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Business support for small and medium enterprises in low- and middle-income countries

A systematic review

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Private sector development

3ie International Initiative for Impact Evaluation

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Business support for small and medium enterprises in low- and middle-income countries: a systematic review

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Plain language summary

Motivation: Large amounts of funding are going towards programmes to support small businesses (Small and Medium Enterprises, or SMEs) in low- and middle-income countries, based on the assumption that those businesses will make profits and generate employment, and thus create economic growth and reduce poverty. However, it is not clear how much evidence exists to show whether those results are occurring and for which groups. This is the first systematic review of the evidence regarding these programmes.

Approach: The review looks at measures of SME performance including revenues, profits, and productivity, as well as the firms' ability to generate employment and their labour productivity. We conducted a systematic review of the available quantitative evidence, and also incorporated qualitative studies to better understand the mechanisms at work. We searched for published and unpublished literature, using inclusion criteria according to the study protocol. We critically appraised the studies included, and conducted statistical meta-analysis to gain an overview of the findings and meta-regression to understand heterogeneity.

Results: Our study finds that business' support to SMEs improves their performance, their ability to create jobs, their labour productivity and their ability to invest, on average. The effects on innovation were unclear. We find that matching grants, technical assistance and tax simplification programmes improve firms' performance and job creation; with technical assistance also improving labour productivity. Export promotion and innovation programmes do positively affect exports and innovation, but there is no evidence that they improve performance or job creation. Overall, however, the effects of the programmes studied were not very big in magnitude.

Implications for policy and research: Our findings suggest that overall SME support has a positive impact on various measures of firm performance, but with some caveats. Our analysis could not provide results for all the interventions studied due to a lack of evidence, and the evidence available was mainly about programmes in Latin American countries. There was a likelihood of bias in many studies, and most did not report programme implementation costs, making it impossible to weigh costs against benefits. We recommend that policymakers and researchers prioritise research on these programmes in sub-Saharan Africa in particular, as this would contribute to the understanding of the role support to small businesses may play in development processes there.

Abstract

Background and objectives of the review

Business support interventions in low and middle-income countries (LMICs) direct a large amount of resources to SMEs, with the assumption that institutional constraints impede small and medium-sized enterprises (SMEs) from generating profits and employment at the firm level, which in turn is thought to impede economic growth and poverty reduction. Yet despite this abundance of resources, very little is known about the impact of such interventions. To address this gap, this systematic review analyses evaluations of SME support services in LMICs to help inform policy debates pertaining to SMEs and business support services.

This review examines the available evidence on the effects of SME support services in LMICs on firm-level performance indicators (such as revenues, profits, and productivity), employment generation, and labour productivity.

Methods

We systematically searched for available literature. To identify relevant papers for this review, we conducted electronic searches on key platforms; snowball sampling of references from relevant papers and book chapters, and suggestions from recognized experts in the field. We focused on LMICs as defined by the World Bank classifications, and on evidence published since the year 2000, so as to include more sophisticated evaluation techniques. The references retrieved for this review are up-to-date as of December 2014.

We included studies that evaluated the effectiveness of business support services on firm level outcomes of SMEs in low- and middle-income countries. We defined SMEs as firms with between two and 250 employees, but also included studies that used annual revenue to classify firms as SMEs instead of employee count. We examined interventions involving tax simplification, exports and access to external markets; support for innovation policies; support to local production systems; training and technical assistance, and SME financing and credit guarantee programmes. We looked at studies documenting the impact of any business support service on SMEs when compared with business as usual. We included studies that report at least one final outcome of interest (such as higher profits, employment generation, and productivity). We incorporated studies that use experimental and quasi-experimental methods, and other studies purporting to control for selection bias and endogeneity in selection into the programme.

The search results were screened by two review researchers, and the included studies were similarly coded by two researchers. This double-review process was designed to make the selection procedure and coding more rigorous and to screen for mistakes.

We coded the data according to the impacts and characteristics of the studies selected. Standardised mean difference was used to code continuous variable outcomes and risk ratios to code binary variables outcomes. Effect sizes were synthesised and summarised to one effect size per outcome per study. Given the heterogeneity of true effects, we used analyses of random effects models to estimate overall average standardised effects. Moderator analysis was conducted with four additional variables.

Results

The initial search returned 9,475 studies, which after dropping duplicates and applying the selection criteria were reduced to a final sample of 40 studies. These consisted of 37 papers (23 peer reviewed and 20 working papers), and 6 book chapters. All were produced between 2003 and 2014. Four of these studies could not be included in the meta-analysis as incomplete information prevented us from computing standardised measures. The review reports 242 effect sizes (ES), and the meta-analysis is based on 72 ES; 64 continuous and eight binary outcomes.

Overall, our findings indicate that: Business support to SMEs improves firms' performance (average ES of 0.13 standard deviations (SD) and confidence interval (CI) (0.06, 0.20)), helps create jobs (average ES of 0.15 SD and CI (0.08, 0.22)), has a positive effect on labour productivity (average ES of 0.11 SD and CI (0.08, 0.15)), on exports (average ES of 0.04 and CI (0.01, 0.06)) and on firms' investment (average ES of 0.13 SD and CI (0.02, 0.24)). Evidence on their effects on innovation by SMEs is less clear (average ES of 0.05 SD and CI (-0.01, 0.12).

When the analysis is disaggregated by type of intervention, we find that matching grants continue to show a positive impact on firms' performance and employment of similar magnitude and precision once we exclude some outliers. Excluding the outliers, the average ES for these two outcomes are 0.15 SD (with CI (0.08, 0.22)) and 0.14 SD (with CI (0.03, 0.24)) respectively. Even though they are based on only few studies, results from meta-regression indicate that technical assistance programmes have some positive effects on firms' performance, jobs creation and labour productivity, whereas tax simplification programmes seem to improve firm performance and generate jobs. Export promotion and innovation programmes seem to positively affect exports and innovation respectively, but do not seem to have an effect firm performance and employment creation outcomes. The average ES are extremely low and very imprecisely estimated.

Implications for policy and research

Our findings suggest that, overall, SME support has a positive impact on firm performance indicators. The results of our review should not be interpreted as clear evidence of SME support effectiveness, however, as the meta-analysis was unable to provide results for all types of interventions or for specific countries. There was also significant risk of bias in many studies. Most of the studies found relate to Latin America, and thus cannot be interpreted as being applicable to other regions, including Africa. We recommend further analysis of cost-effectiveness, as most studies do not indicate the cost of implementation.

There remains a paucity of rigorous evaluation studies on SME support programmes in Africa, and Sub-Saharan Africa in particular. Therefore, the generation of more evidence for the African context is paramount to the improved understanding of the role SME support programmes might play in the development process.

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1. Background

1.1 The Problem, Condition, or Issue

Small and medium enterprises (SMEs)—defined in this review as businesses with up to 250 employees—are believed to be important contributors to economic growth and a tool to reduce poverty in developing countries.[1] They are responsible for the majority of employment generation in developed as well as in developing countries (Ayyagari et al., 2007). SMEs also play an important role in the formal labour force. Consequently, they play a central role in employment generation policies and economic growth strategies. Ayagari et al. (2007) show that formal SMEs are responsible for most of the private-sector-related employment in developed countries. For instance, SMEs are responsible for around 60 to 70 per cent of employment generation in Germany, Finland, Belgium, and Canada. However, in African countries SMEs are responsible for a smaller share of formal employment generation. For instance, SMEs provide about 20 per cent of employment in Nigeria, Côte d'Ivoire, and Cameroon. The literature also suggests that the SME sector's contribution to employment shows a strong positive correlation with GDP per capita; thus increasing this sector's contribution to employment may generate growth (Ayyagari et al., 2007; Beck et al., 2005). As a result of the above, it is perhaps reasonable to suggest that effective business support services may positively affect GDP per capita. It is important to note that African economies have a lower percentage of formal workers in SMEs due to the fact that these economies have a larger (although less productive) informal sector. The SME sector, through its ability to generate employment, may thus play an important role in the path towards a more formal labour market.

SMEs can further be linked to economic growth through their ability to link knowledge, product commercialisation and total factor productivity (Acs et al., 2009; Solow, 2007). A seminal study using a cross-section of countries to analyse SMEs and economic growth was provided by Beck et al. (2005), who found a positive but not causal relationship between them. An exploration of other available empirical evidence however, shows that while studies that focus on developed nations suggest a positive impact of SMEs and entrepreneurship on economic growth, studies examining developing countries suggest a negative impact (for example, Audretsch and Keilbach, 2004; Mueller, 2007; Cravo 2010; Cravo et al., 2012; Cravo et al., 2014).[2] Acs et al. (2008) have attributed these differences in empirical results to different entrepreneurship responses to institutional arrangements). Moreover, heterogeneity in institutional arrangements is likely to provide different incentives to rent-seeking activities (Baumol, 1990). Thus, the role of SMEs in a given economy can be expected to vary depending on the institutional setting and level of development.

Development agencies provide a considerable amount of targeted assistance to SMEs in low- and middle-income country economies (Beck et al., 2006). For instance, the World

[1] This report excludes studies that consider exclusively microenterprises. This distinction is made because self-employed and micro-entrepreneurs targeted by microfinance interventions are thought to have a different nature in comparison to SMEs and are less likely to grow with individual interventions and by nature less likely to create jobs.

[2] For instance, innovation support might be more effective in more developed countries because the nature of the SME sector differs from developing countries due to institutional factors. An innovation policy might be successful in a developing country if it supports the segment of SMEs that has the institutional capacity required to innovate.

Bank devoted US$9.8 billion to SME projects during the period 2006–12 (IEG, 2013). For the same period, the support of the International Finance Corporation (IFC) of the World Bank Group directed to SMEs amounted to US $25 billion.

In the literature, there is limited evidence on the impact of SME support, due to either an insufficient number of studies employing convincing identification strategies to isolate the causal impact of the intervention under consideration, or to there being limited information regarding the mechanisms underlying such interventions. This systematic review draws on economic theory to uncover the channels through which a particular intervention can affect the outcomes of interest (such as firms' performance, employment creation, labour productivity and innovation). We therefore separate reported outcomes into two categories wherever possible, these being *intermediate* and *final*, in order to uncover the trajectory of change for each intervention.

1.2 The Intervention

In developing countries, business support interventions are often based on the assumption that institutional constraints (or failures) impede SMEs from reaching their full potential to generate jobs, profits, economic growth, and poverty alleviation. Thus, the large amount of financial resources allocated to the development of a SME sector by governments and development organisations is designed to address institutional constraints and allow SMEs to operate more efficiently, thus leading to productivity growth (Beck et al., 2005).[3]

Various approaches are used to provide support services to SMEs. We have identified the main approaches to SME support as programmes relating to the following: formalisation and the business environment, volume exported (intensive margin), value chains and clusters, training and technical assistance, and finally, SME financing and innovation policy.

This literature can be divided into two distinct themes. The first considers indirect support that addresses the constraints that prevent SMEs from accessing credit, whereas the second addresses the impact of direct business support to SMEs. In the first strand, many studies look at the impact of an indirect type of public support aimed at SMEs, such as tax simplification, which is intended to provide incentives for informal SMEs to formalise. The underlying assumption is that formal firms are less credit-constrained than their informal counterparts and therefore formalisation is an effective way of helping entrepreneurs. Formalised firms are expected (assumed) to have higher economies of scale and consequently be more productive, demand a more skilled labour force, and have higher profits over informal firms. If informal firms are prevented from growing due to credit constraints, then reducing the cost of formalisation should, in theory, indirectly give informal firms an opportunity to escape the informality-low-productivity trap. Such interventions are an indirect form of public support, as they target all firms with annual revenues below some threshold. Moreover, all informal firms are incentivised to formalise through tax simplification. Those that formalise do not directly receive other forms of public support[4].

[3] The Research Group at the World Bank has conducted several experimental and quasi-experimental evaluations to investigate the impact of regulatory changes aimed at reducing bureaucratic barriers to SMEs' formalisation and growth. See Bruhn and McKenzie (2013) for a review.

[4] In fact there are interventions that are targeted to formal enterprises only, such as subsidized credit lines. Thus it is possible that after formalizing some firms may end up being served by different interventions.

The second group of studies addresses the impact of direct business support to SMEs. These generally estimate the impact of a support programme to SMEs within a specific sector in a given country, with the intervention based on the assumption that SMEs face specific constraints (for instance, a limited pool of skilled labour, limited innovation capability, and/or coordination failures). In this view, SMEs need public support to break through specific constraints, and in turn improve their prospects for investment and productivity. A successful intervention may even generate spill-over effects on firms that do not belong to the target group of the programme. These may include firms in other sectors and/or informal firms in the same sector. This kind of support comes in the form of training programmes, support for innovation or value chain and association strategies (for example, clusters), which are intended to address coordination failures. Notice that, unlike the indirect public support programmes, the unit of intervention is the firm itself. Firms are directly targeted with programmes that aim to help them shift from a low equilibrium (small size and scale) to a high equilibrium (bigger scale and dynamism).

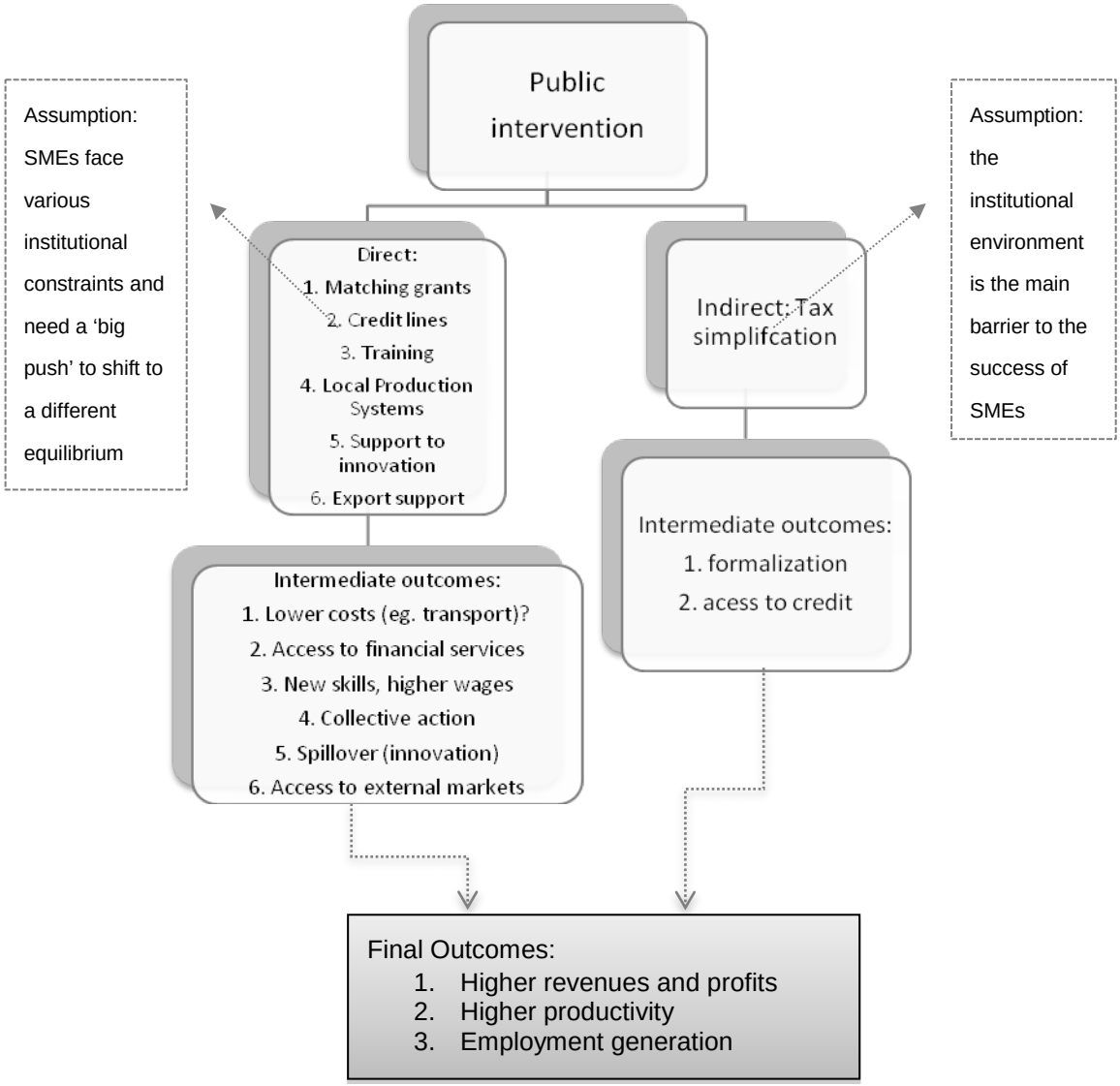
As McKenzie (2009) notes, there is a need for more rigorous evaluation of business training policies and related interventions, particularly with respect to unintended and unconventional outcomes. Of course, SME institutional environments are not homogeneous; according to McKenzie (2011), for instance, across Africa policies that aim to support productivity and growth must consider that the number of SMEs is relatively small (and that most firms have just one or two employees) and that there is considerable heterogeneity in their performance.

1.3 How the Intervention Might Work

Since this review investigated the impact of a diverse array of interventions, presenting a general theory of change was challenging. That said, we do provide a theory of change based on our preliminary search of the literature, yet we do so with the caveat that each type of intervention is based on particular assumptions of an intervention-outcome causal relationship. Therefore our approach to building out this theory of change has involved taking a case-by-case perspective on the assumptions regarding the causal chain of each of the programmes analysed.

However, and as mentioned in Section 1.2, support to SMEs is generally related to the dual goals of productivity growth and employment generation. A general theory of change motivating SME support services is thus linked to the improvement or creation of institutions that allow SMEs to reach their full potential with regards to growth and employment. Figure 1 below provides a more general illustration of a theory of change for the intervention models surveyed in this review.

Figure 1: Theory of change



The following paragraphs discuss each channel of intervention shown in Figure 1.

1) Matching grants. According to McKenzie (2011) this is the most widespread intervention in African countries. These programmes consist of a government subsidy with the government reimbursing those costs firms incur with regards to training, marketing, and/or attending a trade fair. This programme is justified on the grounds that these investments have positive externalities, and that on their own firms are likely to invest less than the optimal level (McKenzie, 2011).

2) Credit lines. SME financing programmes are popular and are intended to tackle adverse selection and moral hazard in credit markets, problems that result in financial constraints and limits to SME activities (e.g. Aivazian and Santor, 2008). The availability of credit is thought to allow firms to invest and hire new employees and productive assets. These investments are likely to lead to productivity growth.

3) Training and management programmes. These programmes are provided in the context of LMICs, and are based on the idea that market failures that limit firm growth are related to

the lack of skills among the workforce. Thus, skills acquired in specific training programmes should contribute to worker employability and wages, but also to firm productivity (for example, through the adoption of more efficient management practices).[5]

4) Interventions that support local production systems (LPS). These are based on the idea that individual firms benefit from agglomeration externalities and coordination (for example, Schmitz, 1995). For instance, consider a project in a region specialised in a given sector providing incentives for firms to act collectively (such as training, joint purchases, or joint certifications). Economic theory suggests that formal firms might act together to capture collective externalities, experience mutual growth, and impact local economic performance. A successful project that allows firms to benefit from positive externalities generated by collective actions would affect outcomes such as employment and regional growth through: 1) the establishment of collective agreements, and 2) specific outputs from collective action. The resulting causal chain is as follows: firms will organise around a common goal, enabling them to capture positive externalities from collective actions. Collective actions are expected to generate intermediate outputs that allow firms to achieve higher levels of productivity and employment, and in turn positively impact regional economic performance. Interventions related to agglomeration economies also relate to value chains, networks or clusters[6].

