practices to be much better than the reality. Bruhn and Piza (2022) find that giving Brazilian firms concise information about their current level of business practices and where they can obtain help leads to a 7 percentage point increase in the likelihood they use services from SEBRAE, a business service non-profit, in the next few months. Secondly, even if they know they need to improve, the market for consulting services may be opaque, and firms may find it hard to know which providers exist and how good their quality is. Anderson and McKenzie (2021) study the market for business service providers in Nigeria and find that most small firms do not even know of the existence of most of the providers in the market, and that providers largely rely on word-of-mouth for new customers, not doing a lot of advertising. However, giving firms information about the different providers in the market and an external signal of their quality from mystery shoppers was not enough by itself to get more firms to purchase these services.

A second reason then concerns beliefs and uncertainty about the expected returns to using these services, and relates to the issues of external validity and heterogeneity of impacts. Even if the average impact of training or consulting has been shown to be positive and pass a cost-benefit test, firms may be uncertain as to whether using these services will be profitable for their specific business. Indeed, in some cases they may not be. Karlan et al. (2015) found that in an experiment with small tailors in Ghana, taking up the advice of consultants actually lowered profits on average in the short-term, leading them to stop using the recommended practices and revert back to their prior scale of operations. Firms may then rely on recommendations from trusted friends, or require an initial subsidy to learn through experience. Anderson and McKenzie (2020) find that firms who received a subsidy to hire insourcing and outsourcing providers were subsequently more likely to go back to the market and spend their own money to hire more services. Atherton et al. (2002) and Ezell and Atkinson (2011) argue that public support for these services can then in fact be ‘market-making’, by helping SMEs understand the value of these services and building future demand. Future work is needed to understand what the optimal level of public subsidy is, and whether there is empirical support for this idea that subsidising services can expand overall market demand by demonstration to trusted peers.

However, a final point to note on this is that it may be hard for firms to know whether consulting (or training) has helped them, even after they have received these services. Firm profits and revenues are typically very volatile and driven by a large number of factors that the entrepreneur cannot observe. As we have noted, studies with hundreds of firms often struggle to detect whether the programme is effective, so thinking that an individual firm can simply observe whether consulting has helped it or not may be overly optimistic.

Consulting and Training in Fragile and Conflict-Affected States

The World Bank estimates that by 2030, two-thirds of the world’s extreme poor will live in fragile and conflict-affected states. The need to increase incomes for the poor and generate jobs in these environments has meant development agencies are increasingly looking for policies that can work in these environments. However, to date, almost all of the evaluations of training and consulting programmes have taken place in less fragile settings, raising questions as to whether they are applicable in settings where the supply of consultants and trainers may be much more limited, and firms facing considerable uncertainty about the continued viability of their businesses. Conducting research in these settings is difficult, and there is not yet a body of research to synthesise, but a couple of evaluations of consulting services do suggest firms receiving consulting are better able to survive and innovate in these settings. Pulido (2021) reports on an experiment with 190 SMEs in Venezuela, where half were given individualised consulting over nine months. They find the programme helped firms with ten or more workers to survive, but smaller firms had higher drop-out and no survival impact. McKenzie et al. (2017) conducted an experiment with 416 firms in Yemen in the run-up to the civil war, where treated firms received matching grants to purchase consulting services for accounting, marketing and training. They find, in the first year, treated firms are 30 percentage points more likely to innovate by introducing a new product, implement more marketing and accounting practices, and are more likely to report sales growth. However, longer term follow-up was not possible due to the outbreak of civil war.

IIID Incubators and Accelerators for High Growth Start-Ups

High-growth potential start-ups are of particular interest to many policymakers, because of their potential for innovation and rapid growth, and because of their relative scarcity in developing countries (Eslava et al. 2019). Most of these firms are young and have few workers, but they differ from micro and small firms in terms of the types of entrepreneurs running these firms, and in the technologies and industries. Entrepreneurs starting these types of firms are often highly educated and highly motivated. The result is that these entrepreneurs are less likely to need training on basic business skills or on cultivating an entrepreneurial mind-set, but instead need more specialised assistance with their business model, and

with positioning their firm to receive outside financing from investors. The most common intensive approach is to support firms through business accelerators and incubators. Accelerators often offer firms some seed capital, workspace and other non-monetary services (such as mentoring and opportunities to network), in addition to training. These programmes typically work with small cohorts of 10 or 20 firms at a time, and last three to six months on average, although participants often remain connected through alumni networks.