5) Support for innovation policies. These involve funding for improving processes (Lagace and Bourgault, 2003), and are intended to capture externalities stemming from an innovation. Innovation programmes aimed at SMEs might support innovation transfer, R&D programmes, and certifications related to innovations (for example, process innovation and/or product differentiation). The rationale is that innovation will impact the productivity and growth of the firm, which in aggregate contributes positively to regional and national growth.

6) Public intervention supporting access to external markets. Such interventions seek to tackle information asymmetries that prevent firms from accessing external markets, and involve the provision of training, courses, and counselling. The identification and adaptation to external markets generates exports that may lead to increases in production, which in turn are thought to impact firm profit and employment creation.

7) Tax simplification. These initiatives are a form of indirect business support to SMEs, and are aimed at improving firm performance through the channel of formalisation. Economic theory suggests that formal firms will be able to grow by accessing credit markets and by taking advantage of economies of scale. A tax simplification programme could affect outcomes such as employment and profit through two intermediate outcomes: a) formalisation rate, and b) access to credit. The causal chain could be simplified as following: the necessary conditions for a tax simplification programme shifts informal entrepreneurs from an equilibrium characterised by low productivity and profits, to another where they face fewer constraints to growth (as a result of formalization). Plenty of studies concentrate only on final outcomes, and thus shed little light on the mechanisms associated with tax

[5] See McKenzie and Woodruff (2014) for a review of business consulting programme evaluations in developing countries

[6] Like the papers included in this review, we do not try to provide a specific and precise definition of local agglomeration. For more about the difficulties related to the concept and definition of spatial agglomerations please see Altenburg and Meyer-Stamer, (1999) and Manrtin and Sunley (2003).

simplification/formalization (and consequently offer little policy guidance). The underlying assumption is that formal firms are less credit-constrained than their informal counterparts, and therefore formalisation is an effective way to help entrepreneurs. Indirect support to SMEs may include policies regarding business registration, property registration and regulatory frameworks (Fajnzylber et al., 2011; Monteiro and Assunção, 2012; McKenzie, 2013).

1.4 Why the review is Important

Given the amount of resources and attention governments, development agencies and organisations around the world dedicate towards SMEs to spur firm performance, innovation, productivity, exports, and employment generation, this review has high policy relevance. In addition to the diverse array of policy goals tied to the support of SMEs, a number of broader impacts on society and economy are seen as by-products of support interventions, including higher wages and poverty reduction (Beck et al., 2006).

Yet despite their worldwide prevalence, too little is known about the impact of SME support interventions. In a recent survey on SME policies in African countries, McKenzie (2011) shows that African firms are generally small (with up to 10 employees), but very heterogeneous in terms of employment, sales, and access to external markets. Moreover, McKenzie (2011) notes that that although SMEs are supported in several ways across Africa, rigorous evaluation of such policies and their associated interventions is scant. Further, Bruhn and McKenzie (2013) show that despite interventions to promote registration and formalization, a majority of SMEs remain informal. These results are surprising, given that the SME sector is one of the main targets of international and national aid agencies (Cravo et al., 2014). This research fills part of this gap through a systematic summarizing of all available rigorous evaluations of SME support services, and communicating their results to policymakers working on SME-related issues worldwide. The report considers as rigorous evaluations the studies that used experimental and quasi-experimental approaches.

The policy relevance of this review is further enhanced by a focus on Africa-relevant evidence, which should be of particular interest to policymakers and donor organisations. Among the Africa-specific issues we examine the question of SMEs' potentially limited contribution to employment in African countries relative to other regions, and, in contrast, their potentially greater contribution for poverty reduction.

The literature evaluating on the impact of indirect business support services has been receiving growing attention in recent years. Studies analysing the effect of a tax simplification programme on formalisation and firms' performance are particularly interesting as they are closely related to the development of the institutional setting related to the private sector.

In the context of low- and middle-income countries, a considerable amount of evidence is available for different types of direct support to SMEs, especially in Latin America. For instance, the effect of value chain support, process and innovation support, credit programmes and training programmes are some examples of direct support to SMEs. This review contributes to provide an account on the effect of different types of direct support on firms' performance. Also, it assesses the effect of indirect support to SMEs in the form of tax simplification interventions. Such evidence might be very useful to design more effective support for SMEs.

Though most of the papers cited above indicate a positive effect for SME support programmes on selected outcomes, there is a need to systematically review and synthesise the evidence to provide an unbiased account of the impact of these programmes on firm performance. As the evidence appears to be predominantly from Latin America, its applicability to African countries, or any other context for that matter, is not straightforward. This is due to lack of external validity associated with these studies. A comprehensive understanding of the mechanisms underlying the causal chain of an SME intervention is therefore crucial if one is interested in designing SME interventions for different contexts. Therefore, as part of this review we aim to shed light on the impact of various programmes, as well as on the mechanisms that can help policymakers understand why similar programmes succeed in some countries or contexts but fail in others.

This review has some similarities with another Campbell-registered review, by Grimm and Paffhausen (2013). Theirs, however, focuses on employment creation and business creation and not on firm performance outcomes such as productivity, revenues, profits, innovation, formalization, and access to credit—all of which are the main outcomes of interest of our review.

2. Objectives

This review examines evidence on whether the provision of various SME support services impact firm performance, and how these may result in better performance indicators of firms (such as revenues, profits, productivity), employment generation and labour productivity with focus on low- and middle-income countries (LMICs). The analysis is based on the search of literature relevant to the impact of business support services for SMEs. The following questions are explored:

i. What are the effects of business support services to SMEs on firm-level outcomes? (Review question i.)

ii. How do intervention-outcome effects differ per type of SME business support interventions (e.g. tax simplification, access to finance, training, and so on)? (Review question ii.)

iii. What are the most effective business support interventions for achieving different outcomes? (Review question iii.)

iv. Is the effectiveness of an intervention context-specific? If so, what specific institutional mechanisms (or 'rules of game') facilitate or attenuate intervention effectiveness?[7] (Review question iv.)

In answering these questions, the research examined intermediate outcomes (such as access to credit, training, formalization and access to external markets), final outcomes (such as higher profits, employment generation, productivity), and also any context-specific variables for explicating the causal chain of an intervention. Thus, a key objective for this review is to explore moderator variables that may link to the institutional settings and levels of development in each respective study context.

[7] The funders of this review asked that special attention be paid to Africa, both in terms of study search and analysis and in terms of extrapolating the implications of the results. We attempt to relate findings to African countries where applicable. We have also included specific analysis of how applicable the evidence is for African contexts (Appendix C).

3. Methods

3.1 Criteria for Considering Studies for This Review

3.1.1. Types of studies

The review draws on a broad search to identify studies that relate to the interventions aimed at SMEs in LMICs.

To address the review questions (i.e. review questions i. through iv.), the review focused on quantitative analysis and included only studies that used rigorous impact evaluation in the form of experimental (randomised controlled trials, or RCTs) and quasi-experimental methods – such as regression discontinuity design (RDD), instrumental variables (IV), difference-in-differences (DID), matching on covariates, or propensity score matching (PSM), and any other studies that purported to control for selection bias (for example, Heckman two-step estimator).[8] Studies selected must have reported controls for the endogeneity of programme placement or self-selection into the programme. Experimental and quasi-experimental methods are widely seen as the best tools when the main objective is to estimate the causal impact of an intervention or policy (for example, see Duflo et al., 2008). When an intervention is carefully designed or the identification strategy of an observational study convincing enough, the findings on the impact of the programme or intervention are said to have internal validity, that is, one can claim that the difference in the outcomes between treatment and control groups was caused by the intervention.[9]

This review thus only considered those studies that assessed the impact of an intervention comparing the treatment (or eligible) and the control (or comparison) groups at one or more points in time. In cases where more than two treatment phases were considered, the estimates involved comparison of the two treatments.[10] The studies considered are therefore drawn from cross-sectional and panel data datasets. Quasi-experimental studies that relied on observation data must have shown balance tests or use a matching method to control for imbalances in observed characteristics to warrant inclusion. Moreover, studies using matching methods needed to clearly state the eligibility criteria of the programme to make the case that the problem of selection bias was (mostly) due to observed characteristics. Most importantly, the studies included documented the impact of any business support service on SMEs compared to business as usual. In addition, and as noted prior, the review compared the impact of different types of business support service on firm performance.

As discussed in Waddington et al. (2012b), focusing exclusively on studies that use experimental and quasi-experimental methods may significantly restrict the studies that can be included in a review. Although this is a legitimate concern particularly if one is interested in

[8] As is discussed in the critical appraisal section, the method/design is not a sufficient condition for the inclusion of a study in the review.

[9] On the other hand, RCTs are often criticised because their findings do not have external validity, that is, the findings cannot be generalised to different contexts (see Deaton, 2009). In some cases, systematic reviews can be conceived, at least partially, with the purpose to shedding some light on this issue of external validity as it is a synthesis of results for the same type of intervention taking place in different circumstances (see Vivalt, 2015).

[10] For instance, one study could be interested in comparing which package of intervention (treatment arm) is more effective in boosting firms' productivity: training, or training plus subsidies. The impact of each treatment type could be estimated by comparing each treatment group with the control group. However, under some assumptions, one could also compare the two treatment groups to identify the effect of the subsidy component.

comparing different interventions, we accepted this trade-off based on the idea that findings that do not control for selection biases may be misleading in terms of policy relevance.

3.1.2. Types of participants

This review only focuses on studies that evaluate policies aimed at supporting SMEs in LMICs (as defined by the World Bank's classification). The focus on LMICs is justified firstly because private firms in these countries tend to be more labour intensive and less innovative, and consequently are a main employer for a large proportion of the labour force (e.g. Acz and Amoros, 2008; Cravo et al., 2012). Secondly, restricting the scope to LMICs helps to identify the binding constraints that SMEs might face in similar institutional contexts, such as in a number of African settings. The term SME covers a wide range of definitions and measures that vary depending on country context and reporting methods. Some of the commonly used criteria to define and measure SMEs are the number of employees, total net assets, sales, and investment level (Ayyagari et al., 2007). The most common criterion used to classify SMEs is based on employment information, often due to data availability. The cut-off used to define SMEs is usually 250 employees.[11]

This review draws on this definition and considered SMEs to be firms that have up to 250 employees. We also included studies that do not provide the number of employees but use annual revenue to classify firms as SMEs instead[12]. Other types of interventions, such as those aimed only at supporting entrepreneurship and the creation of microenterprises (for instance, microfinance[13]) are not considered for this research. We make this distinction because self-employed and micro-entrepreneurs are thought to have a different nature in comparison to SMEs.[14] The former, especially in LMICs, are comprised of less productive or informal enterprises of few employees in the fringe of markets. Furthermore, these enterprises are often ineligible for those public interventions covered in this review. Thus, the common definition of SME based on number of employees fits our purpose of covering a broad set of interventions and potential relevance for African countries.[15]

Though the literature recommends that synthesis is informed by the theory of change embedded in the design of an intervention (see Waddington et al., 2012b), our focus extends beyond the outcomes directly anticipated by an intervention to include unanticipated outcomes also.

[11] The European Union and the World Bank use such definition (see, for instance, the Enterprise Survey website www.enterprisesurveys.org). Further, empirical papers, such as Beck et al. (2005), Ayyagari et al (2007), Cravo et al (2012), Kushnir et al (2010) adopt 250 employees as a cut-off to classify SMEs.

[12] By doing that we departure from what was stated at the Protocol. In the Protocol we state that we would work with firms that have between 5 and 250 employees and would use that definition during the screening stage.

[13] In line with Ayyagari et al. (2011) and the literature more generally, we consider microenterprise firms to have less than 5 employees. In developing countries these often operate as informal enterprises.

[14] Some interventions might target SMEs and microenterprises together. We identify these cases and conduct sensitivity or sub-group analyses to check the effects in case of the inclusion of microenterprises in the study.

[15] In fact, according to McKenzie (2011) SMEs tend to be relatively small in African countries. A flexible definition of SMEs is thus suitable for including interventions targeting firms of different sizes.

3.1.3. Types of interventions

Support to SMEs is related to the dual goals of productivity growth and employment generation; the theory of change that motivates SME support services is linked to fostering institutions that enable SMEs to grow in these goals. Figure 1 provides a general illustration of the theory of change for the interventions surveyed in this review, which are detailed in Table 1.

Following the discussion in Section 1, we include the following interventions in our review:[16]

Tax simplification; might be seen as an institutional improvement. The support to SMEs in this case is usually accompanied by actions that support formalisation of SMEs. Therefore, tax simplification is intended to provide incentives for informal SMEs to formalise. For instance, new legislations might establish that SMEs pay taxes based on a fixed percentage of gross revenue, usually reducing the tax burden paid by firms (e.g. Fajnzylber et al, 2011). Tax simplification incentives can also be coupled with strategies that streamlining the process of opening a business (e.g. Bruhn and Mckenzie, 2013).

Exports/Access to External Markets; defined as interventions that correct market failures such as information externalities and help SMEs overcome obstacles to exporting (Volpe and Carballo, 2010; Volpe et al., 2010; World Bank, 2010). As suggested in Section 1, this type of intervention is related to information asymmetries that prevent firms from having access to external markets. Institutions that promote exports usually offers support through the creation of export consortiums, trade promotion in international business fairs, market research, trademark development, and trade information. For instance, Weiss et al (2011) describes a public policy instruments for export promotion in Chile called Export Marketing Assistance (EMA). This initiative provides participant SMEs knowledge about external markets, specialised information and allow firms to participate in international fairs.

Support for innovation policies is based on the idea that social returns to innovation exceed private returns (Lundvall and Borras, 2005; Acs and Audretsch, 1988). Interventions designed to support innovation vary. This review will consider different types of innovation support subsidies and tax incentives, as identified in the preliminary search.

Matching grants are interventions that provide a government subsidy related to those costs firms incur with regards to training, marketing, and/or attending a trade fair.

Local production systems: defined as interventions that help individual firms benefit from agglomeration externalities and overcome the coordination failures that prevent SMEs from capturing these externalities (Schmitz 1995; Schmitz and Nadvi 1999; Giuliani et al., 2005). Arraiz et al (2013) describes a Supplier Development Program in Chile where collective action aims at establishing a long-term commercial relationships between large buying firms and their small and medium enterprise (SME) suppliers to increase competitiveness. The objective is to collectively form a mutually beneficial relationship to help firms compete more effectively in the marketplace.

Training and technical assistance: defined as interventions that provide support for employee training and technical assistance, based on the idea that skills improve

[16] All studies found in the search process that satisfied the inclusion criteria outlined in the protocol were included in this review. There was no further exclusion criteria based on dose, duration and intensity of intervention.

employability and wages of workers and contribute to firm productivity (Attanasio et al., 2011; Rosholm et al., 2007). This type of intervention also includes consulting services and management practices such as those considered by the World Bank (2010), Bruhn et al. (2013) and Bloom et al. (2013).

SME Financing/Credit Guarantee: adverse selection and moral hazard in credit markets generate financial constraints, which in turn restrain SME activities (Beck and Demirguc-Kunt, 2006; Michelacci and Silva, 2007; Canton et al., 2012). The review will consider in this line of support, interventions that provide loans or insurance services to SMEs, such as those noted in World Bank (2010) for credit and in Oh et al. (2009) for credit guarantee schemes.

It is important to note that various sub-components of business support interventions may overlap in the review/analysis. To avoid this we developed a conceptual model to categorize interventions as accurately as possible. Whenever possible sensitivity analyses are conducted using moderator factors and/or excluding studies with high risk of bias.

3.1.4. Eligible comparison groups

Most of the papers included in this review investigating the impact of a public policy targeting SMEs compare a treated (or eligible) group with a control group (or comparison group in the case of quasi-experimental design). However, we distinguish studies that compare treatment and control (or comparison) groups from those studies that have more than two treatment arms, and further separate evidence according to intervention design. In the case of RCTs, for instance, an intervention can use a phase-in design, an encouragement design, cluster (or block) randomisation, or pure randomisation (see Duflo et al., 2008). Different designs have two implications: (1) they almost always identify different parameters – intention to treat (ITT), average treatment effect (ATE), average treatment effect on the treated (ATT), local average treatment effect (LATE) and so on; and (2) they almost always differ in terms of data collected (different take-up rates, different attrition rate, different risk of contamination bias and so on).

3.1.5. Types of outcome measures

Our review covers studies that looked at both intermediate (or secondary) outcomes (such as access to credit, formalisation and access to external markets) and final (or primary) outcomes (such as profits, employment generation, and productivity). To be included in the review the study had to report estimates to at least one final outcome. Studies that reported estimates for secondary outcomes only were excluded.[17] To understand the causal chain of each intervention, this review looked for context-specific variables that can help explain either the failure or success of an intervention.

For the purposes of this review, we defined firm performance impacts as referring to objective indicators such as revenues, profits, job creation, innovation, formalisation, number

[17] Note that this decision represents a deviation from the review's protocol according to which studies had to report at least one impact to do with firm-related outcomes, either intermediary or final. We excluded studies that focused only on intermediary outcomes because they do not show whether the intervention improved firms' outputs or not. This decision led to the exclusion of only two studies, however, with no implications for African countries since both looked at the impact of tax simplification policies on the formalisation rates of firms, in Brazil and Bangladesh respectively.

of workers trained, and access to credit. Only factual/objective measures of firm performance impacts are included: subjective measures on beliefs and perceptions are excluded.

Primary outcomes

Primary outcomes of SME support revolve around better firm performance and growth and therefore can be categorised as: firm performance (e.g. revenues and profits), employment, productivity, and labour productivity. The following are examples of studies looking at these outcomes, which we include in the review: Mano et al.'s (2012) experiment in Ghana to analyse the effect of an SME training programme on sales and profit; Benavente and Crespi's (2003) study of the effects of an association strategy on productivity in Chile; Arraiz et al.'s (2012) assessment of the effect of value chain support on sales, employment and exports in Chile; Tan's (2009) evaluation of different Chilean SMEs programmes for technical assistance, cluster programmes, technology programmes and credit programmes on sales, output, employment, wage, productivity, and exports; and Castillo et al.'s (2011) study of the effects of process and innovation support on exporting, employment, wages, and survival in Argentina.

Secondary outcomes

Secondary outcomes vary according to the type of programme, but can be broadly defined as: innovation, exports, investment, and access to credit, formalisation, and management practices.

Programmes that provide access to credit ultimately aim to increase firm resilience and survival (for instance, allowing firms to endure an economic recession) and/or seek to encourage investment. The primary intention of these interventions is thus firm survival and increases in productivity. Similarly, with SME support related to innovation, training, and the value chain, underlying assumptions hold that innovative practices, more skilled workers, and a better coordination will result in higher productivity, employment generation, and access to foreign markets. For instance, Ibarraran et al. (2009) focus on how interventions such as training programmes, access to credit, product innovation, and certification affect the productivity of SMEs in Latin American countries.

3.2 Search Methods for Identification of Studies

3.2.1. Electronic searches

The generalised search strategy covered as comprehensive a set of published and unpublished sources as was feasible within the period allocated. We prioritised electronic searches since regarding the interventions of interest, it was most likely that sources available electronically were reported in the formal literature on SMEs, or in the 'grey literature' from national and international organisations.

The first stage of the review involved a search of all published and unpublished studies likely to be relevant to our study objectives. To be included, they had to:

- Report on SME support interventions of the kind detailed in the section on interventions;
- Focus on LMICs, as defined by the World Bank classification; and,

- Have occurred since the year 2000, since the review would cover studies that used impact evaluation techniques that have evolved since that period.[18]

Given the variety of interventions covered in this research, reference 'snowballing' was an effective strategy for beginning our search (Hammerstrøm et al. 2009; cited in Waddington et al., 2012). Reference snowballing consists of using existing reviews, papers, and reports to identify the set of studies to be reviewed. Our search strategy therefore drew on a first set of important studies already identified (see References, section 10). We then proceeded to conduct the electronic search as laid out in the next section.

3.2.2. Electronic searches

Databases:
3ie database of impact evaluations: http://www.3ieimpact.org
EconLit (Ovid)
ABI/INFORM Global (ProQuest)
PAIS International (http://www.csa.com/factsheets/pais-set-c.php)
Sociological Abst
Worldwide Political Science Abst (WPSA)
ASSIA
Web of Science ie 'Web of Science – Social Sciences Citation Index'
Business Source Premier (Ebsco)
Academic Search Complete (Ebsco)
Scopus
DAC (OECD)[19]
Google Scholar: http//scholar.google.com
Journals:
Informaworld Taylor & Francis Journals Complete
Ingentaconnect.com (Ingenta)
JSTOR (All Collections)
Periodicals Archive Online (ProQuest)
Royal Society Journals
SAGE Journals Online
ScienceDirect
SpringerLink (MetaPress)
Wiley InterScience
Portals:
World Bank: http://www.worldbank.org/html/extdr/thematic.htm

[18] The year 2000 was used as the temporal cut-off for several reasons. The impact evaluation literature related to SMEs developed after this year and in the process of identifying the main approaches to SME and designing the review, no reference prior to 2000 was found. Also, the decision took into consideration that going back in time was going to generate an enormous additional number of abstracts to be reviewed and very likely return very few, if any, SME impact evaluation. For instance, a paper by Grimm and Paffhausen (2015) study a similar issue but focus only on employment outcome. Their search was done after 1990 and only one paper from prior to the year 2000 (Fretwell et al, 1999) was found. This paper would not qualify to enter this review as it is designed to assess active labor policy in general (not SMEs specifically) and also includes assessment of self-employment which is not covered by this review.

[19] DAC Evaluation Resource Center focuses on reports on Monitoring and Evaluation. Nevertheless, the review screened all references in the DAC Evaluation Resource Center and did not find any evaluation related to SMEs.

IDB: www.iadb.org
AFDB: www.afdb.org
ADB: www.adb.org
UNDP: http://www.undp-povertycentre.org/
DFID: http://r4d.dfid.gov.uk/
CIDA: http://www.acdi-cida.gc.ca/reports

Search terms

Table 1 provides the list of basic search terms used to identify studies in the systematic review. Based on these terms, a detailed search strategy was set up to account for US and British English spelling, to seek for the most relevant studies and to restrict the search to LMICs. The details of the search strategies are provided in Appendix A. The search strategy was developed using the Social Science Citation Index (ISI) and Econlit databases, two of the most important databases in economics. These search strategies were adapted for other databases that allow the users to construct detailed strings of search terms that are provided in the appendix. For the 3ie database and Google, we used the search terms provided in **table 1**.[20] All searches strategies performed are provided in the appendices.

Table 1: Types of intervention and related search terms

Types of interventions targeting SMEs	Related search terms
Formalisation/Business Environment (Institutional Improvement)	SMEs and (formalization, business environment, institutions, property registration, regulatory frameworks)
Exports/Access to External Markets	SMEs and (exports, certification, market fairs)
Support for innovation policies	SMEs and (Innovation, patents, trademarks, research and development, technology transfer)
Value Chain, Networks and Cluster interventions	SMEs and (value chain, clusters, network, local productive systems, collective actions)
Training and technical assistance	SMEs and (training, technical assistance)
SME Financing/Credit Guarantee	SMEs and (finance, credit, guarantee), matching grants

[20] The review took a look at the first 10 Google Scholar result pages classified by the relevance of the reference.

3.2.3. Searching other resources

Along with database searches, three research assistants undertook manual back searches in bibliographies of studies and journals identified as relevant to the review.[21] Given that the search focuses on LMICs, we also contacted experts in the field for recommendations on studies as well as addressing under-researched aspects of the interventions of interest. In addition, we contacted authors to obtain more information pertaining to the interventions they studied. The review covers studies published in English, Spanish, and Portuguese.[22]

3.3 Data Collection and Analysis

3.3.1. Selection of studies

The selection of studies followed the search method described above. The search and selection of studies were done as follows:

1. Two Principal Investigators (PIs), with support of John Eyers of 3ie, searched all the relevant electronic platforms and downloaded 9,475 papers using a RefWorks account. Additionally, the two PIs snowballed papers and books and downloaded a further 17 papers. After dropping duplicates, the list was reduced to 5,785 papers.
2. Three research assistants contributed to the process of reviewing abstracts. Working independently, all abstracts were read by two research assistants who identified a list of 63 papers that met all the inclusion criteria, disagreements were resolved by a third member of the team.[23] The list dropped to 42 after the exclusion of 21 studies that covered microenterprises only. The papers were then divided into folders according to methods used, titled “quasi-experimental methods” and “experimental methods” respectively. Papers without an abstract, those unclear about the method used, and those without basic characteristics of the firms studied were saved in a miscellaneous folder titled “maybe”.
3. The two PIs read the abstracts and methodology sections of the remaining 42 papers to decide whether they should be selected or not. The PIs decided to exclude studies that looked exclusively at intermediate outcomes – such as formalisation rates and numbers of new firms – and different versions of the same study. In the end, they came up with a list of 36 papers that could be assessed in the meta-analysis.

Whenever necessary, the PIs discussed and agreed on which papers to drop based on the detailed ‘filters’ outlined in the protocol.

[21] The search strategy did not involve searching physical journals or library shelves. The search strategy did not specifically looked for Master and PhD theses.

[22] The search strategy did not involve specific search of papers published in French (e.g. snowballing and internet search). Nevertheless, papers in French identified through the search of electronic databases were screened.

[23]. We decided to keep studies that pooled micro, small, medium and large enterprises, such as that by Hon Tan (2011), which did not provide heterogeneous analysis for different groups of firms.

3.3.2. Data extraction and management

The list of information extracted from the papers is shown in the study protocol (Gonzalez et al. 2014). The papers were tabulated in an Excel sheet and all relevant data were then uploaded to and analysed in Stata.

3.3.3. Assessment of risk of bias in included studies

To assess risk of bias in RCTs and quasi-experimental studies we used the 3ie risk of bias tool. Three researchers contributed to the risk of bias assessment. Two researchers worked on the extraction of the data and decisions on risk of bias, with disagreements resolved by the PI. Appendix B presents the criteria used to check whether the studies addressed risk of bias. To rank the studies we followed the same approach used by Baird et al. (2013) based on Hombrados and Waddington (2012), who divided studies into three groups: Low, Medium, and High risk of bias. The criteria used are simple and consist of answering YES, UNCLEAR, or NO for key questions in five categories that could bias results:

1. Low Risk of Bias: If 'YES' for at least four issues listed under potential sources of bias.
2. Medium Risk of Bias: If 'YES' for three issues listed under potential sources of bias.
3. High Risk of Bias: If 'YES' for up to two issues listed under potential sources of bias.

The five categories are as follows:

1. *Selection bias and confounding*: This has to do with the identification strategy used in the study. In other words, we checked whether the identification strategy employed in the study convincingly addressed sources of selection bias. This category is classified in each paper as 'NO', 'UNCLEAR' or 'YES' depending on the method of analysis as described in Hombrados and Waddington (2012) and Baird et al. (2013).
2. *Spill-overs and contamination*: Here the main concern is with risk of contamination or imperfect compliance (e.g. when individuals in the control groups get treated). We answered 'YES', 'NO' and 'UNCLEAR' according to Hombrados and Waddington (2012) and Baird et al. (2013).
3. *Outcomes reporting*: The concern with reporting is when a study refers to set of outcomes, yet only presents estimates for those in which the treatment has an impact. Thus we answered 'NO' when 'fishing' is clearly identified, 'UNCLEAR' when fishing cannot be easily identified and 'YES' when results are reported for all outcomes.
4. *Analysis reporting*: If the study credibly shows attribution it was coded as 'YES'. Otherwise, it was coded as 'NO'. If enough detail regarding attribution methods are omitted, the study was coded as 'UNCLEAR'.
5. *Other risks of bias*: Other sources of bias risk could involve the problems of attrition, unreliable instrumental variables, lack of overidentifying tests when the data allows for it (that is, when there are more instruments than endogenous variables), unreliable comparison group used in a DID analysis (no parallel trends before treatment), and/or absent discussion of pre-treatment trends when data allows for such, and so on. We answered 'YES', 'NO' and 'UNCLEAR' according to Hombrados and Waddington (2012) and Baird et al. (2013).

The results for the risk of bias assessment are provided in Section 4.2.

3.3.4. Measures of treatment effect

The treatment variables test the effect of a particular intervention, such as a component of a more comprehensive programme, the effect of a package composed of multiple components (for instance, matching grants programmes can include subsidised credit for technology adoption or upgrade, and some type of technical assistance) or the effect of one programme against other. For cases testing a particular intervention, the test compares the treatment group against (presumably) a pure control whereas for packages the test was made either against a pure control (effect of the package), or against a control group that were offered access to some components of the package (for instance, package against technical assistance), or similarly, comparisons of two separate interventions.

The effect of the interventions were tested on primary and secondary outcomes.

Primary Outcomes:

i. Employment creation
ii. Labour productivity
iii. Firm performance

Secondary Outcomes

i. Access to credit
ii. Exports
iii. Formalisation rate
iv. Innovation
v. Investment
vi. Survival rate

Under 'firm performance' we grouped various outcomes such as sales, sales growth profits, production, value added, assets, and total factor productivity.[24] For 'employment' we grouped paid workers, new workers, workers recruited, and employment rate. 'Innovation' encompasses all types of investments for research and development (R&D), new products, and patents. Our measure of labour productivity grouped studies that reported sales per worker, profit per worker, revenue per worker, and R&D per worker.

To compare effect sizes across studies we used two standardised measures. For binary outcome variables we computed risk ratio (RR), and for continuous variables we used standardised mean differences (SMD). In most of the cases, the standard deviation of the whole sample (pooled standard deviation or 'pooled_sd') was not reported and we therefore made some assumptions in order to compute the SMD and its standard error (SE). For instance, in a couple of studies that reported the effects of different interventions in a long set of intermediary and final outcomes, the descriptive statistics showed the comparison of means between treated and comparison groups, yet only the difference in means and the t-statistic for the difference was noted. The means and standard deviation for each group

[24] A key issue with this aggregation rule is that it groups stock and flow variables. This decision is far from ideal, but we could not come up with a better solution. However, given that few studies report on the same type of outcome (e.g. profits) a decision had to be made to group those outcomes otherwise we would not be able to say much about firms' performance

were not reported. In this case, we made the assumption that the standard deviation is the same in the treatment and control samples and that the covariance of the outcome variable *Y* between both groups is zero.[25]

Although this assumption might be considered plausible in RCTs where the randomisation is at individual level and sample sizes are similar for the treatment and control groups, it is stronger in the context of quasi-experimental studies, particularly where sample size is relatively small and numbers of observations differ sharply between treated and comparison groups. In these cases, we assumed that the standard deviation was the same regardless of the selection process and the sample size in each group.

Whenever studies provided the sample size for the treatment and control groups at the baseline, SMD was computed using the following formulae:

SMD = treatment effect/pooled_sd

including for studies that used DID or matching with DID methods to compute the treatment effects.

For cases where pooled_sd is not available we used the following:

SMD = t*[(Nt+Nc)/Nt*Nc)]

where *t* is the t-statistic of the treatment effect coefficient in the regression model, and Nt and Nc are the number of treated and control observations respectively.[26]

For studies that used small samples we corrected SMD using the following correction (see Waddington et al. 2012):[27]

$SMD_{corrected}$ = SMD*{1 – 3/[4*(Nt + Nc – 2) – 1]}.

We computed RR as follows (see Waddington et al. 2012):

RR = [Mean(Y_C)+ β]/Mean(Y_C),

for $Y_C \neq 0$.

The computation of SE of the effect sizes also requires some assumptions, particularly for RR. As discussed in Waddington et al. (2012), the SE of the error term in the regression model is the preferred option to compute RR (or SMD). In most cases this was not available, thus we used the standard deviation of the outcome among control units at the baseline. We used the following formulae to compute SE(SMD) and SE(RR):

SE(SMD) = [(Nt+Nc)/Nt*Nc) + SMD^2/2*(Nt+Nc)]$^{1/2}$

SE(RR) = σ*{1/Nt*[Mean(Y_C)+ β] + 1/Nc*(Mean(Y_C))},

where σ is the SE of the error in the regression or the standard deviation of the outcome among controls at the baseline when the former is not reported.

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[25] This assumption implies a standard deviation (SD) of Y is given by: SD(Y) = SD(beta_hat)x$(2)^{-0.5}$. See the attached file for the formulae.

[26] The computation of SMD via t-test was obtained by replacing the formulae of the pooled standard deviation by a simple manipulation of the formulae of a t-test for difference in means. See Wilson (2011).

[27] We arbitrarily defined small sample size (n) as less than 100 observations per treatment arm. According to this definition, only three studies in the final list have small samples. Most of the studies use more than 300 observations per treatment arm.

Finally, we made an assumption regarding sample size when this was not provided for each group separately. In cases where only the whole sample was reported, we arbitrarily split the sample equally between treated and control units.

3.3.5. Unit of analysis issues

Most of the studies use data at firm level with the great majority coming from administrative data, such as census data about formal firms or large samples of firms.[28] In one study where the intervention took place at municipal level, authors clustered SE accordingly.

3.3.6. Dealing with dependent effect sizes

For our meta-analyses, the unit of analysis was the study. Nonetheless, several studies performed more than one estimate for the same outcome. For example, in some cases studies report on different interventions, and in others different specifications are tested and therefore there is a need to synthesise several estimates for the same intervention (say, matching grant) and outcomes (say, employment). When a study covered more than one treatment (say, matching grants and technical assistance), and provided estimates for each treatment separately and also for what some studies defined as 'any programme' – in this case the treatment dummy is defined as one if a firm is supported by at least one of the two interventions (either matching grants or technical assistance) and zero otherwise (as in Hong Tan, 2011; López-Acevedo et al., 2011) –, we used the latter estimates to compute overall effect size across different interventions.[29]

When such 'synthetic effect' is not provided, we determined it by taking a simple average of the ES across different interventions per outcome per study (Lipsey and Wilson, 2001). In such cases, the variance of different effect sizes was computed assuming zero covariance because in most cases overlap was limited, that is, firms either participated into a programme or another.[30] Averaging out across standardised ES provided in the same study was necessary to generate one overall ES per outcome per study so we could carry out meta-analysis pooling together different business support programmes.

We estimated synthetic effects in two other cases. First, because the outcome 'firm performance' encompasses different measures such as revenue, sales and profits, and in some cases there estimates are provided for each separately in the same study, we had to compute a synthetic effect for those cases as well. Second, some studies reported average effects in different points in time (e.g. short and medium run effects). We computed the

[28] Administrative data is information that is collected for administrative purposes (such as registrations, transactions, record keeping, or service delivery), and not research.

[29] Because very few studies selected for this review had more than one version, we kept only the latest versions. In most of these cases, the latest version happened to be a refereed paper.

[30] Since variance of (a+b) = var(a) + var(b) + 2 Cov(a,b), assuming Cov(a,b) = 0 is a conservative assumption as it implies lower precision of overall effects unless the covariance is negative. On average, we expect the covariance across studies to be close to zero. We also believe this is a reasonable assumption because according to these studies the number of firms taking up different treatments is not high. Given the restricted overlap between different treatments, we do not believe there is reason to worry about high correlation between firms participating in different interventions. It is important to clarify that by doing this we are not averaging across outcomes, but instead across different ES for a given outcome. In a case where a study reports on multiple treatment arms, and the treatment arms share the same control group, then there might be a dependency issue. However, we do not think that this would substantively affect the findings.

synthetic effect for those cases, averaging the effects across time. In both cases, we assumed covariance equals to zero.[31]

We also performed subgroup analysis looking at some interventions separately. Our review reports on a relatively high number of studies looking at the effect of matching grants on firms' outcomes. In cases where the same study tested the impact of more than one intervention (for example, matching grants and technical assistance), we first averaged the ES for matching grants and technical assistance separately and then took a simple average to obtain an overall ES per outcome per study. As before, this was made to estimate an overall standardized ES across different intervention and again we computed the variance assuming covariance between effect sizes as zero[32]. For interventions covering for at least two studies, standardised ES are reported separately as well as each programme or intervention being analysed– in this case, matching grants and technical assistance.

When sample sizes and treatment effects for subgroups are available, we computed summary effects as a weighted average of the effects sizes. As before, we also computed the variance by assuming covariance between the ES equals zero because this seems to be a plausible assumption for cases where there overlap between subgroups is inexistent or small, that is, where the ES are plausibly independent.

3.3.7. Dealing with missing data

We contacted study authors to ask for missing information, such as descriptive statistics at the baseline (mean, standard deviation and sample size and intra-cluster correlation when it applies), and received quick feedback in most cases. Unfortunately, the quality of data presented varies considerably across studies. In many cases, we had to make assumptions in order to compute SMD, RR, and the SE, for instance[33]:

1. When sample size was not provided for the treatment and control groups separately, we arbitrarily split the sample equally;
2. When pooled standard deviation was not reported we used the standard deviation of the control group to compute SE(SMD) and the t-statistic of the treatment effect coefficient to compute the SMD;
3. When a study used a cluster of firms at municipality level but did not report the number of firms, we used the number of clusters (municipalities) to compute the standardised effects and SE;
4. If there was no available information on the sample size, mean and standard deviation, the study was excluded;

[31] It could be argued that in those cases it would be more appropriate to compute the variance of the synthetic effect assuming covariance equals to 1 given that the individual point estimates come from the same study and sample. However, it can be seen in the previous footnote that assuming Cov(a,b) = 0 will be a conservative assumption if and only if Cov(a,b) < 0.

[32] In other words, we did not combine estimates obtained for firms receiving matching grants only with estimates for firms receiving package of interventions (e.g. matching grants and technical assistance).

[33] To deal with missing data we used Waddington et al. (2012) whenever possible but when no guidance seems to be available we followed similar steps as Baird et al. (2013).

5. In cases where the baseline data was reported for the pooled sample of firms but estimates were provided for sub-groups of firms according to firm size, we split the sample equally among the subgroups and used the same means for subgroups as for the pooled sample.
6. Some studies reported the p-values rather than the SE or t-statistics. To convert p-values into t-statistics, we used a conservative approach and used the lower value of t for cases where the coefficient was statistically significant. For instance, for cases where the p-value was between 0.051 and 0.10 we used a t-statistic of 1.65. For cases where the p-value was between 0.011 and 0.05 we used a t-statistic of 1.96, and for p-values below 0.01 we used a t-statistic of 2.58;
7. Where t-statistics were not available to compute SMD, we computed the pooled standard deviation using the standard deviations of the treatment and control groups and assumed a covariance between outcomes in both groups of 0.5.

3.3.8. Assessment of heterogeneity

We reported forest plot and heterogeneity measures, such as the Chi-squared test for heterogeneity (which captures within-study variance), the I-squared statistic, which we interpret as the proportion of total variance across the observed effects explained by between study variance, and τ^2, an estimate for the variance of the 'true effect size' (see Borenstein et al. 2009).[34]

We also considered the factors explaining heterogeneity through moderator analysis in the meta-regressions that include intervention design parameters as independent variables. To address the likelihood of limited evidence on intervention design, the review collected data on all final and intermediate outcomes, although it was restricted to studies which reported final outcomes, because this enabled us to better analyse the causal chain.

3.3.9. Assessment of reporting biases

To check for publication bias, we obtain the funnel plots using the *metafunnel* and *metabias* commands in Stata as well as Egger's (1997) simple meta-regression test.

3.3.10. Data synthesis

Most of our studies use quasi-experimental methods to estimate the causal effect of a programme. Most estimate the average treatment effect on the treated (ATT), but few estimate the LATE instead. As discussed in Duvendack et al. (2012), there is not a consensus of whether meta-analysis should be performed for quasi-experimental studies. In this review we decided to use meta-analysis to have the 'big picture' of the impact of interventions aimed at SMEs. However, in face of the challenges in practice and decisions made, we argue that these results should be treated with care.