A typical accelerator programme starts with a rigorous selection of entrepreneurs into a cohort that receives training and mentoring from successful business owners either from within the country or remotely. Many accelerator programmes provide links to angel finance or provide grants to enterprises completing the training. The combination of selection and the provision of a bundle of services, **along with what is typically a small sample of firms assisted**, makes the effect of accelerators particularly difficult to measure. There are a limited number of studies that use a credible comparison sample.

The most credible evaluations of accelerators to date use characteristics of the selection processes in these programmes as a source of exogenous variation in participation. The first such exercise is by Gonzalez-Uribe and Leatherbee (2017), who use a regression discontinuity design (RDD) to explore the effects of StartUp Chile, an accelerator that offers participants cash, workspace, and the possibility of being selected into the “entrepreneurship school” where additional non-monetary services are provided. With 1000 ventures selected to participate in the programme from amongst 6000 applicants, the marginally selected applicants are reasonably similar to the marginally rejected applicants. All applicants also receive a quantitative score, which can be used as a control for differences in enterprise potential. They find that ventures selected to participate in the Startup Chile programme (compared to those not selected) are more likely to raise subsequent finance, survive, and have a web presence. However, the analysis shows that these effects are entirely driven by selection of higher-quality ventures into the programme. The basic accelerator programme – the office space and capital grant – has no additional effect on these outcomes.

There has been much less analysis of the specific components of accelerator programmes. One first attempt was made by Gonzalez-Uribe and Leatherbee, who assessed the impact of an “entrepreneurship school” that is offered to 20% of Startup Chile participants. The school is additional to the basic programme, provided monthly meetings with programme staff, peers, and industry experts; opportunities for networking; and advertisement on the programme’s web page. Exploiting the discontinuity in acceptance into the additional programme, they find that the schooling, bundled with cash and other basic services, significantly improves the performance of ventures, even after controlling for selection effects. Within five years, entrepreneurs receiving the additional training see a 21% (0.29 standard deviation) increase in the probability of securing additional financing, triple the amount of capital raised (from \$37K to \$112K; a 0.30-standard-deviation increase), and double the number of employees (from 0.9 employees to 1.8, a 0.34 standard deviation increase).

While the evidence in Gonzalez-Uribe and Leatherbee (2017) shows that the non-monetary services provided by accelerators can affect performance when bundled with cash grants, it raises the question of whether non-monetary services on their own can have meaningful impacts. Gonzalez-Uribe and Reyes (2021) tackle this question in the context of ValleE, a business accelerator in Colombia, that instead of providing cash to participants, offers standardised business training, customised business advice, and visibility. For identification, they exploit variance in the generosity of the randomly assigned panellists charged with selecting enterprises into the programme. A key advantage of the setting is the administrative revenue data from the Colombian business registry two years before application and three years after. They find that the provision of non-monetary services on their own significantly increases average annual revenue by 166% relative to rejected applicants. The average effect masks substantial heterogeneity: whereas firms with the highest growth potential at application exhibit remarkable growth, there is no evidence that the programme increases growth for the participants with the lowest potential. This result is consistent with the emphasis of these programmes on rigorous selection processes.

Gonzalez-Uribe et al. (2024) then explore what type of training and consulting advice accelerators should offer, by randomising 305 Colombian start-ups to receive either managerial training (focused around process efficiency and managerial practices), or entrepreneurial training (focused around introducing new products, processes, and pivoting). They find the average firm has higher sales growth from the managerial training, but the very top firms seem to benefit from entrepreneurial training. This points to the importance of customising support even within the selected sample of firms that make it into accelerators.

More work is needed to further unpack the components of incubator and accelerator programmes to identify the non-monetary services that have the highest impact and are most cost-effective and scalable. The evidence on this topic remains mostly informal, but points towards the importance of services different from standard business training. An exception is a recent work by Assenova (2020) distinguishing the effects of mentoring from other services provided to participants in an incubator in South Africa serving socially and educationally disadvantaged entrepreneurs from low-income backgrounds. For identification, she uses seven cohorts of randomly assigned participants to mentors of varying ability during incubation. The findings show that participants assigned to high-ability (versus low-ability) mentors had 3.2% higher revenue and 3.5% higher profits one year after incubation. This growth was highest for businesses whose entrepreneurs had less pre-entry knowledge and experience.