After obtaining the effect sizes and their respective SE per outcome per study, we computed forest plots using the Stata command *metan*. The overall effect was computed assuming a random effects (RE) model. A RE model assumes there might be different ES underlying different studies and interventions, and that the total variance for these should account for between-studies variance (see Borenstein et al. 2009). We also report the confidence interval for each overall estimate and its p-value to assess statistical significance.

[34] Borenstein et al. (2009, p.118) argues that "I-squared is a descriptive statistic and not an estimate for any underlying quantity".

3.3.11. Subgroup analysis and investigation of heterogeneity

We provide synthesised ES for three primary outcomes – (1) firm performance; (2) employment; and (3) labour productivity. For four secondary outcomes – (a) exports, (b) investment, (c) innovation, and (d) formalisation rate – we show the forest plots with individual estimates since we did not systematised review studies looking specifically at those outcomes. This analysis is complemented with meta-regressions (*metareg* command in Stata) controlling for some moderating factors, such as region fixed effects, firm size, and risk of bias.[35] These moderator variables were identified in the study protocol (Gonzalez et al. 2014). We decided to present forest plots only for outcomes that had at least four ES. For outcomes with two or three observations we present random effects estimates using bivariate meta-regression only.

3.3.12. Sensitivity analysis

Given the relatively small number of studies that looked at the impact of the same (or similar) intervention on the same outcomes and the low number of studies with low risk of bias, we conducted the sensitivity analysis dropping studies that stand out visually as clear outliers and, whenever possible, looking at the effects of interventions separately. In the meta-regression analysis we were able to explore moderator factors, including risk of bias and study design, more successfully and provide estimates for individual interventions.[36]

3.4 Deviations from protocol

During the conduct of this review, we made changes to the inclusion criteria and analysis which represent deviations from the Campbell Collaboration protocol (Gonzalez et al. 2014). These are outlined in more detail below.

Five databases included in the protocol were not used in the electronic search for the review. These are: NBER Working Papers, IDEAS/RePEc, BLDS (http://blds.ids.ac.uk), JOLIS (http://jolis.worldbankimflib.org/e-nljolis.htm), and the Youth Employment Network database. Nevertheless, it is worth noting that electronic search was undertaken in the Econlit database that encompass the references from NBER Working Papers, all working papers in IDEAS/RePEc and journals in economics listed in BLDS.
Following this, the study type inclusion criteria to address question iv., and the question on applicability to African countries, originally listed as review question v. in the protocol (and addressed in Appendix C) were amended. To address these questions, we originally intended to include background programme documentation or 'sibling studies' (Snilstveit,

[35] In the Protocol we stated that we would like to include as moderator factors variables such as level of bureaucracy, the sector to which the firms belong, number of years in operation and so on. For variables related to the institutional setting, such as level of bureaucracy, we considered to use country fixed effects to control for issues are plausibly fixed or difficult to change in the short run. However, the small number of studies prevented us from pursuing such strategy. We therefore used dummies for Latin American and African countries. For variables related to firms themselves, we used firm size only. Our analysis also considered use studies' risk of bias as a moderator factor. The result section below discusses the details.

[36] In the present case a study is defined as an outlier if it shows effect sizes 3 times larger the standard deviation of a respective variable distribution. Based on this criterion the three studies that stand out as outliers are Duque and Muñoz (2011), Rand and Torm (2011), and Hong Tan (2011). This is not ideal because the standard deviation is affected by the outliers, but it is more conservative than the rule of thumb of '2 SD from the mean'. For a reference, see Leys et al. (2013).

2012) on the interventions in question provided they: 1) related to the interventions included in the effectiveness review; 2) reported on primary data collected from beneficiaries, programme staff, local authorities and experts; 3) contained analysis of the context and mechanisms that facilitate or negate firm performance impacts; and 4) described their methodology adequately for the purposes of this review (meaning they provided information regarding their sampling strategy, data collection procedures, type of data analysis, methodology, and methods or research techniques). Due to time and resource constraints, we were not able to conduct the search and analysis of these additional documents. Our analysis of the evidence on these two questions thus solely relies on evidence reported in the included quantitative effectiveness studies whose inclusion criteria are outlined above. We acknowledge that this limits the ability of this review to comprehensively address these review questions).[37]

Another deviation from protocol relates to a change in outcome inclusion criteria. The protocol states that studies had to report at least one impact to do with firm-related outcomes, either intermediary or final to be included. However, in the review, we excluded studies that focused only on intermediary outcomes because they do not show whether the intervention improved firms' outputs or not. This decision led to the exclusion of only two studies, however, with no implications for African countries since both looked at the impact of tax simplification policies on the formalisation rates of firms, in Brazil and Bangladesh respectively.

Another deviation from protocol was a change in the definition of SMEs that we used as population inclusion criterion. In the protocol we stated that we would work with firms that have between five and 250 employees and would use that definition during the screening stage. In the review, we expanded this definition to include firms that have between one and 250 employees.[38] We also included studies that do not provide the number of employees but use annual revenue to classify firms as SMEs instead.

It is also important to make clear that the approach to sensitivity analysis followed in this review differs from what is in the protocol. In the protocol we stated we would assess sensitivity of findings to the use of experimental and quasi-experimental in the included studies. The idea would be to check how sensitive the overall effect sizes are after excluding the studies with high risk of bias and whether the impact evaluation method matters for the overall effect size. Unfortunately, the great majority of the studies used quasi-experimental methods and had moderate and high risk of bias. As a result, as mentioned above, given the relatively small number of studies that looked at the impact of the same (or similar) intervention on the same outcomes and the low number of studies with low risk of bias, we conducted these sensitivity analyses in meta-regression. We dropped studies that stood out visually as clear outliers and, whenever possible, looked at the effects of interventions separately.

[37] It is worth noting that qualitative documentation has clear limitations as they are based on subjective judgement and are plagued with selection bias.

[38] As we want to focus on SMEs and not on microenterprises that have a different nature, ideally the study would focus on studies that consider the range between 5-250 employees. We decided to include studies with 1 or more employees because jobs creation stand out one of the main outcomes in those studies and we then considered useful keep them in the final list of studies. That said, the great majority of studies (90 per cent) included in the review assessed programmes with more than 3 employees and 85 per cent have more than 5 employees.

4. Results

4.1 Description of Studies

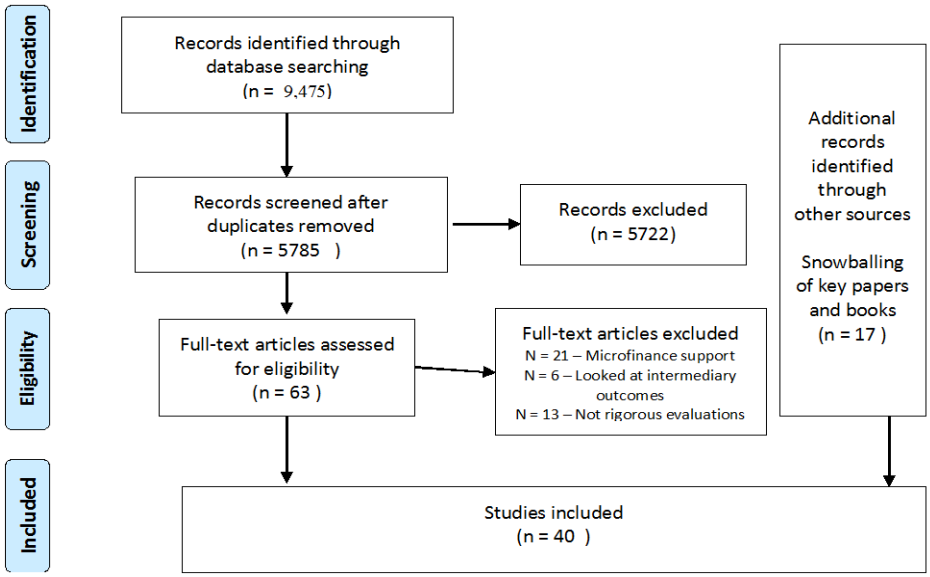
4.1.1. Results of the search

The initial search retrieved 9,475 studies. After dropping duplicates, the list dropped to 5,785 papers. The systematic review approach used detailed search codes to retrieve papers analysing the effect of SME support programmes from the following platforms: ISI, ECONLIT, ABI, PROQUEST and SCOPUS. In addition to searching online platforms, the two PIs snowballed key papers and books and added other 17 studies to the list. Although this review covers only studies that used experimental or quasi-experimental methods, our search strategy did not filter them according to the methods used.

The final list of studies from searching online platform was therefore examined with all filters outlined in the review protocol, which assessed the impact of an SME intervention using rigorous evaluation methods. With that in mind, three research assistants double-screened abstracts of 5,785 studies. A preliminary final list had 63 studies. It was noted that the great majority either did not use quantitative methods to assess the impact of an intervention, did not use a rigorous method to address selection problems, or looked at interventions targeting micro-entrepreneurs (21 cases). The PIs decided to exclude six studies that looked exclusively at intermediate outcomes – such as formalisation rate and number of new firms – and different versions of the same study and unpublished versions of published studies.

In the end, the team came up with a list of 40 studies (23 from the search in the online platforms and 17 from snowballing). Figure 2 illustrates this procedure. For the meta-analysis we had to exclude four studies because we were unable to compute a standardised effect size and/or its standard error. The empirical analysis therefore included 36 studies and 72 ES per intervention-outcome combination. The large number of ES is due to the fact that a few studies tested the impact of several interventions together and then separately on the same outcomes, and some randomised controlled trials tested the effect of more than one treatment arm.

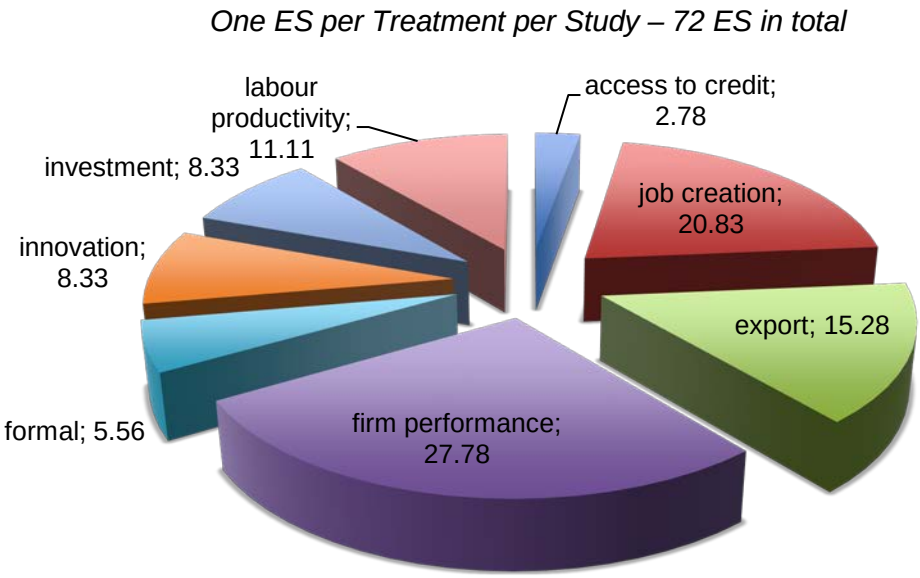
Figure 2: PRISMA flow diagram showing study selection



4.1.2. Included studies

This review investigates the impact of a diverse array of SME support, as discussed in Section 1.3. The types of support include: matching grants/credit, innovation support, support to exports, tax simplification, training, and local production systems. Most of the papers included in this review measured the impact of a SME support intervention by more than one outcome at firm and employee levels (Figure 3). This section presents a brief analysis of each paper included in this review to provide qualitative discussion of specific results by each type of intervention.

Figure 3: Percentage of Reported Outcomes

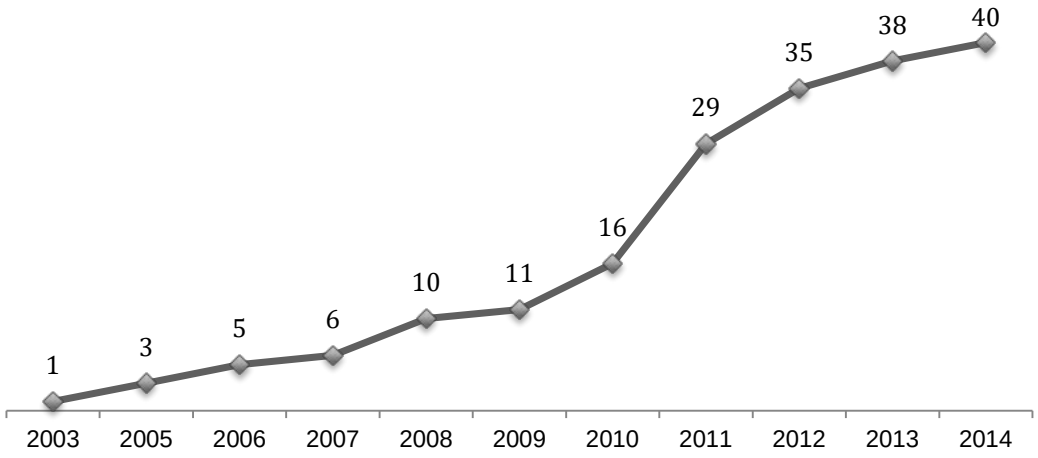


According to Figure 3, five outcomes stand out: firm performance (27.8 per cent of the ES), employment (20.1 per cent of the ES), exports (15.3 per cent of ES), labour productivity (11.1 per cent of the ES), and investment and innovation (8.3 per cent of the ES each). The firm performance outcome groups the following individual variables: sales, sales growth profits, production, value added, assets, and total factor productivity. Because few studies report on the same type of outcome (e.g. profits) we took the decision to group these outcomes, which arguably measure similar constructs, together to maximise statistical power.[39]

Figure 4 shows the cumulative number of studies produced between 2003 and 2014.

[39] A key issue with this aggregation rule is that it groups stock and flow variables.

Figure 4: Cumulative number of studies per year



Between 2003 and 2010 there were only 16 studies using experimental or quasi-experimental techniques to assess the impact of different business support to SMEs. Between 2011 and 2014 that number more than doubled. As noted in Figure 5, the evidence comes from 18 countries, most of which are in the Latin American region and five are in African countries.

Figure 5: Number of studies per country

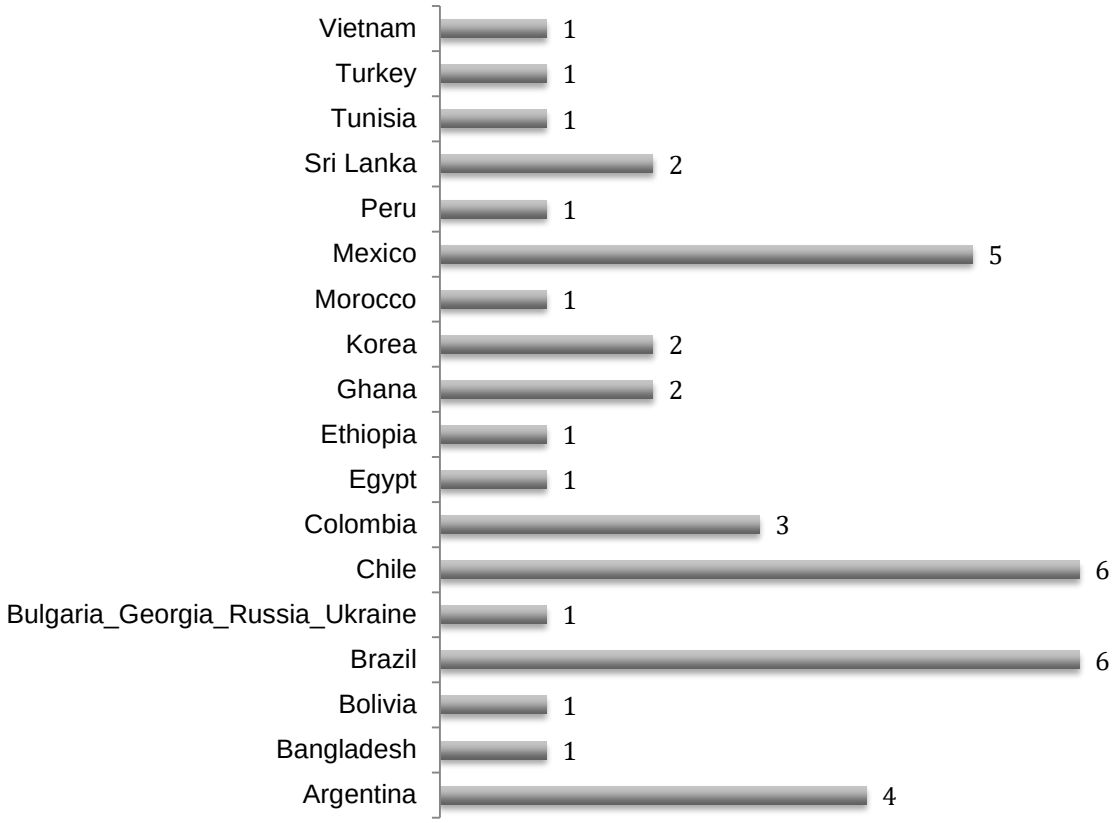


Table 2 summarises the findings for each study (which are presented in detail in Appendix D). Most of studies use quasi-experimental methods and seven studies use experimental design (Atkin et al., 2014; Bruhn et al., 2012; de Giorgi and Rahman, 2013; Karlan et al., 2014; de Mel et al., 2012; McKenzie and Sakho, 2007), including one which was excluded from the meta-analysis because we were unable to calculate the effect size (Mano et al., 2012). The most commonly evaluated intervention category was matching grants (8 studies) and export promotion (8 studies), followed by innovation programmes (7 studies), tax simplification (6 studies) and training interventions (6 studies). Some of the less researched interventions include access to credit (4 studies), local productive systems (3 studies) and formalisation (3 studies). Two studies report on clusters of interventions. Fifteen studies focused on the manufacturing sector, while thirteen included all sectors and the remaining twelve focused on other sectors (agriculture, construction, textile, tailoring) or a combination of sectors. The studies display a large range of sample sizes; as low as 167 total observations from a managerial training programme in Ghana (Mano et al., 2012), to over 1.6 million observations from data assessing business registration regulations in Mexico (Bruhn, 2011).

Table 2: Overview of characteristics of included studies

Authors	Type of intervention	Country	Sample Size	Study Design	Firm Size	Industry Sector	Firm Performance	Employment	Labour Productivity	Exports	Innovation	R&D Investment	Formalisation	Other
Bruhn et al. (2012)	Training	Mexico	150 treated firms	RCT	Up to 250 employees	Manufacturing, Commerce and Services	✓							
Rijkers et al. (2010)	Matching grant	Ethiopia	240 firms total	IV regressions with cross section data	Fewer than 50 employees, capital stock worth less than 55,000 USD.	Construction	✓							✓
Lopez-Acevedo and Tinajero (2011)	Innovation, local productive system and technical assistance.	Mexico	30,199 total	PSM with DID estimations	Up to 250 employees	All sectors	✓	✓		✓				
Benavente et al. (2007)	Innovation (matching grant)	Chile	638 firms total	DID and PSM methods	Definition of SME used by CORFO	Manufacturing, Agriculture, Fishery, Information and Communications Technologies	✓	✓	✓	✓	✓	✓		

Chudnovsky et al. (2006)	Innovation (matching grant)	Argentina	414 firms total	PSM and DID estimator	Average size of participants was 34 employees.	Manufacturing				✓		
Karlan et al. (2014)	Matching grant and training	Ghana	160 small urban tailors	Randomisation with OLS.	Fewer than 5 employees	Tailoring industry	✓	✓		✓	✓	
Gourdon et□al. (2011	□Export promotion	Tunisia	420 firms total	DID estimator with matching	Minimum US$140,000 in sales for manufacturing Minimum US$70,000 in sales for services firms	Manufacturing, services	✓	✓	✓			
Weiss et al. (2011)	Export promotion	Chile	73 treated □firms	DID with matching estimator	SMEs according to Chilean size definition.	Mainly manufacturing, agriculture and forestry			✓			
Atkin et al. (2014)	Export	Egypt	405 firms total	RCT	Most between 1 and 4 employees.	Textile	✓		✓			
Castillo et al. (2010)	Export (matching grant)	Argentina	Approx. 570,000 firms total	PSM with DID estimations	Up to 50 employees	Manufacturing, services, retail, and primary sectors.		✓	✓			✓
Martincus et al. (2012)	Export promotion	Argentina	455 firms total	DID estimator with matching	Up to 200 employees	All sectors			✓			
Martincus and Carballo (2008)	Export promotion	Peru	709 firms received support	DID estimator with matching	Up to 200 employees	All sectors			✓			

Martincus and Carballo (2010)	Export promotion	Colombia	2752 firms received support	DID estimator with matching	Up to 200 employees	All sectors			✓		
Martincus and Carballo (2010)	Export promotion	Chile	1796 firms received support	Semi-parametric quintile treatment effect estimation	Based on the distribution of total export to define the quantiles and thus different firm size based on this measure.	All sectors			✓		
De Giorgi and Rahman (2013)	Tax simplification	Bangladesh	1500 treated firm	RCT	Average of 22 workers (treatment), 26 workers (control)	All sectors				✓	
Rand and Torm (2012)	Matching grant	Vietnam	1,366 firms total	Matched DID strategy.	Up to 300 employees	Manufacturing	✓				✓
Fajnzylber et al (2011)	Tax □simplification	Brazil	Over 40000 entrepreneurs	Weighted Two-Stage Least Squares (W2SLS) and RD design	Revenue up to R$720,0000	All sectors	✓	✓		✓	✓
McKenzie and Sakho (2007)	Tax Simplification	Bolivia	469 firms total	IV regressions with cross section data	Fewer than 20 workers.	grocery stores, restaurants and food sales, manufacturing of clothes and furniture	✓				

Corseuil and de Moura (2011)	Tax simplification	Brazil	Approximately 3000 observations.	Discontinuity Fuzzy Regression Design	Annual gross revenue up to R$720.000	Manufacturing		✓			
Kalume et al. (2013)	Tax simplification	Brazil	46,742 firms total	DID estimators	Up to R$2,400,000	All sectors				✓	
Aivazian and Santor (2008)	Export	Sri Lanka	304 firms total	PSM and OLS estimations.	Median 16 employees	Manufacturing, mining, construction, agriculture, fish processing, industrial services, horticulture, commercial transport, animal husbandry.	✓				
Oh et al. (2008)	Credit (matching grant)	Korea	87□4 treated □firms	PSM with DID	Fewer than 300 employees	Manufacturing	✓	✓	✓		✓
Cassano et al. (2013)	Access to credit (matching grant)	Bulgaria, Georgia, Russia and Ukraine	824 treated firms	Difference in logs method	Fewer than 250 employees.	All □sectors	✓	✓			
Machado et al. (2011)	Access to credit (matching grant)	Brazil	22.572 firms total	PSM with DID estimator	Small: up to 50 employees Medium/large: 50 or more employees	All sectors		✓			

Arraiz et al. (2013)	Matching grant	Chile	3964 firms total	PSM with fixed effect estimations	Annual sales up to 100,000 UF (Unidad de Fomento)	Agribusiness	✓	✓		✓		✓
Benavente and Crespi (2003)	Matching grant	Chile	251 firms total	PSM and DID estimator.	Definition of SME used by CORFO	Manufacturing						
Lee and Cin (2010)	Innovation (matching grant)	Korea	34, 782 firms total	DID and two-stage least-squares estimators with panel data	SMEs treated have on average 80 workers.	Manufacturing					✓	
De Negri et al. (2006	Innovation (R&D)	Brazil	457 treated firms	DID with PSM and a two-step selection mode	Definition of SME used by the innovation agency.	Manufacturing					✓	
Sanguinetti (2005)	Innovation (R&D)	Argentina	639 firms total	PSM with DID	FONTAR programme focuses o SMEs according to official definition.	Manufacturing				✓	✓	
Özçelik and Taymaz (2007)	Innovation (R&D)	Turkey	Approximately 11,000 establishments	Matching DID estimation	Average firm size is 44 employees.	Manufacturing					✓	
Crespi et al. (2011)	Innovation	Colombia	10,470 observations.	PSM and LSDV	Small firms that participated had on average 128 employees.	Manufacturing		✓	✓		✓	✓

Mano et al. (2012)	Training	Ghana	167 firms total	RCT	Micro and small firms member of the Ghana National Association of Garages (GNAG).	Manufacturing	✓			
Lopez-Acevedo and Tan (2005)	Export	Mexico	1233 firms total	PSM with DID estimations.	Up to 250 employees	Manufacturing			✓	
Jaramillo and Diaz (2011)	Innovation and training.	Peru	414 firms treated	PSM with DID estimations	two to 50 workers	All sectors, mainly shoe manufacturing.	✓			
Sekkat (2010)	Training	Morocco	375 observations	Panel data with IV	Fewer than 100 employees.	Manufacturing			✓	
Bruhn (2011)	Tax simplification	Mexico	1,636,225 observations	Panel data estimation	The programme focuses on small informal firms.	All sectors	✓	✓		✓
Kaplan et al. (2011)	Tax simplification	Mexico	31 municipalities	Triple difference panel regressions.	Small firms. System of Fast Opening of Firms" (SARE) for small firms.	production of metal and wooden furniture, freezing of fruits and vegetables, production of clothes and textiles, drugstores and small supermarkets, video stores and		✓		

						DVD rentals, real estate services,							
De Mel et al. (2012)	Tax simplification	Sri Lanka	520 firms total	RCT	Between 1 and 14 employees	range of industries including services, manufacturing	✓	✓				✓	✓
Duque and Munoz (2011)	Matching grant	Colombia	1282 SMEs total	PSM with DID estimations	Up to 200 employees, or up to 30,000 legal monthly minimum wages in total assets	All sectors, mainly manufacturing	✓	✓		✓	✓		✓
Tan (2011)	Technical assistance, LPS (cluster), matching grants	Chile	603 establishments total	PSM with DID □estimations	Up to 250 employees	Manufacturing	✓		✓	✓			✓

Note: The table lists 40 studies, but for four studies – Benavente et al. (2007), Corseuil and Moura (2011), Kalume et al. (2013) and Mano et al. (2012) – we were unable to compute either the standardised effect sizes or the adjusted standard errors and therefore could not include them in the meta-analysis.

4.1.3. Excluded studies

The papers selected from those retrieved by the search codes were carefully screened based on their abstracts and selected to be included in the systematic review. The full revision of these selected papers deemed 21 studies ineligible as they looked at interventions targeting microentreprises, which are not included in our review, for example: De Mel et al. (2009, 2010, 2012, 2013a, 2013b), Fafchamps et al. (2011), Valdivia (2011) and Stewart et al. (2012). The review excluded studies that looked at the impact of an intervention only on intermediary outcomes (such as formalisation rate): Monteiro and Assuncao (JDE, 2012) and Andrade, Bruhn and McKenzie (2013). Studies that looked at impact of programmes that we did not consider a public intervention targeted exclusively to SMEs were dropped (Bah et al., 2011). Studies that looked at the impact of export zones, such as Cirera et al. (2011) and Cirera et al. (2013), were dropped. Finally, studies (RCTs) that did not clearly test a public policy and that was conducted with rural firms only such as Giné and Mansuri (2011) were not included in the review.

4.2 Risk of Bias in Included Studies

4.2.1. Results of the risk of bias assessment

The assessment of the risk of bias is important to identify issues that might influence the estimated coefficient of studies and thus might have an impact on the results of this systematic review. This report uses the risk of bias tool, based on Hombrados and Waddington (2012), as described in section 3.3 to rank the studies and check whether they addressed the risk of bias. Additionally, we followed the strategy used by Baird et al. (2013) and provide an additional aggregated classification of risk of bias.

Table 3 presents the summary of aggregated results from the risk of bias assessment. The risk of bias results for each paper is presented in Appendix C.

1. *Selection bias and confounders:* Only 2 out of the 40 reports (5.0 per cent) completely address this issue. This is partly due to the fact that for some categories of quasi-experimental design (PSM, OLS, DID) the best possible ranking is "unclear" for selection bias and confounders, and most of the papers' approaches correspond to these methodologies.
2. *Spill-overs, cross-overs and contamination*: Seven reports (17.5 per cent) did not adequately address this issue. Moreover, since most of the programmes were implemented at the national or city level, and many others in one specific sector, some sort of contamination was always possible. Yet this issue was not sufficiently addressed, not even in the experimental approaches. This was especially difficult in quasi-experimental approaches, since data were collected previously by external institutions without taking into account possible spill-over effects within sectors or communities. Moreover, some papers report the existence of other simultaneous interventions likely to affect the outcomes. Since in this kind of research it is not common to separate participants and non-participants geographically and/or socially, the classification of the papers for the spill-overs, cross-overs and contamination most of the times fall into “unclear”.
3. *Outcome reporting*: All but three papers adequately address the issue of outcome reporting, and there is no evidence of selective reporting.

4. *Analysis reporting*: Twenty-two papers take an appropriate approach when conducting the analysis. The main reason a report was deemed of higher risk of bias for this category was the failure to report the necessary tests for quasi-experimental methods, especially Rosenbaum test for propensity score matching and Hausmann test for exogeneity in the case of instrumental variables.
5. *Other risks of bias:* The reasons why other risks of bias show up are heterogeneous, including violation of orthogonality of instruments, incentives of surveyed firms to overstate outcomes, data on the baseline collected retrospectively, among others.

Following Baird et al. (2013), using the above categories, we categorise the reports as low, medium or high risk of bias in Part B of Table 3. Only five per cent of the reports (2 studies) are categorized as low risk, 33 per cent (13 studies) as medium risk and 65 per cent (25 studies) as high risk. Since most of the reports presented quasi-experimental designs, it was especially challenging to find those that discuss all relevant features of the approach. This was especially true for the PSM methods, for which the most challenging requirement was the Rosenbaum test for hidden bias (which was not presented by any of the papers), followed by the lack of a test for equality in means of covariates between treatment and control groups after matching.

The overall results indicate that there is a huge heterogeneity in the potential for bias but most papers are classified as medium risk of bias. This result is hugely influenced by the assessment of the spill-overs, cross-overs and contamination category of the risk of bias tool. From the 40 reviewed, given the characteristics of SME support, most studies were unable to ensure that there is no spill-over or contamination of the treatment. As all SMEs are part of the whole economy in a particular region, general equilibrium effects are likely. The individual firm-level treatment is likely to produce spill-overs within the economy which are not controlled for.

Table 3: Summary of Risk of Bias in Included Studies

Part A	**Selection Bias and Confounding**	**Spill-overs, cross-over and contamination**	**Outcome reporting**	**Analysis reporting**	**Other Risks**
Low risk	2	1	37	22	26
Unclear	16	32	0	16	0
High risk	22	7	3	2	14
Part B	**Low**	**Medium**	**High**	**Total**	
Overall	2	13	25	40	
	5%	33%	65%	100%	

Note: Part A of the table reports counts and Part B reports the counts in the first row followed by the respective percentage in the second row.

4.3 Synthesis of Results

4.3.1. Quantitative synthesis[40]

This section discusses the meta-analysis and meta-regression estimates. Forest plots are provided for interventions investigated in at least 4 studies. We complement this analysis discussing meta-regression estimates for individual interventions.[41] Because the business support interventions analysed in this review were envisaged to improve firms' indicators, positive average effect sizes therefore represents positive effects. Thus, average overall ES that lies on the right hand side of a zero solid line in the forest plots indicates positive effect on both primary and secondary outcomes.

Primary Outcomes

1. Firm performance

We found that several studies looked at a myriad of outcomes related to firm performance such as profits, revenues, sales, assets, and so on. We thus grouped them under an outcome named 'firm performance' to be able to say something about the impact of different interventions on firms.

Our review found 20 ES related to firm performance (see Figure 6 below) across different interventions. Although the interventions may consider different group of firms (e.g. sector and size) and aim to tackle different market failures, we believe that providing an overall picture of the interventions covered in the review can still be relevant for high-level policy making.[42] **Figure 6** reports the standardised ES (SMD) of each study and the overall average across interventions.

On average, interventions aimed at improving firm performance had a positive effect of 0.15 standard deviations. The effect is statistically significant at 1 per cent (p-value = 0.000) with a 95 per cent confidence interval (95% CI) of (0.08, 0.22). It is worth noting that most of the estimates (10 out of 20) come from interventions that took place in Latin American countries. Five estimates are from African countries. Also interesting is the relatively small heterogeneity between studies. As indicated by the homogeneity test statistics (I-squared = 92.8%, tau-squared = 0.0196) there is an indication of high heterogeneity across studies. This measure captures the degree of inconsistency in the studies' results (Higgins et al. 2003).

Since our review included 13 studies that examined the impact of matching grants programmes and nine that investigated the impact of export promotion programmes, our data allows us to look at the effect of these two interventions on firms' performance in isolation. **Figure 7** shows that the effect of MG on firm performance is similar but not significant in statistical terms (SMD = 0.13, 95% CI of (-0.04, 0.30). The assessment of homogeneity suggest a large degree of heterogeneity across studies (I-squared = 96.5%, tau-squared = 0.064). However, as discussed below, the effect becomes identical to that

[40] The forest plots are available in a separate file.

[41] We are able to perform meta-analysis for final outcomes when we pool the interventions and when we run the analysis for each programme individually.

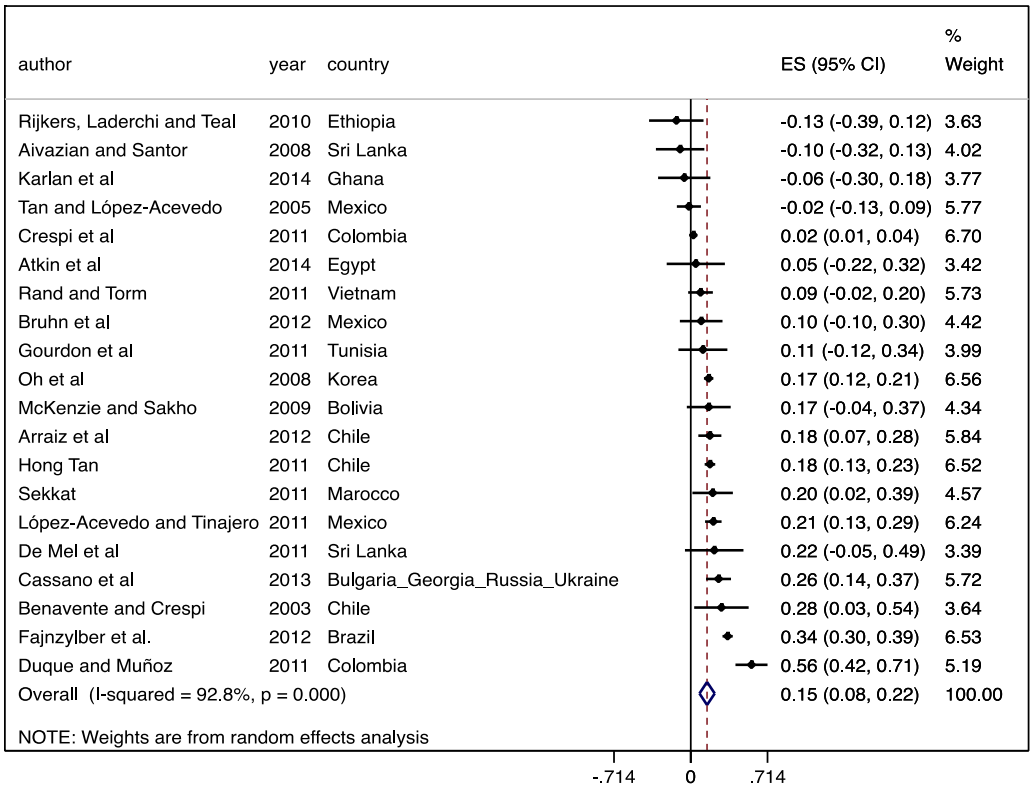
[42] The decision of reporting overall effect for different interventions was also made, for instance, in a Systematic Review that covered the impact of interventions aimed at improving children's enrollment in primary and secondary school. See Petrosino et al. (2012).

obtained with all interventions pooled together once we drop one outlier study from the analysis. For support to exports programmes, we found zero effect on firm performance with the 95 per cent CI of (-0.08, 0.09) as shown in **Figure 8**. The assessment of homogeneity suggests that there is no between-study heterogeneity (I-squared = 0.0%, tau-squared = 0.000).

The impact of MG on firm performance is interesting and could have at least two possible interpretations. First, it could be argued that business support of any sort works as subsidies ('free money') that end up favouring firms that would actually be able to carry on without any injection of public resources, i.e. a *picking the winners* argument. On the other hand, one could take this result as an indication that SME interventions of any sort are key to SMEs needing a 'nudge' to increase performance (or survive). In order to shed light on these two competing views, in the section below we look at the effect of MG on secondary outcomes, such as investment. In the meta-regression analysis we also approach this issue indirectly by looking at whether firm size influences the result.

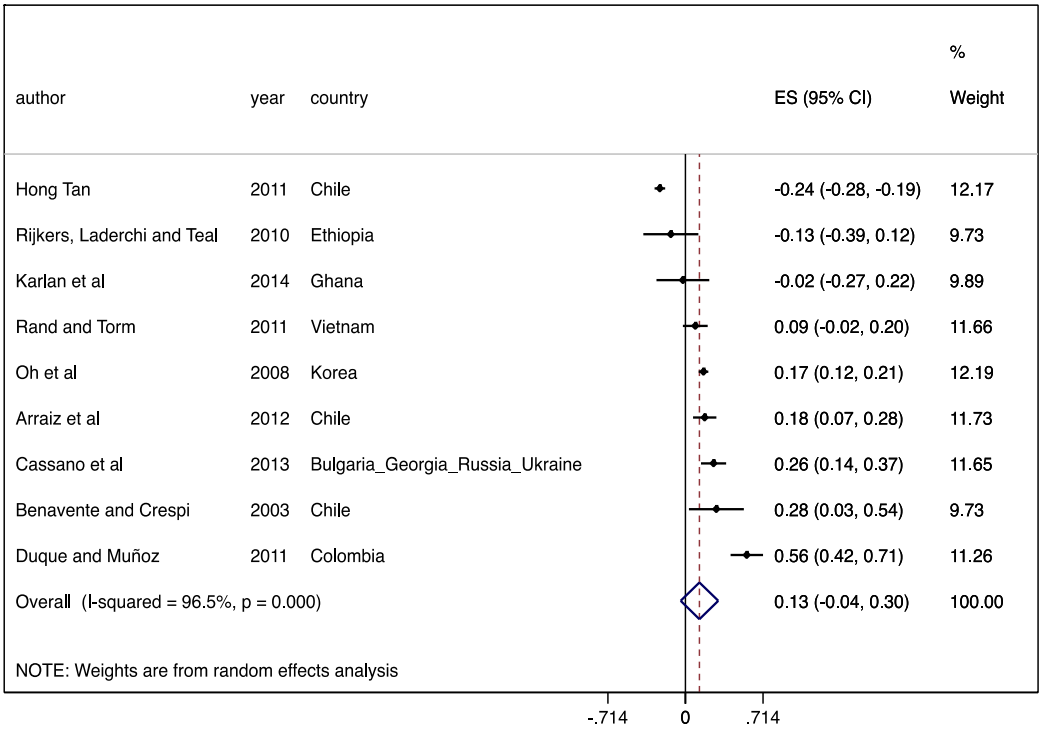
As mentioned in section 5.4, some studies were not included in the meta-analysis as we were unable to compute either the standardised effect sizes or the adjusted standard errors. Despite the fact that standardised effect sizes or the adjusted standard errors could not be calculated, these studies also provided results on the impact of SME support programmes on firm performance and indicated the same effect of SME support programmes on firm performance as suggested in Figure 6. Mano et al. (2012) studies the impact of business consulting in the form of basic managerial training by doing an RCT in Suame Magazine, an industrial area consisting of metal workshops and enterprises in Kumasi, the second largest city in Ghana. The data collected comprised 167 firms, 60 in the control group (of which 53 were randomly selected; the other seven had been promised a place in the programme) between November 2007 and November 2008. The study collected data related to outcomes such as sales revenue, value added and gross profit. The results suggest that participation in the programme improves gross profit and value added of the firms that participated in the experiment. Another study not included in the meta-analysis and provide results on firm performance is Benavente et al. (2007). They analyse the effectiveness of the Chilean Technology Development Fund (TDF), the FONTEC programme. The authors adopt difference-in-differences and results suggest that the programme found a positive impact on sales.