Cusolito et al. (2021) conducted a five-country randomised experiment in Croatia, Kosovo, Macedonia, Montenegro, and Serbia, to test the effectiveness of an investment-readiness programme with 346 firms. The components of the programme are similar to the more common accelerator programmes. The firms included in the Cusolito et al. programme had an average of six employees, and were in high-tech innovative industries such as cloud computing and app development. The treatment group received help developing their financial plans, product pitch, market strategy, and willingness to take equity financing, along with master classes, mentoring, and other assistance. Both groups then competed in a pitch competition, and were tracked for two years to measure impacts on receiving outside investments. Treated firms scored higher on their pitch. The programme's effects were strongest for firms that were smaller and less likely to otherwise get external financing: the programme had a statistically significant 15 percentage point increase in the likelihood of getting external financing for firms below the median size.

IV Alternative Approaches to Training

Business training programmes typically aim to deliver a fixed curriculum of content to a group of firms, usually in a classroom setting. This has advantages for scalability, but may limit how adaptive the content is to specific needs of individual businesses, and to changes occurring in the economy. Mentoring and peer interaction approaches have been developed to attempt to better share customised knowledge amongst firms. A second issue is that delivering training to groups in classrooms is still costly, and may not be convenient for many entrepreneurs to attend. Moreover, the COVID-19 pandemic restricted gathering groups of firm owners together physically in one room, increasing attention on alternative delivery mechanisms for teaching training content. **More recently, the rise of AI has led to hopes of scalable, cost-effective, and individually tailored content being possible, although so far experience is limited.**

IVA Peer Interactions and Mentoring

Having firm owners learn from one another offers the promise of providing a way for sharing locally-relevant, better business and management practices, and may also offer other benefits for firms in terms of establishing new business relationships. This can involve the use of formal mentors, as well as programmes that match firms with other peers to facilitate interactions. Berelowitz et al. (2020) offers practical advice for implementing mentoring, although the evidence base underlying these recommendations is still limited.

In practice, mentors paired with individual firms to give customised advice and feedback can operate like a form of individualised consulting. Brooks et al. (2018), for example, conducted an experiment with 372 female-owned microenterprises in Kenya. In addition to a control group, a first treatment group is randomly allocated to receive classroom training, while a second treatment group is assigned to mentors. The mentors were selected from the more profitable business owners amongst their sample, and paid a nominal payment of US\$ 10. The mentor-mentee pairs were required/encouraged to meet weekly at the mentor's place of business four times over a month, though many pairs continued to meet for more than a year beyond the official treatment period. The study found a substantial short-term effect of mentoring, with profits of treated enterprises increasing by 20%, whereas the classroom training shows no significant effect. The effects, however, disappear about a year after the treatment begins. The mentor treatment appears to be effective while the mentor-mentee relationship is most active and disappears as the incentives provided to the mentors are removed. McKenzie and Puerto (2021) fail to find any positive effects of mentoring in a sample of female microenterprise owners who also received the ILO GET Ahead business training programme. They had more successful businesswomen meet over a five-month period both in small groups and one-on-one with participants after the in-class training. They estimate that the mentoring cost US\$ 553 per firm mentored, and find that it did not lead to any additional improvements relative to the training alone. Bakhtiar et al. (2022) have women who have received business training then act as mentors for other women in their networks, at a cost of around US\$ 500 per mentee firm. They find this does improve business practices in the mentee firms, but the treatment effect on profits is statistically insignificant, and small (US\$ 5 per month) relative to the cost. Taken together, this literature suggests mentors are not always of lasting benefit to subsistence firms.

Mentors may be more effective for more advanced firms looking to innovate or expand into new markets, where their local knowledge network may not be able to provide sufficient expertise. An example is provided by Anderson et al. (2024), who conduct an experiment with 930 small business owners in Uganda. The treatment group was linked to mentors around the world via biweekly Skype meetings for up to six months. The mentors were typically management professionals in advanced markets, who tailored the activities towards the specific context and challenges facing each firm. They find that firms assigned this remote mentor did not improve overall business practices, but were more likely to "pivot" their marketing strategy, for example, by shifting the production of sale of one product line to another. As a result, sales increased by 28% over two years. This growth was highest when the firms were linked to mentors from a marketing background, with monthly sales growing 52% and monthly profits 36% (Anderson et al. 2021). Germann et al. (2024) show that the female entrepreneurs in this study fared better when they were matched with female mentors, whereas male entrepreneurs did equally well when matched to either a male or female mentor.

Peer Interactions

Firms may also be able to improve their business and management practices through learning from each other. Cai and Szeidl (2018) illustrate the promise of such an approach by conducting an experiment with 2,820 firm owners in China. The firms are all SMEs, with an average of 36 employees, established within three years of the beginning of the experiment in 2013. 1,500 firm owners were randomly selected for treatment, which involved meeting monthly for 10 months with nine other firm owners. The groups were of four types: i) small size, same sector; ii) large size, same sector; iii) mixed size, same sector; and iv) mixed size, mixed sector. The relatively large sample size and segmentation allow for a nuanced analysis of peer effects. Cai and Szeidl found that sales of treatment firms increased by 8-10% relative to the control firms, with comparable increases in material inputs, employment, and assets. Why did the interactions lead to an increase in firm growth? Cai and Szeidl show evidence on several channels. First, there is evidence that firms shared information on trading partners, with the number of referrals to trading partners and the number of direct relationships between firms in the group both significantly higher with treatment. Second, at the end of the year, they showed that firms in the treatment group had significantly better management practice scores than those in the control group. Indeed, the improvement in management practices generated by the peer-interactions is comparable to that generated by the US\$ 250,000 consulting intervention carried out in India, discussed above. Third, firms randomised into groups with higher-quality peers (measured by baseline firm size) showed larger increases in sales, profits, and

management practices than those randomised into groups with weaker peers. Cai and Szeidl carried out an additional experiment by providing selected members of each group information about either an individual savings product or a business grant programme. The results of this additional experiment provide important lessons for scaling up the experiment. Specifically, information on the savings product flows through all of the groups and all of the group members. But information on the grants flows only when the members are not direct competitors.

Asiedu et al. (2023) test whether virtual networking with peers can also help firms. They conduct an experiment with 1,772 female growth-oriented entrepreneurs in Ghana, where treated firms are assigned into WhatsApp groups of eight members, and scheduled to meet virtually with another group member each week with the aim of expanding business networks. They find no significant impact on sales, but that treated firms are earning 21% higher profits after a year. Agarwal et al. (2025) formed virtual discussion groups of 4-6 microentrepreneurs in an experiment in Liberia. The groups had weekly facilitated discussions on business topics for six weeks. They find treated firms adopt more innovations and improve business practices in the next three months, with slightly negative and not statistically significant impacts on profits.

The quality of peers is likely to matter a lot for these interventions. Chatterji et al. (2019) carried out a bootcamp with 100 high-growth technology start-ups in India, where firms were randomised into pairs. They find that entrepreneurs who received advice from peers with a formal approach to managing people – instituting regular meetings, setting goals consistently, and providing frequent feedback to employees – grew 28% larger and were 10 percentage points less likely to fail than those who got advice from peers with an informal approach to managing people in the two years after the intervention. Asiedu et al. (2023) report impacts are higher when women are matched with more college-educated peers with better business practices and higher profits and sales.

Peer interactions therefore seem most effective when firms get matched with similar, but slightly better peers who are not close competitors. This raises a concern for the general effectiveness of such programmes, since by definition, every firm matched to a firm that is better managed also has a counterpart firm that is matched with a firm that is worse managed. Moreover, peer learning may not happen automatically, and training may be needed to help firms learn how to better communicate with one another. Dimitriadis and Koning (2022) conducted an experiment in Togo, in which entrepreneurs were given a two-hour communication training to help them better interact with peers, finding that this led to more information being exchanged and short-term performance gains.

Group-based networking interventions may also benefit from being bundled together with some group-consulting and financial assistance. Münch et al (2024) create consortia of firms in Tunisia that get both group-consulting and a group-level subsidy, and find that this helps the firms to increase export sales. However, since it is a package intervention, it is unclear how much is due to the networking, consulting, and financing components, and whether these components reinforce the effectiveness of each other.

Learning from other Firms without Peer Interactions

There are a lot of organisational logistics involved in deciding which firms should be linked to one another, and getting them to meet and exchange information. An alternative is to try to help firms learn from their peers without having to physically interact. Dalton et al. (2020) provide one approach, where they conducted qualitative interviews with local firms in Jakarta to understand which business practices are being used, misconceptions about different practices, and implementation norms. They then used this to put together a handbook of best practices, and a documentary in which successful peers explain how they have adopted practices and their growth trajectory. This was coupled with two half-hour visits from a trained enumerator to help in implementing the practices, with the result being that both business practices and firm profits improved over the next 18 months. A second, and even more basic, approach to helping firms learn from peers is to allow them to benchmark themselves against how others are doing. Seither (2019) finds that merely providing firms in Mozambique with data on how their sales compare to other firms in the same sector, leads low-performing firm owners to work more hours, and increase profits and sales over the next year.