Figure 6: Forest Plot – All interventions: Firm Performance



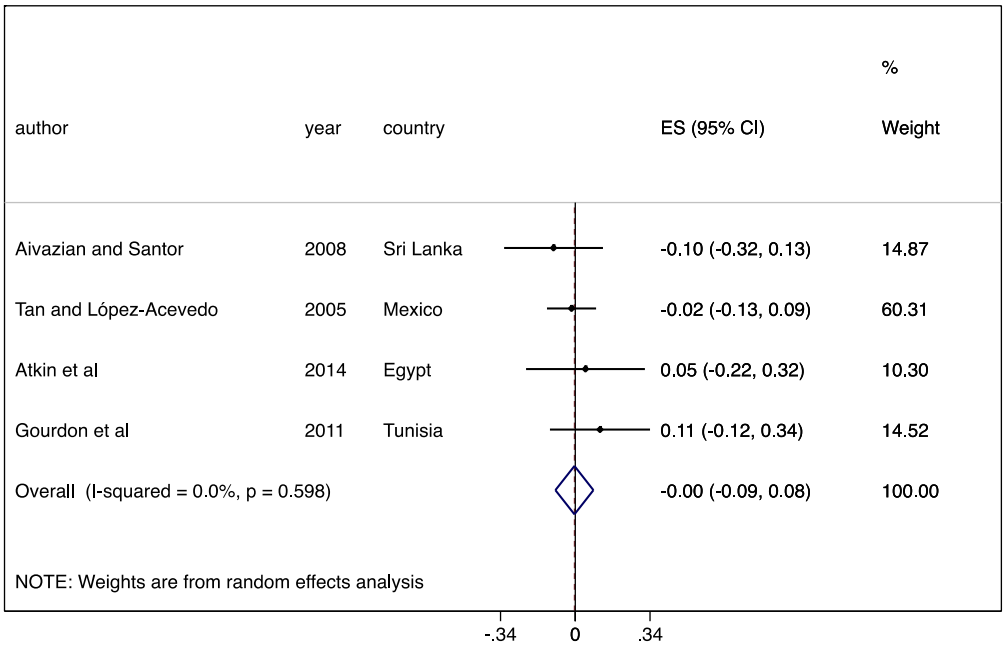
Note: Heterogeneity chi-squared = 265.73, p = 0.000. I-squared = 92.8%. Tau-squared = 0.0196. Test of ES=0: z = 4.18, p=0.000.

Figure 7: Forest Plot – Matching Grants: Firm Performance



Note: Heterogeneity chi-squared = 226.63, p = 0.000. I-squared = 96.5%. Tau-squared = 0.064. Test of ES=0: z = 1.46, p=0.14.

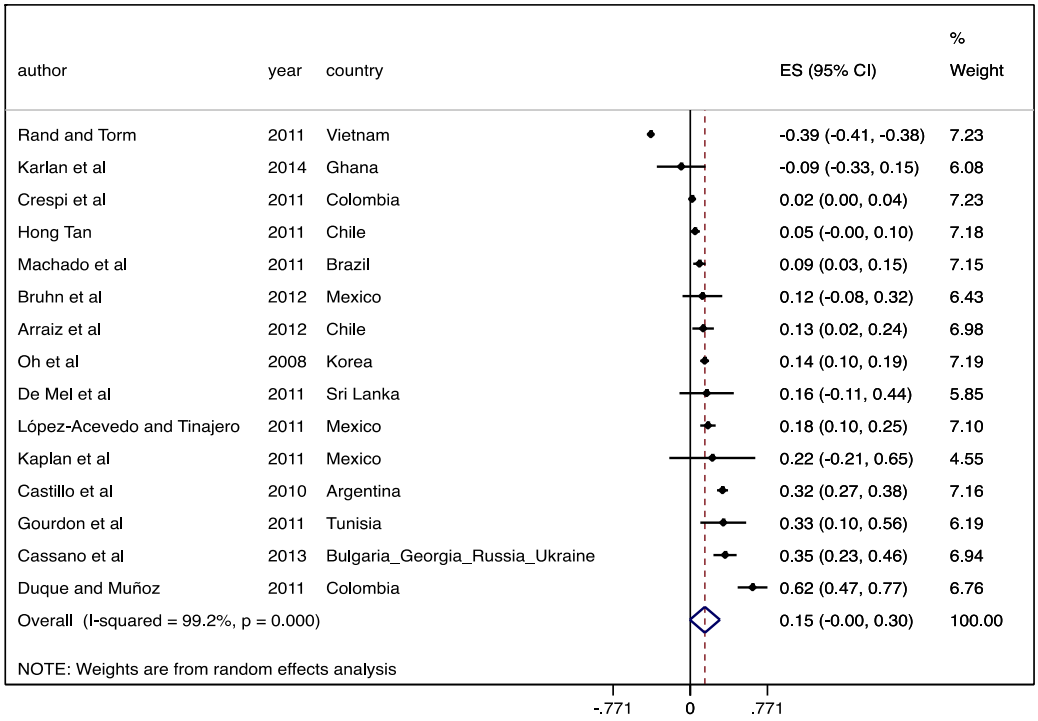
Figure 8: Forest Plot –Support to export programmes: Firm Performance



Note: Heterogeneity chi-squared = 1.88, p = 0.598. I-squared = 0.0%. Tau-squared = 0.0000. Test of ES=0: z = 0.09, p=0.93.***2. Employment***

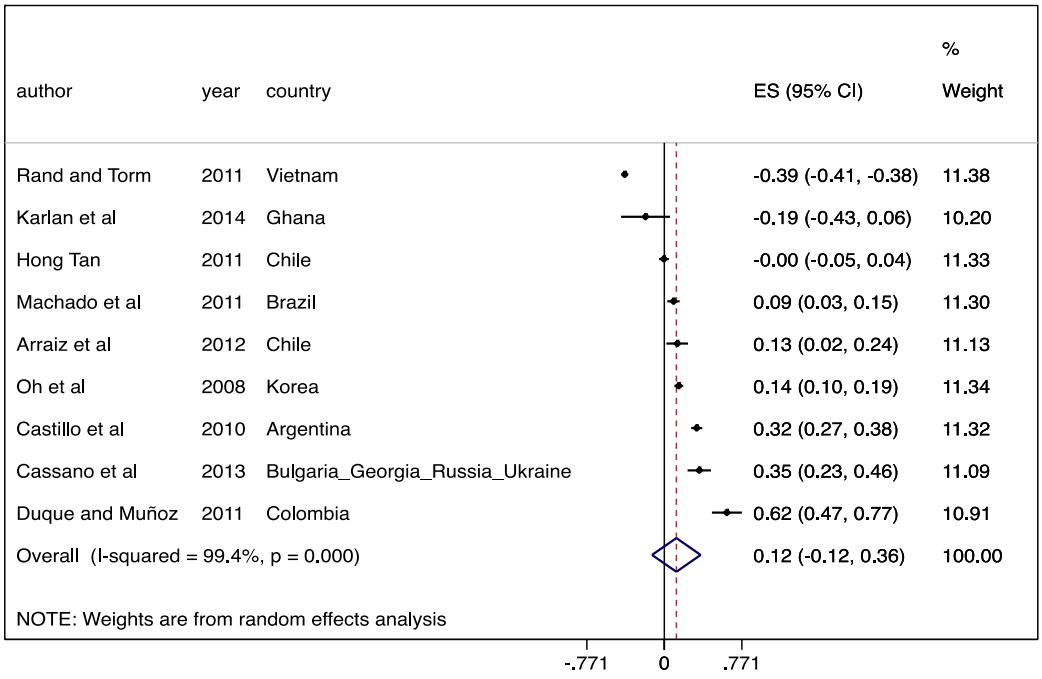
The meta-analysis for employment outcomes included 15 effect sizes (see **Figure 9** below). Although most of the evidence comes from Latin America, the figure suggests that different types of business support for SMEs help create jobs in almost all the countries considered. On average, programmes targeted at SMEs tend to help with employment creation. The overall effect is equal to 0.15 standard deviations (average SMD = 0.15). The effect is significant at 6 per cent (p-value = 0.057) with 95 per cent CI of (-0.00, 0.30). The values of I-squared statistic (99.2%) and tau-squared (0.081), though, indicates a high estimated between-study variability. This result is consistent with the common-sense view that SMEs may be an important source for job creation but the study also highlights that there is considerable variation in the effectiveness of different SME-support programmes on employment generation.

Figure 9: Forest Plot – All interventions: Employment Creation



Note: Heterogeneity chi-squared = 1861.96, p = 0.000. I-squared = 99.2%. Tau-squared = 0.081. Test of ES=0: z = 1.91, p=0.057.When we look at the effect of matching grants exclusively, we find a positive effect size of 0.12 SD but very imprecisely measured (95% CI = -0.12, 0.36) (see **Figure 10)**. The reduction in the number of studies and high variability between the point estimates are captured by the Tau-squared (0.133) and I-squared statistics (99.4%).

Figure 10: Forest Plot – Matching grants: Employment Creation



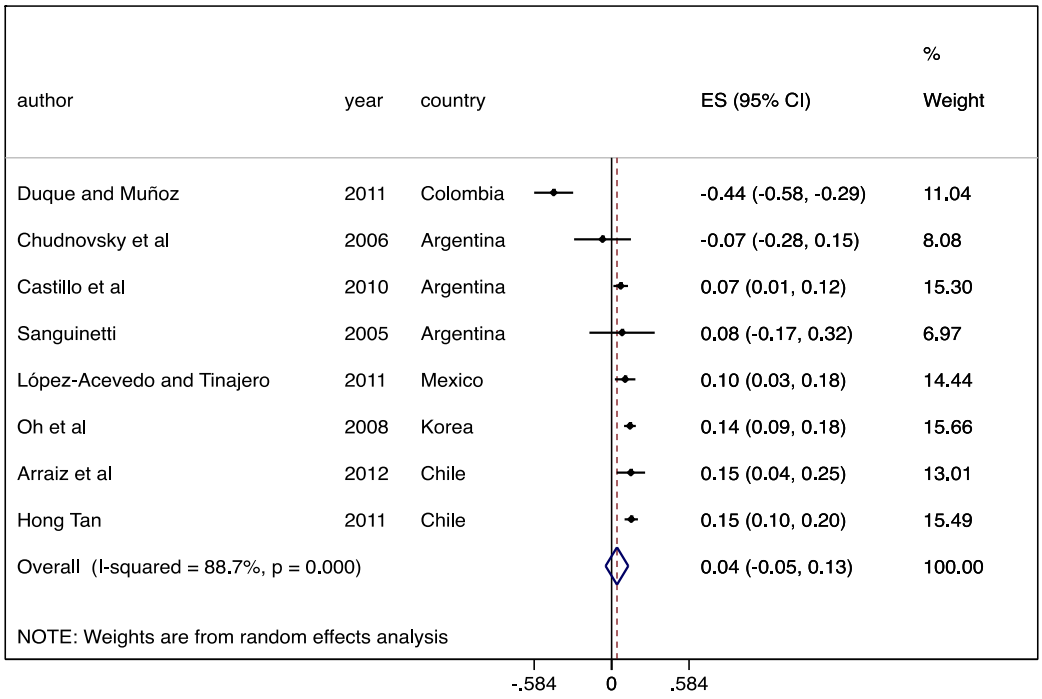
Note: Heterogeneity chi-squared = 1409.31, p = 0.000. I-squared = 99.4%. Tau-squared = 0.133. Test of ES=0: z = 0.97, p=0.33.

Some of the studies that were not included in the meta-analysis because we were unable to compute either the standardised effect sizes or the adjusted standard errors present results on employment. Benavente et al. (2007) that uses difference-in-differences to analyse the FONTEC programme found a positive impact on employment. Corseuil and de Moura (2011) uses regression discontinuity design to assess the effect of the introduction of the SIMPLES legislation on manufacturing employment generation and the results show that SIMPLES has a positive impact on the creation of new manufacturing jobs in Brazil. Similarly, Kalume et al. (2013) evaluate the impact of Super Simples Nacional using the difference-in-difference estimator, the results indicate that the programme contributed to the definitive restart of activities for the inactive ones or the opening of new firms, thus generating jobs.

3. Labour productivity

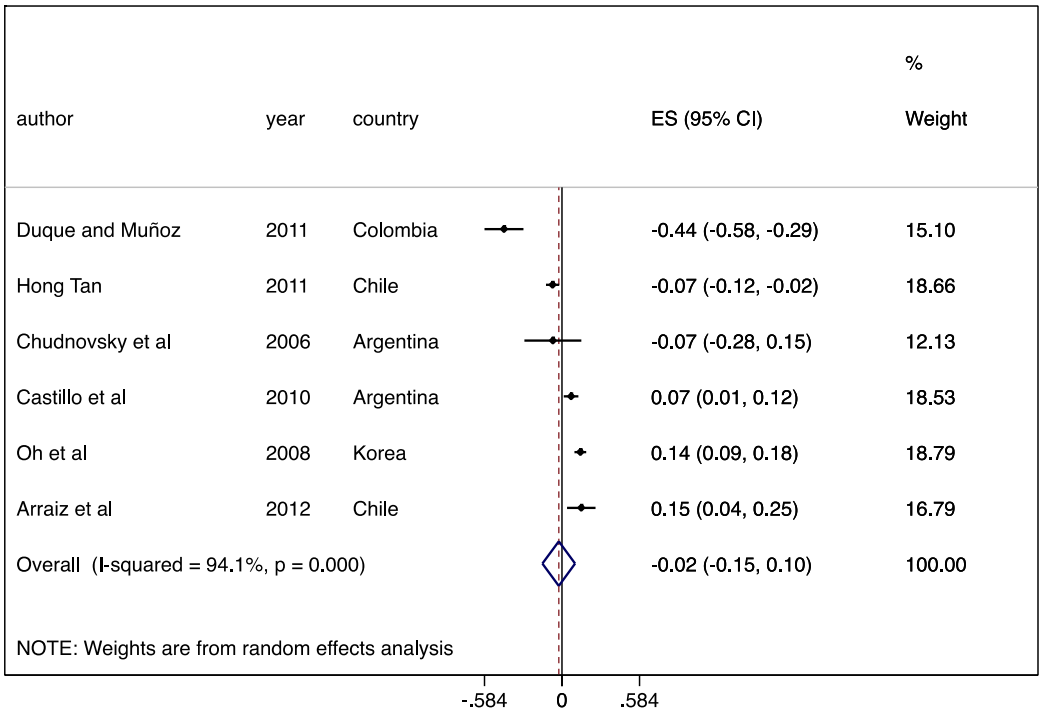
The meta-analysis for labour productivity includes eight effect sizes. The evidence comes almost exclusively from countries in Latin America (see **Figure 11**). The overall effect size is 0.04, but it is statistically insignificant (p-value = 0.36) with a CI of (-0.05, 0.13). The assessment of homogeneity indicates a large degree of between-study variability (I-squared statistic = 88.7%, tau-squared = 0.0117), indicating that the pooled effect estimate needs to be interpreted with caution. The meta-analysis includes one study with a negative statistically significant effect, two studies with statistically insignificant effects and 5 studies with positive statistically significant effects indicating the potential for business support services to be both successful and to have potentially adverse effects on labour productivity. When we look at the effect of matching grants only we find a small negative effect that is not statistically different from zero (-0.02 SD, 95% CI = -0.15, 0.10) – see **Figure 12**. Again, the assessment of homogeneity indicates a large degree of between-study variability (I-squared = 94.1%, tau-squared = 0.02).

Figure 11: Forest Plot – All interventions: Labour Productivity



Note: Heterogeneity chi-squared = 62.27, p = 0.000. I-squared = 88.7%. Tau-squared = 0.0117. Test of ES=0: z = 0.92, p=0.36

Figure 12: Forest Plot – Matching grants: Labour Productivity



Note: Heterogeneity chi-squared = 84.39, p = 0.000. I-squared = 94.1%. Tau-squared = 0.02. Test of ES=0: z = 0.39, p=0.67.

Secondary Outcomes

I. Exports

Figure 13 shows the distribution of SMDs of interventions that, among other things, aimed to help firms access external markets (exports). These interventions include export promotion programmes as well as matching grants that were envisaged to help firms access external markets. Most of the studies show a small and statistically insignificant effect, ranging from SMD = 0.02 (95% CI = 0.00, o.04) to SMD = 0.037 (95% CI = -0.15, 0.89), with an outlier evaluation of a programme in Chile reporting an SMD of 4.4 (95% CI = 4.3, 4.4). **Figure 14** shows that the effects of programmes conceived with the purpose to spur exports. Again, there are some positive but very small non-statistically significant effects on exports, ranging from 0.02 (95% CI = 0.00, 0.04) to o.o37 (95% CI - -0.015, 0.89).

Figure 13: Forest Plot – All interventions: Exports

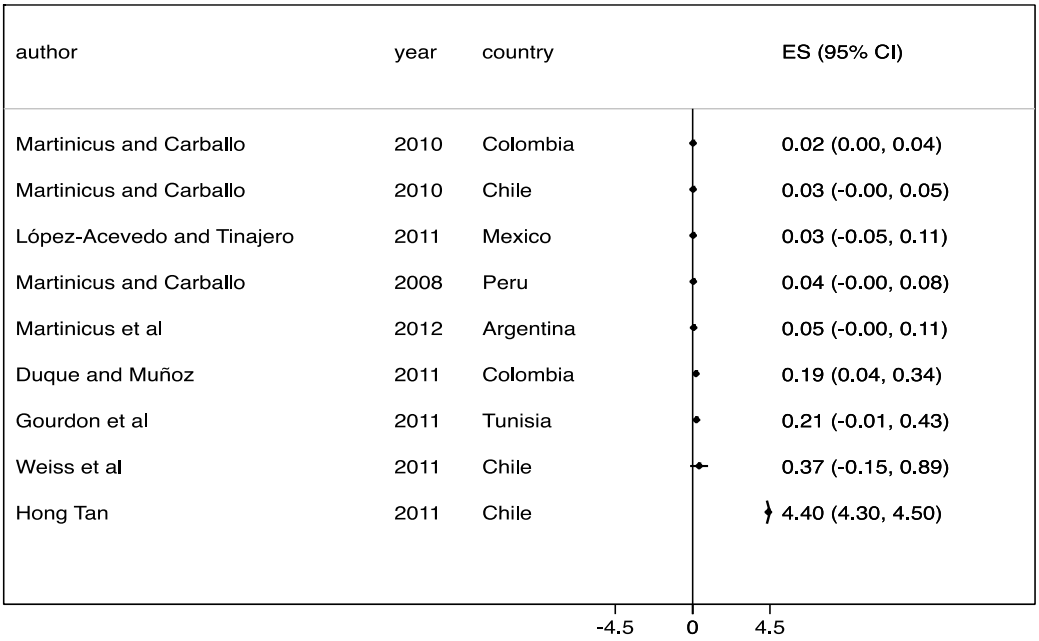
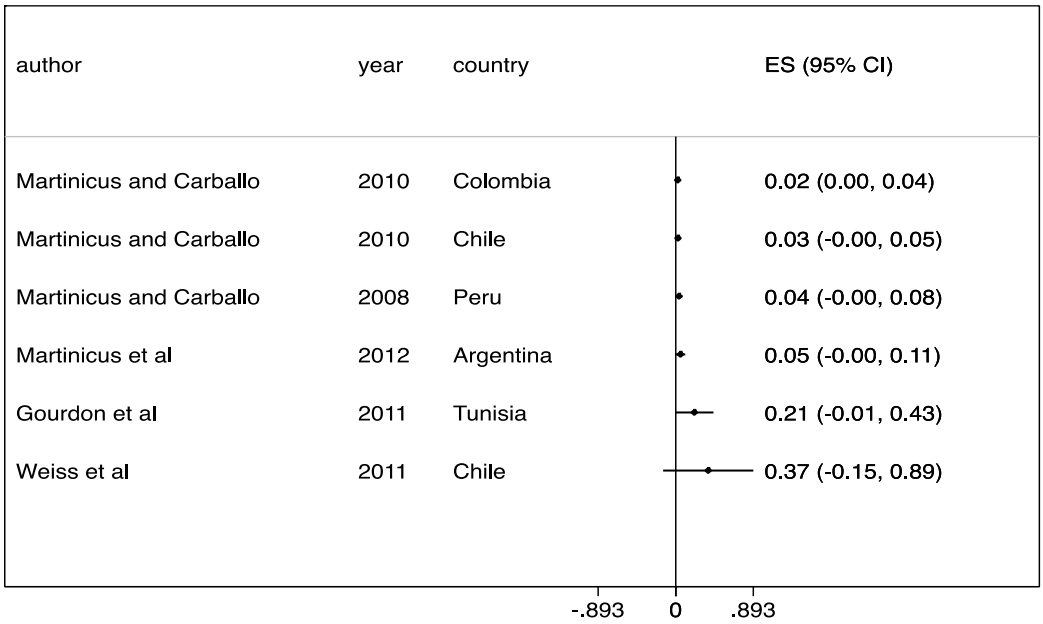


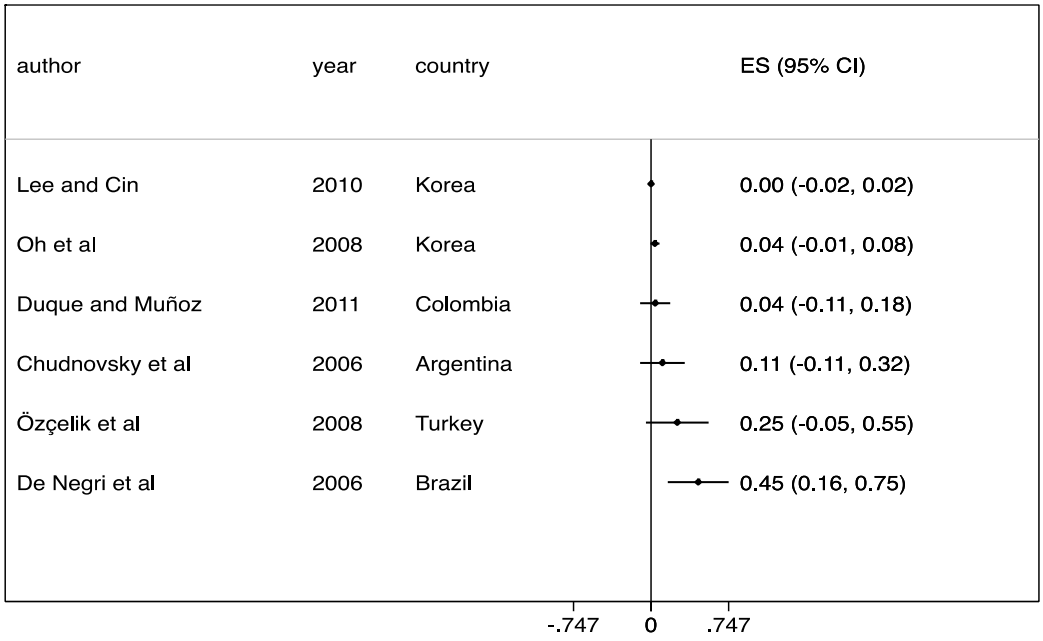
Figure 14: Forest Plot – Support to export programmes: Exports



II. Innovation

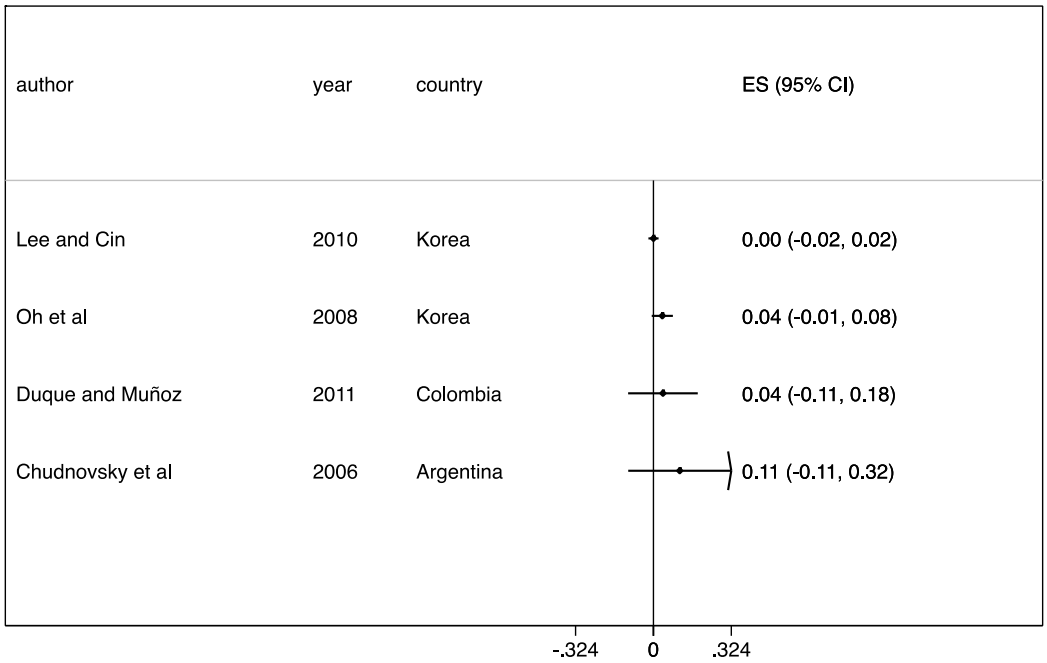
Figure 15 shows the forest plot for innovation supports. The review found six ES for interventions aimed at helping SMEs to innovate. The effect sizes range from SMD = 0.00 (95% CI = -0.02, 0.02) to SMD = 0.45 (95% CI = 0.16, 0.75). Most of the studies find very small effects and those that found positive effects are imprecisely estimated. This result may go against a prevalent view that argues that SMEs do not innovate. It is also important to bear in mind that we are pooling together different programmes envisaged as helping SMEs to expand their production frontier through innovation. Thus, one should read this result carefully. This is especially important given that the overall estimates synthesise studies that use different definitions and measurements of innovation, different firm sizes, and study different country/institutional contexts.

Figure 15: Forest Plot – All interventions: Innovation



When attention is turned to MG interventions only, **figure 16 shows** a similar pattern, that is, no effect on innovation across most included studies, with effect sizes ranging from SMD = 0.00 (95% CI: -0.02, 0.02) to SMD = 0.11 (95% CI: -0.11, 0.35).

Figure 16: Forest Plot – Matching grants: Innovation



The study of Benavente et al. (2007), not included in the meta-analysis because we were unable to compute either the standardised effect sizes or the adjusted standard errors present results on employment, evaluated the Chilean Technology Development Fund (TDF), the FONTEC programme. It suggests that that FONTEC's subsides promote technological upgrades and process innovations, rather than radical product innovations.

III. Investment

The average effects of business support on firms' investment are shown in f**igure 17**. Again, most of the effects are small and not statistically significant, while two studies showing positive and statistically significant effects for innovation programmes in Mexico (SMD = 0.22, 95% CI = 0.14, 0.29) and Vietnam (SMD = 0.23, 95% CI = 0.20, 0.25).

Figure 18 shows the forest plot for MG only. Two studies have a positive but not statistically significant effect and one study has a positive statistically effect with SMD = 0.23 (95% CI = 0.20, 0.25).

Figure 17: Forest Plot – All interventions: Investment

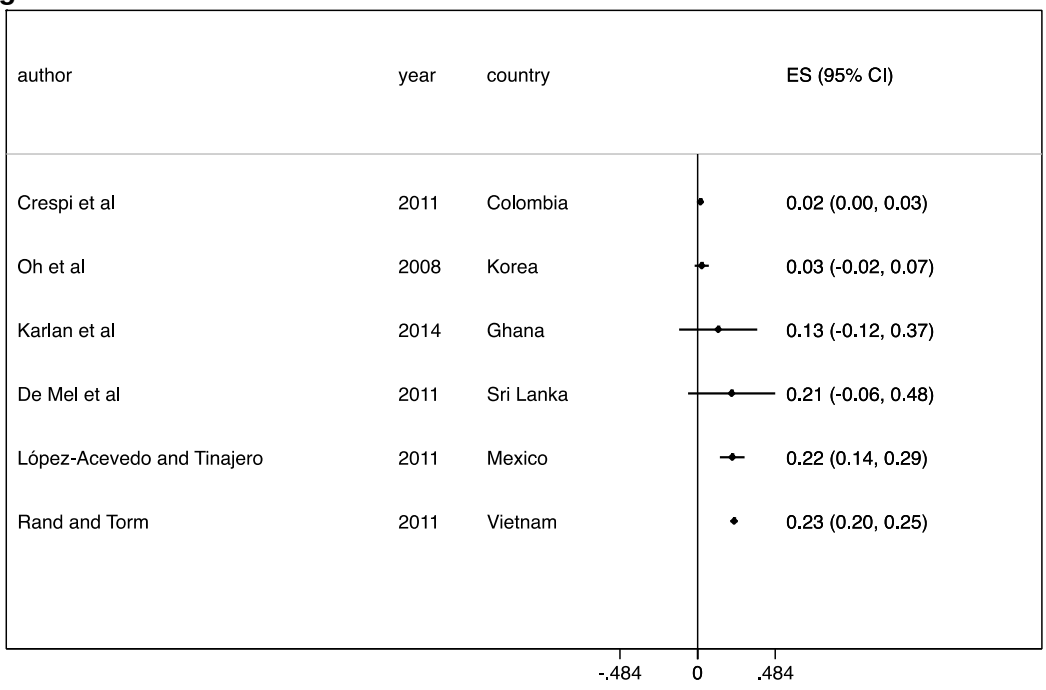
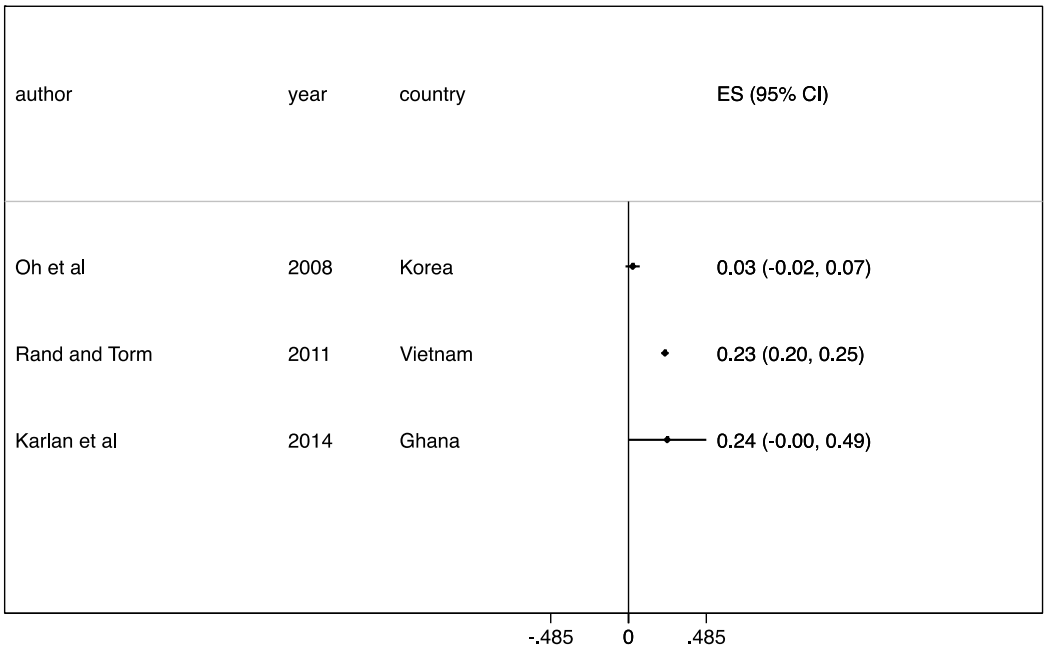


Figure 18: Forest Plot – Matching grants: Investment



4.3.2. Sensitivity Analysis

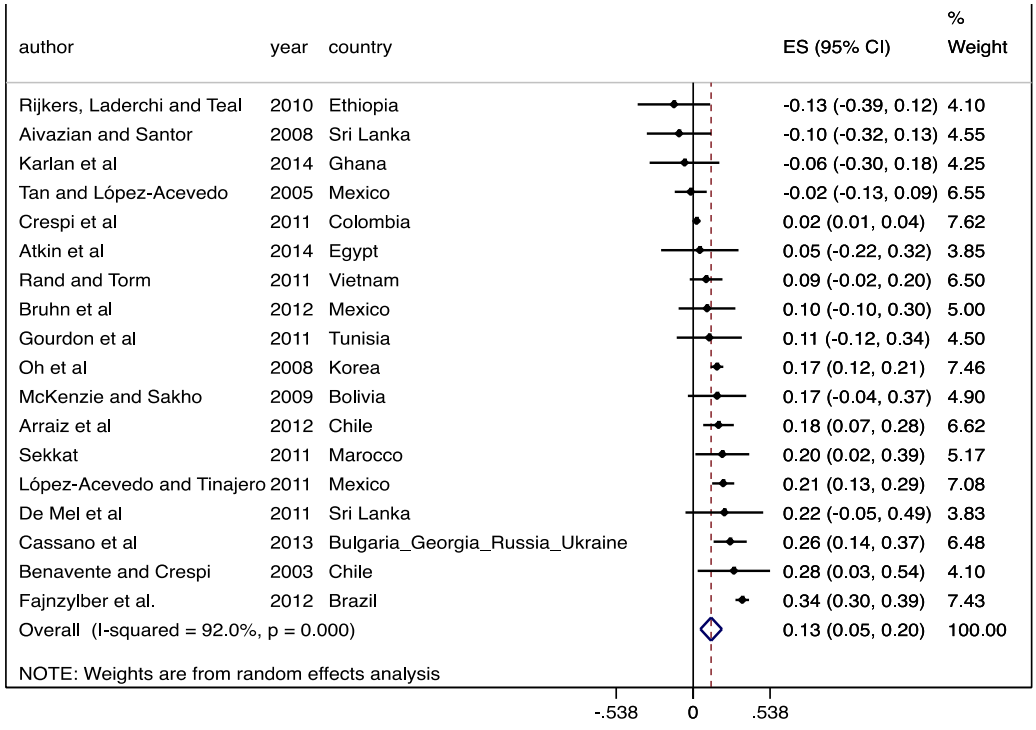
This section first reports the effects for primary outcomes dropping studies that stand out as clear outliers in the forest plots based on a pre-determined definition discussed above (see footnote 35), then provides meta-regression with the following moderator variables: a dummy variable identifying Latin American countries (LAC), a dummy variable identifying African countries (Africa), a continuous variable that inform the size of a firm in terms of number of employees, a dummy variable for moderate or high risk of bias (RoB), a binary indicator for the method used (1 if RCT and 0 if quasi-experimental - QE), and the secondary (intermediary) outcomes – investment, innovation and exports.

Forest Plots

A. Primary Outcomes

Figures 19 to **21** show the forest plots for primary outcomes firms' performance, employment and labour productivity respectively. Dropping the study by Duque and Muñoz (2011) reduces the magnitude of the overall effect size on firms' performance to 0.13 SD. The 95 per cent CI of (0.06, 0.20) remains almost the same. Excluding the outlier improves I-squared statistics only slightly (from 92.8% to 92.1%).

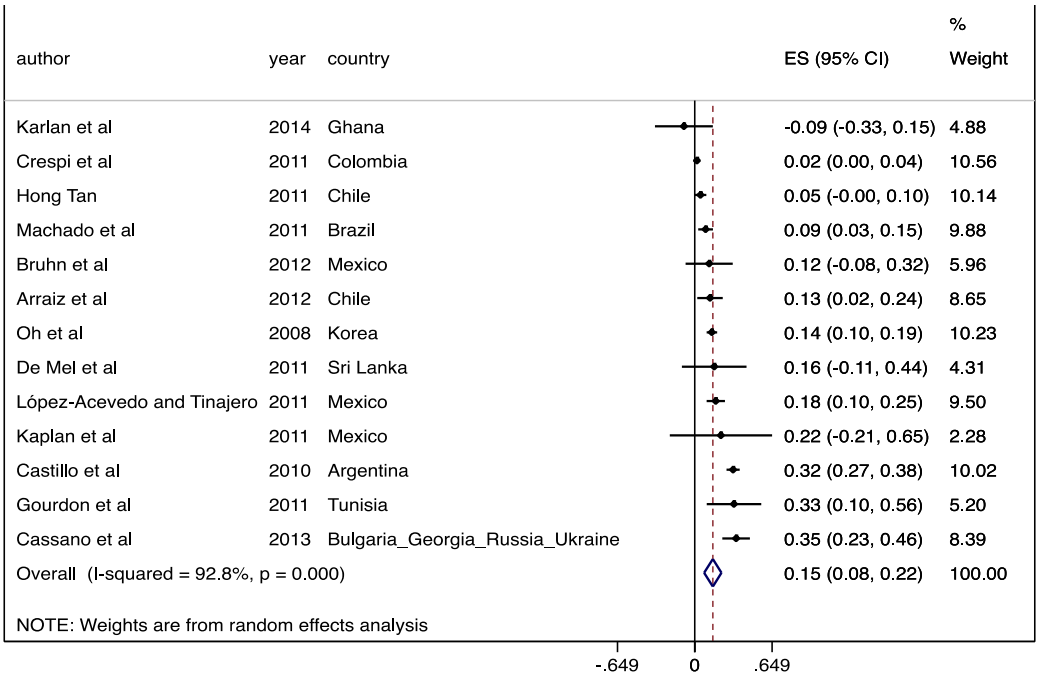
Figure 19: Forest Plot – All interventions: Firm Performance – Dropping outliers



Note: Heterogeneity chi-squared = 226.88, p = 0.000. I-squared = 92.1%. Tau-squared = 0.0196. Test of ES=0: z = 3.70, p=0.000.

Figure 20 shows that the overall effect of business support on employment after the exclusion of Duque and Muñoz (2011). The average effect size is 0.15 SD (with 95% CI of 0.08, 0.22). The result is now highly statistically significant (p-value = 0.000). With the exclusion of the outliers there is also a gain in terms of consistency between studies' findings. Despite still being relatively high, the I-squared statistic drops from 99.1 per cent to 92.8 per cent. The Tau-squared statistic also reduces sharply to 0.013 (compared to 0.081).