IVB Alternative Delivery Methods

A range of technologies offer the potential to help business owners improve their business practices without having to go to in-person training. However, there is relatively little evidence on the effectiveness of these methods, and the available evidence suggests that the impacts of some forms of remote training have been quite limited.

Entrepreneurial Edutainment

Television shows such as *Dragons Den*, *Shark Tank*, and *The Profit* illustrate how the process of pitching a new product or improving a struggling business can be entertaining to millions. Can watching such shows also teach entrepreneurial skills or inspire entrepreneurial attitudes? Two ‘edutainment’ shows for entrepreneurship have recently been evaluated: *Ruka Juu* (“Jump Up”) in Tanzania (Bjorvatn et al. 2020) and *El Mashroua* (“The Project”) in Egypt (Barsoum et al. 2022). Both were reality show competitions, with weekly episodes over a span of 11-13 weeks, that followed the journeys of young entrepreneurs as they undertook challenges teaching and testing entrepreneurial skills. Key business concepts such as market assessments, planning, advertising, record-keeping, etc., were emphasised in each episode.

Randomised encouragement designs, in which a treatment group gets invited and reminded to watch the show, and a control group gets invited to watch something else or does not receive a reminder, have been used to measure the impacts. Bjorvatn et al. (2020) used this approach with a sample of 2,132 secondary school students, and Barsoum et al. (2022) with a sample of 5,924 Egyptian youth. The findings indicate that these edutainment shows do seem to make viewers slightly more interested in entrepreneurship, and seeing women succeed makes viewers think it is a little easier for women to go into self-employment than they had originally thought. However, neither study finds any impact on business knowledge, or on people taking actions towards starting businesses. It may be that these shows have effects on a minority of viewers that cannot be measured in standard impact evaluations. For example, if only 0.25% of the 4 million Egyptian viewers start a business as a result of watching, that would still amount to 10,000 new businesses created, but would need an experiment with almost 250,000 individuals to detect an impact.

SMS messages and Voice Messages

SMS messages have been used to send reminders and nudges to get people to save. They could potentially be used to disseminate simple business practices and business information, as well as to offer feedback based on automated rules. Several trials have shown limited impacts of this approach. Cole et al. (2019) tested sending weekly voice messages with rule-of-thumb in the Philippines and India, finding modest improvements in business practices but no significant changes in business performance. Acimovic et al. (2022) worked with mobile money agents in Tanzania, and experimented with sending daily personalised recommendations on inventory levels, finding no impact. [Mehmood \(2023\) tests an SMS-based business training course in Kenya, and finds short-term increases in knowledge and adoption of business practices that then fade out by 12 months, with insignificant impacts on sales and profits.](#) Like television, SMS can be a very cheap way of helping firms, and so the magnitude of changes needed for this approach to satisfy cost-benefit calculations may be much smaller than existing studies can detect, [but the benefits appear to be at best modest.](#)

[Impacts may be slightly stronger when targeted to specific actions at the right point in time for firm owners to make changes. Ronconi \(2025\) conducts an experiment with 14,500 online retailers in Brazil and Argentina, sending them messages reminding them that Black Friday is approaching and reminding them to plan their advertising and pricing strategies. He finds this increases sales 5.2% in the 60 days following the intervention.](#)

Online Training and Consulting

Both edutainment and SMS are limited in the amount of detail they can provide compared to standard classroom training. In contrast, developing fully online training modules offers the possibility of covering at least as much content, having firm owners do interactive exercises, and teaching a wide range of business skills and mind-sets. Online delivery may also enable a much broader geographic reach of such programmes, and potentially lower costs compared to in-person training. COVID-19 made such approaches particularly attractive given the restrictions placed on in-person gathering and an emerging literature has started to test the effectiveness of these programmes.

There are several modalities emerging of the way to provide this online training. One method holds live classes or consulting sessions with an instructor via Skype, Zoom, or some other video conferencing service. Davies et al. (2024) conducted an experiment with over 2,200 female microentrepreneurs recruited from throughout Mexico and Guatemala, with the treated group offered nine two-hour sessions taught live in small groups over Zoom. They find it is now feasible to offer such training even to small-scale firms, and training attendance rates were similar or higher than for previous in-person sessions. However, the cost savings relative to in-person training is modest (\$50 vs \$62) due to small groups requiring considerable instructor time. Training is found to significantly improve business practices and sales (by \$200 or 23%) in the first two months, with a positive but statistically insignificant impact on profits (\$45 or 13%). However, by six months these impacts were close to zero and no longer statistically significant.

Live online training and consulting can be more expensive, but has so far shown stronger results when delivered to more growth-oriented SMEs. The Anderson et al. (2024) experiment in Uganda, discussed previously in Section IVA, was implemented at distance via Skype. Cusolito et al. (2023) conducted an experiment with 225 firms drawn from across six countries in the Western Balkans, with treated firms receiving 30 hours of live group-based training sessions and five hours of one-on-one virtual consulting from Deloitte consultants. The firms had a mean (median) of 17.6 (8) workers and were looking to expand sales into export markets. They find treated firms improve their digital presence through using tools like search engine optimisation, enabling them to attract more customers, resulting in an increase in export sales for firms that were exporting. Training and consulting using a top consulting company had a marginal cost of \$2,140 per firm, with point estimates suggesting firms could earn this back within six months to one year, but with considerable uncertainty.

These live classes and one-on-one sessions have succeeded in expanding the geographic reach of training, but do not dramatically lower the costs and may be difficult to scale to many thousands of firms. An alternative is to use interactive self-paced online assignments that do not rely on a live instructor. A big concern with self-paced online training is that many massive open online courses (MOOCs) have had very high drop-out rates. Cassidy et al. (2025) compare the same training in Ethiopia randomised to be offered via a digital app versus in-person. While 80% of women entrepreneurs start the app-based training, only 22% complete it, far lower than the 71% completing in-person training. One approach that has been used with business training is to work within a supply chain and incentivise take-up with coupons or discounts. Jin and Sun (2022) conducted an experiment with over 700,000 new sellers on a Chinese e-commerce platform, in which one quarter are offered task-based training modules focused on setting up a website, marketing, and customer service. An AI algorithm assigns these training materials based on real-time operating data. Despite offering incentives in the form of additional platform services, take-up is much lower than in-person classes, with only 24% of firms starting a task, and only 12.6% completing at least one task. They find that revenue increases 1.7% for firms assigned to training, and 6.6% for firms taking up training, but since this gain comes from spending more on marketing and promotions, it is unclear how profitable this was for firms. Larger impacts are found in an experiment by Estefan et al. (2023) with 498 chicken franchise store owners in Guatemala. The franchiser offered treated firms 28 video capsules (between one and seven minutes) that provided a mix of traditional business training and rules of thumb, combined with three 1.5 hour virtual one-on-one sessions. They find a 6-12.7% increase in sales over the next year, and a 16-22% increase in profits over a six-month horizon.

Another context in which individuals may be more likely to complete self-paced entrepreneurship training is when it is offered through schools to students. Asanov et al. (2023) deliver online self-paced training to over 45,000 high schools in Ecuador during the COVID-19 pandemic, and find the average student completes over 29 hours, or 24 of 27 sessions on this platform, with centralised management by the Ministry of Education boosting take-up. Lafortune et al. (2024) offer gamified business challenges over a six-week period during COVID-19 to high school students in Rwanda, finding the treated group completed 60% of challenges. Although very high attrition (50%) suggests caution in interpreting results, a short-term follow-up survey did find this increased the likelihood students owned a business a month after training.

The research discussed above shows both the promise and some of the challenges of delivering training online. The recency of most of this evidence, along with the context of delivery during the COVID-19 pandemic for some of the studies, means that the sustainability of impacts is still largely unknown for many of these training programmes. Maintaining quality and take-up in a way that can be scaled to a large number of firms outside of supply chains and schools remains an open challenge. As well as the digital delivery of training, another open question is whether more of the training should focus on teaching firms digital skills. Digital marketing skills have offered promising returns in some studies, but it is less clear whether small firms benefit from digital accounting, digital inventory control and production tracing, etc. Another type of digital skills training aims to help entrepreneurs do online freelancing, which offers the promise of helping skilled entrepreneurs access global customers. Fazio et al. (2025) test a 12-week training programme in El Salvador. They find training completion rates are low, with only 39% completing the first phase, and 16% their full programme. Trained individuals have a 6-7 percentage point increase in getting an online contract, but there is no lasting impact over a year on online entrepreneurial freelancing, which the authors suggest may be in part due to low ratings on the initial contracts. Future work may need to both do more on screening the right types of entrepreneurs for such programmes, as well as helping them succeed once they have their first contract.

Generative AI as Business Trainer or Consultant

The rapid advancement in generative artificial intelligence (AI) has raised hopes that business training and consulting may be able to be made interactive and customised, and delivered at low-cost and scale. A first test of this potential was undertaken by Otis et al. (2024) with a sample of 640 Kenyan small businesses in 2023. They wrote prompts for a GPT-4 'business assistant' and developed a WhatsApp interface for business owners to ask questions which the AI would then provide structured responses to. They then measure impacts over the subsequent two months, finding a small and statistically insignificant average impact on firm performance. They highlight heterogeneity in responses, with firms with above median performance at baseline seeing gains of 15% in an overall performance index, relative to an 8% worsening for below-median firms. The short follow-up period means that it is not possible to know whether firms would continue to use this technology over time, and whether they would get better at learning how to use it with experience.

Further efforts are underway to better train and operationalise generative AI for small businesses in developing countries, such as [MYPE Asesor IA](#), along with rapid improvements in the underlying AI models. One area for further exploration is the extent to which generative AI will be used as an assistant or resource, relying on business owners to ask questions, versus the extent to which it can be used like a proactive consultant, programmed to ask a set of questions, provide a diagnosis, and follow through on implementation of improvements.

In addition to using AI to *provide* the training or consulting, firms may also benefit from training on how to better *use AI tools* in their businesses. Pereira-Lopez et al. (2025) provide preliminary results from an experiment in the Czech Republic with firms that average 10-12 workers. They hold group training workshops in which firms are offered experiential learning on how to use AI tools such as Chat-GPT, and AI features in other business software like Canva Pro and Pipeline, for marketing, streamlining business workflows, product development, and financial management. A midline survey conducted nine months after the workshops finds treated firms have a 26% increase in the intensity of AI use in their firms, and monthly profits increase by around €500, meaning that the cost of the course would be earned back in one month.

V Some Additional Cross-Cutting Research Gaps

The above shows that there is now an accumulating body of evidence on the effectiveness of different types of skill-building support for entrepreneurs. This has been informative in demonstrating the economic returns to better business and management practices, and in helping provide some justification for direct government support to firms (McKenzie 2025). However, there remain many questions about how to best implement these programmes that are often asked by policymakers, but for which evidence is currently limited. We note some of these open areas with the hope that future editions will be able to provide more answers.

A first, general topic that cuts across all of these different types of programmes, is how to best select the firms to support. Often policymakers have multiple, sometimes conflicting, goals, and so may want to generate firm growth, jobs, and productivity improvements, but also help underrepresented groups, support the development of priority industries, and/or also try to address climate goals. There is a concern that trying to do everything with one policy instrument makes it less effective at meeting any of these goals. Nevertheless, even when we have a clear definition of what the desired outcome is, there is limited evidence on what selection mechanisms work best to achieve these outcomes.

One approach is to conduct multiple rounds of screening, to try to identify the firms that are more skilled to begin with, and more motivated to grow. For example, Anderson et al. (2018) approach approximately 10,000 businesses in South Africa, screen them on interest, education, formal status, aspirations, motivation, and attendance in a registration session. Their study has some of the largest point estimates on profits and sales of any in Figures 1 and 2, but it is unclear how much all this screening contributed to these results, since comparable impacts for less-screened firms are not available.

A contrasting view is that poorly managed firms have more scope to improve, but may not appreciate how much they stand to gain, and so may be less interested in training. Karlan and Valdivia (2011) find more improvement in business practices, and suggestive evidence for greater improvement in business results, for firms that were initially less interested in training. Price offers another way of screening firms based on their expected benefit from training, although it suffers from this concern about screening out those who underestimate their gains. Maffioli et al. (2023) randomised the price charged for training and find that charging a higher price results in firms who exert more effort in attending training sessions; however, authors lack power to detect whether they also have larger benefits.

Looking at heterogeneity in treatment outcomes within a study in principle offers the ability to learn whether certain types of firms benefit more (e.g. Campos et al. (2018) look to see whether personal initiative works better for women with higher or lower initial human capital, and find no significant variation), but this type of analysis is constrained by statistical power. Modern machine learning methods offer the potential to examine ex-post heterogeneity in impacts based on many more firm characteristics (e.g. Martínez et al. (2025) find heterogeneity in returns to individual consulting), but it is less clear how well these methods can then perform in selecting future cohorts. More work is needed that explicitly tests how treatment outcomes vary under different selection mechanisms.

A second topic that we have not covered much in this review is whether training or consulting is enough by itself, or whether it needs to be bundled with financial support for firms to truly benefit. A first research and policy question here is how the addition of financing changes the pool of firms willing to participate. It may draw in more applicants and encourage them to exert more effort in training if they feel that both their human and physical capital constraints are being alleviated. However, there is a countervailing concern that firms that are only interested in the capital may apply and see attending training as a tax they have to pay in order to get the money, with less or no benefit to them of training.

The ideal design here would not just compare training to training plus cash or a loan, but also have a treatment arm that offers just the cash or loan without training. Otherwise, as in de Mel et al. (2014), if we find that women offered training and a cash grant have higher profit growth than women just offered training, we do not know if this is because cash enables firms to make better use of the training (and vice versa), or whether it is just that cash helps firms grow irrespective of training. Likewise, Fiala (2018) tests cash against cash plus training, and loans against loans plus training, but has no 'training alone' treatment arm to compare to. Detecting this complementarity or interaction between treatments requires even larger sample sizes than are needed to detect the impacts of a single treatment, and the existing literature therefore does not provide rigorous evidence for whether such complementarity is important.

VI Conclusions

There is now a growing evidence base that does provide guidance on the effectiveness of different ways of training entrepreneurs. This VoxDevLit summarises what we know to date, and highlights areas where much more work is needed. What has the most promise?

Traditional entrepreneurship training has modest but (across studies) significant effects on improving business practices and business outcomes for microenterprises, but no impact on employment. There is a lot of heterogeneity in both samples and results, so there is less guidance on which groups benefit most from traditional training.

Personal initiative and heuristic training can work well for subsistence entrepreneurs, although the quality of the trainers appears to matter a lot. It seems doubtful that medium-sized business owners lack drive and initiative.

Kaizen offers promise for smaller manufacturing firms above the subsistence level, although there are still fewer studies of this approach, and it has not been benchmarked against other training programmes.

Consulting appears to work, leading to improvements for both medium/large firms, and also for smaller firms with an average of 14 workers. However, consulting is expensive, and it is less clear how to scale such programmes. A group-based consulting approach offers potential.

Evidence on the effectiveness of **incubators and accelerators** in developing countries is still scarce, and it is unclear how much the training component matters, and which other non-monetary services have meaningful impacts.

Mentoring of subsistence firms does not appear to offer additional value beyond the cheaper in-person traditional training. Mentoring may work better as a substitute for training, particularly with more advanced firms looking to innovate, but evidence is limited. **Matching firms with well-performing peers** also offers promising results, although the impacts depend on the type of peer and only certain information will diffuse this way.

Online delivery of training and consulting is increasingly being used and shows some promise. The early evidence suggests smaller, subsistence level firms can also participate in such training, but have to date had only modest benefits from doing so. Impacts have been larger when training is coupled or replaced with one-on-one virtual consulting and is directed to larger and more growth-oriented firms. This is a fast-changing area, and the evidence base outside of the COVID-19 period remains limited. Television edutainment and SMS messages have not shown detectable impacts, **while the potential of generative AI to offer customised and sustained scalable training and consulting still lacks evidence.**

Five things we have learned:

- Entrepreneurship can be taught, and impacts can last for years.
- Better business practices matter for all sizes of enterprises.
- Training can at least modestly improve business practices for microenterprises.
- More intense consulting improves performance of larger firms and their subsequent growth.
- Innovating the content and delivery methods for training is important.

Five important knowledge gaps:

- What is the best way to screen and select entrepreneurs for training and consulting, so as to match them to the appropriate type and maximise impacts?
- How do we improve the cost-effectiveness and scalability of training and consulting, for example, by using online and generative AI approaches to training, or innovative forms of consulting?
- What are the factors that limit the adoption of proven beneficial business practices by entrepreneurs and managers?
- How do we make markets for training and consulting work better?
- How do we design and evaluate incubator and accelerator programmes?

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