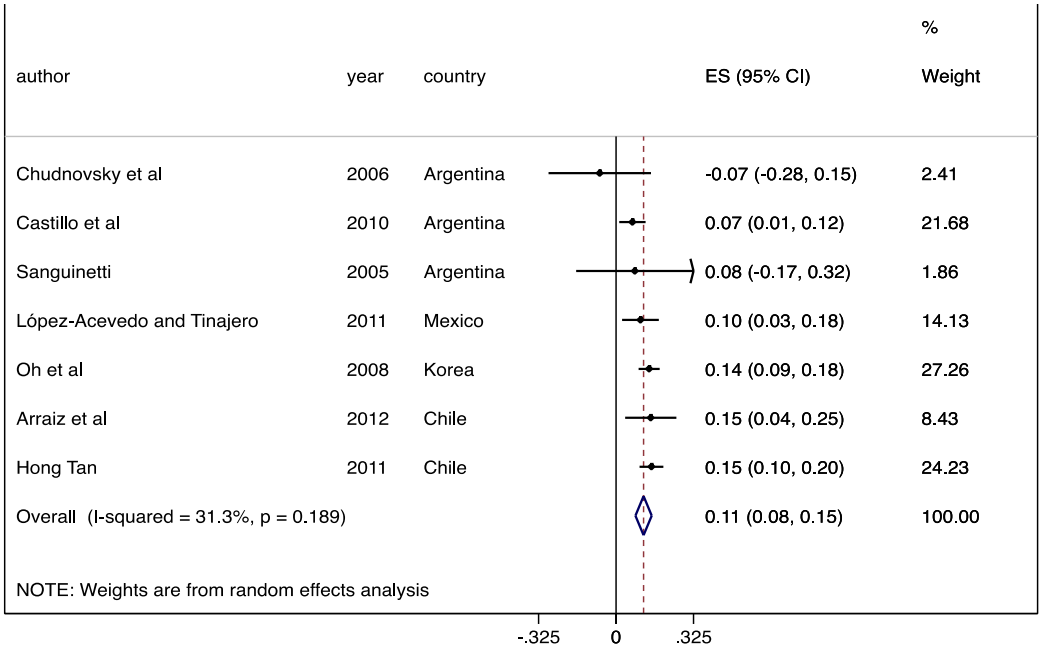
Figure 20: Forest Plot – All interventions: Employment Creation – Dropping outliers



Note: Heterogeneity chi-squared = 165.62, p = 0.000. I-squared = 92.8%. Tau-squared = 0.013. Test of ES=0: z = 4.07, p=0.000.

Figure 21 shows an overall standardised effect size of 0.11 with a 95 per cent CI of (0.08 and 0.15) for labour productivity once the study of Duque and Muñoz (2011) is excluded. The difference is huge compared with the previous result showed in figure 11. It is worth noting the gain in precision due to the fall in between studies variance (Tau-squared statistic of 0.0006, I-squared of 31.3%).

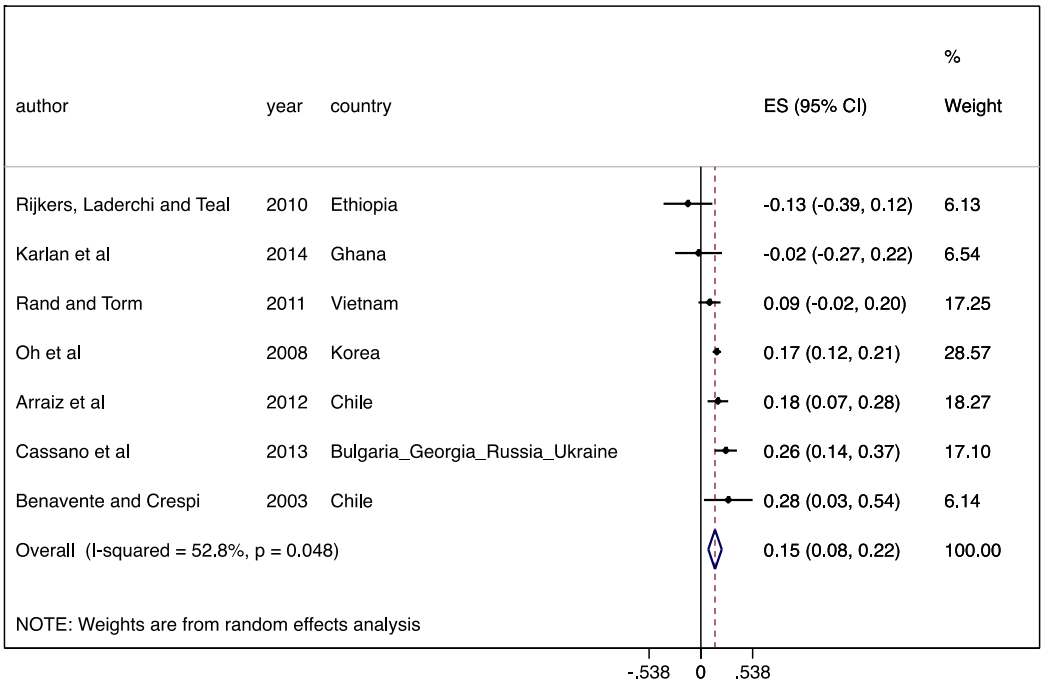
Figure 21: Forest Plot – All interventions: Labour Productivity - Dropping outliers



Note: Heterogeneity chi-squared = 8.73, p = 0.189. I-squared = 31.3%. Tau-squared = 0.0006. Test of ES=0: z = 6.59, p=0.000.

Figure 22 shows that excluding the outlier studies – Duque and Munõz (2011) and Hong Tan (2011) – results in a positive and statistically significant (p-value = 0.000) effect of MG on firms' performance. The standardised average effect is 0.15 (95% CI = 0.08, 0.22). The heterogeneity is remains moderate with the I-squared statistic of 52.8 per cent and the Tau-squared statistic close to zero (0.004).

Figure 22: Forest Plot – Matching grants: Firms' Performance – Dropping outliers

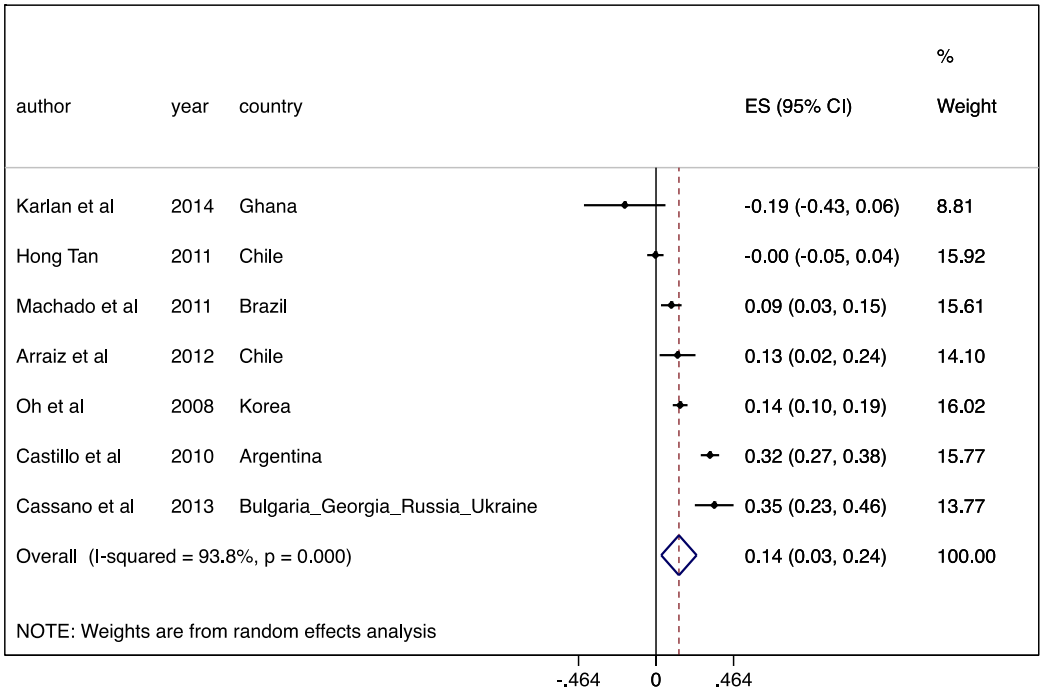


Note: Heterogeneity chi-squared = 12.70, p = 0.048. I-squared = 52.8%. Tau-squared = 0.004. Test of ES=0: z = 4.15, p=0.000.

Figures 23 and **24** summarise the effect of MG on employment and labour productivity respectively. With exclusion of the outlier (Duque and Muñoz, 2011) the overall impact of MG on employment becomes positive 0.14 SD with a 95 per cent CI of (0.03, 0.24) – and statistically significant at 1 per cent (p-value of 0.01). The I-square (93.8%) and Tau-squared (0.018) statistics indicate that removing outliers does not result in a significant reduction in studies' heterogeneity.

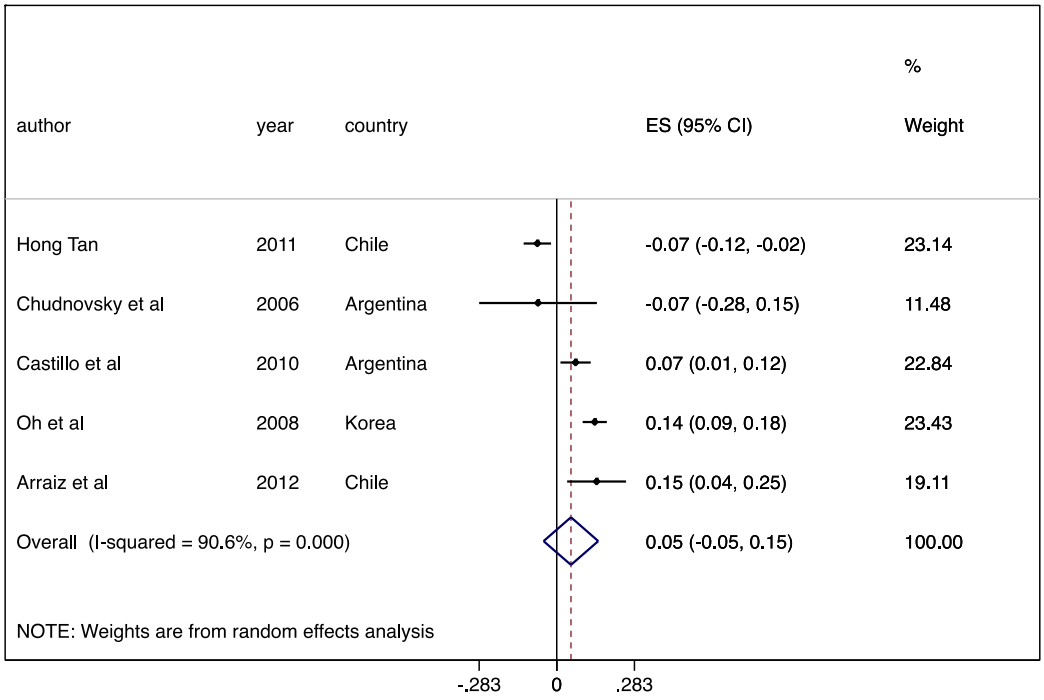
Figure 24 shows that the effect of MG on labour productivity remains indistinguishable from zero following exclusion of the outlier (Duque and Muñoz, 2011). The overall average standardised effect is now positive (0.05 of a SD, 95% CI: -0.05, 0.15) though not statistically significant (p-value = 0.31). There is a very slight gain in terms of consistency across studies' findings though a large degree of between-study heterogeneity remains. The I-squared statistic is 90.7 per cent compared to 94.1 per cent in figure 12.

Figure 23: Forest Plot – Matching grants: Job Creation – Dropping outliers



Note: Heterogeneity chi-squared = 96.90, p = 0.000. I-squared = 93.8%. Tau-squared = 0.018. Test of ES=0: z = 2.53, p=0.01.

Figure 24: Forest Plot – Matching grants: Labour Productivity – Dropping outliers



Note: Heterogeneity chi-squared = 42.53, p = 0.000. I-squared = 90.7%. Tau-squared = 0.015. Test of ES=0: z = 1.01, p=0.31.

Meta-Regression

The analysis here concentrates on cases where an outcome has at least two reports. Where few ES per outcome (less than four) are available we were unable to control for moderator variables. Thus, only random effect estimates are shown. All the analyses below are conducted after excluding outliers.

A. *Primary Outcomes*

Table 4 shows the coefficients for meta-regression. The first row shows the random effects estimate without controlling for any moderator factor. The coefficients are identical to those reported in the forest plot once outliers are excluded. The first row shows the RE estimate without controlling for any moderator factor. These estimates correspond to the overall mean effect as showed in the forest plots. We then estimate meta-regression controlling for each moderator factor in separated regressions. We had to estimate each regression 0ne-by-one due to insufficient sample size. We report the coefficient for the constant (RE when the dummy variable takes the value of zero) and the coefficient of the moderator variable in all cases. To indicate whether the coefficient is statistically significant we used p-values.

Table 4: Meta-Regression for Primary Outcomes (excluding outliers)

	Firms Performance	**Employment Creation**	**Labour Productivity**
RE estimate -- no controls	0.13***	0.15***	0.11***
p-value	0.000	0.001	0.001
N	19	13	7
Moderator variables (Control variables)			
Constant	0.10**	0.19***	0.14**
p-value	0.036	0.01	0.014
LAC fixed effect (1 if LAC; 0 otherwise)	0.057	-0.06	-0.03
p-value	0.35	0.43	0.48
N	19	13	7
Constant	0.15***	0.15***	Na
p-value	0.000	0.002	
Africa fixed effect (1 if Africa; 0 otherwise)	-0.10	-0.03	Na
p-value	0.18	0.82	
N	19	13	
Constant	0.16***	0.21***	0.13
p-value	0.000	0.004	0.11
Firm size (continuous variable)	-0.001*	-0.001*	-0.0003

p-value	0.06	0.15	0.70
N	19	13	7
Constant	0.09**	0.07	0.11**
p-value	0.047	0.116	0.027
Risk of bias (1 for moderate or high RoB; 0 for low RoB)	0.09**	0.07	0.11**
p-value	0.047	0.116	0.027
N	19	13	7
Constant	0.14***	0.16***	Na
p-value	0.000	0.002	
Method (1 if RCTs; 0 if QE)	0.14***	0.16***	Na
p-value	0.000	0.002	
N	19	13	

Note: ***, **, * Statistically significant at 1, 5 and 10 percent respectively.

Given the small sample of studies, these estimates are underpowered. The lack of statistically significance should not mean that these factors are unimportant. The magnitude of the effect size and its sign can be informative in such context.

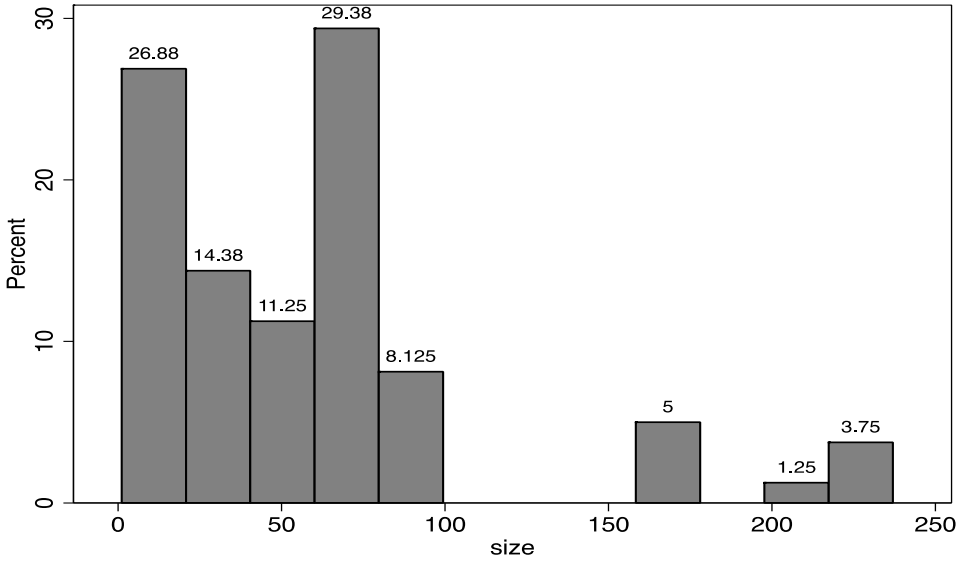
First, the coefficient of the dummy variable for LAC is positive but statistically insignificant. The estimate indicates that business support services implemented in LAC is associated, on average, with higher effects on firm performance. However, for the other two outcomes we observe the opposite, that business support services implemented in LAC are associated, on average, with lower effects on employment creation and labour productivity, by 0.06 of a SD and to 0.03 of a SD respectively. As before, the estimates are not significant in statistical terms. We have insufficient data to explore this issue further, but it could be that business support to SMEs in LAC are more capital intensive and therefore less likely to create jobs.

The estimate for the 'Africa' dummy indicates that SME support programmes in Africa are associated with a lower pooled effect on firm performance, but is only marginally associated with lower effect on employment creation. The differences between estimates on firm performance in LAC and Africa regions could be suggesting that, on average, business support to SMEs is more labour intensive in African countries. One cannot be assertive, but this could be reflecting differences in skills of the work force in both regions.

The size of firms may play a role in the main findings. As can be seen in the table, the random effects estimate increases in all three cases once we control for firm size, suggesting that larger firms are associated with larger impacts. The relationship might not be linear though.[43] **Figure 25** shows the histogram for this variable.

[43] We tested a quadratic specification for the variable size and the coefficients for the quadratic term is very often negative, suggesting a concave relationship between firm size and firm performance. Because number of studies is relatively small, the estimates are imprecisely estimated and are available upon request.

Figure 25: Histogram for Average Firm Size



The figure highlights that most of the firms assessed in the studies covered by this review have fewer than 100 employees. A high percentage (25%) has no more than 10 employees (first bar). For studies covering African countries, the median size of firms is 93 and the mean is 83. This indicates that there is a larger proportion of small firms studied in Africa given the left-skewed distribution.

Table 4 shows the random effects estimates once risk of bias is controlled for. Because the dummy risk of bias takes the value of 1 for studies with a high risk of bias, the significant reduction in the magnitude of the effects indicates that high-risk studies tend to show more positive results on firms' performance than studies with low or moderate level of bias. The same holds for employment creation, but not for labour productivity. In fact, once a dummy for risk of bias is added to the model, the effect on employment turns statistically insignificant. One could interpret these results as a signal that the most rigorous studies have not found effects of business interventions on these firms' performance and employment creation, and therefore with so few good studies out there any conclusion regarding the effect of such interventions is still premature.

Finally, the coefficient of the dummy variable that informs the method used (one for RCT and zero for quasi-experimental methods), suggests that the RCTs included in this review were less likely to find positive effects on firms' performance and employment creation. We believe that this might be in part due to the scales of the programmes evaluated. Studies using quasi-experimental methods usually rely on administrative datasets with thousands of observations whereas RCTs might test programmes in their pilot stages.

Table 5 replicates the exercise only for MG interventions.

Table 5: Meta-Regression for Primary Outcomes

Matching Grants (Exclude Outliers)

	Firms Performance	Employment Creation	Labour Productivity
RE estimate -- no controls	0.15**	0.13*	0.052
p-value	0.012	0.083	0.33
N	7	7	5
Moderator variables (Control variables)			
Constant	0.11*	0.13	0.14
p-value	0.095	0.305	0.244
LAC fixed effect (1 if LAC; 0 otherwise)	0.10	0.13	0.14
p-value	0.40	0.305	0.244
N	7	7	5
Constant	0.17***	0.17**	Na
p-value	0.000	0.029	Na
Africa fixed effect (1 if Africa; 0 otherwise)	-0.27**	0.17**	Na
p-value	0.03	0.029	Na
N	7	7	Na
Constant	0.17*	0.27*	0.24
p-value	0.084	0.053	0.113
Firm size (continuous variable)	-0.001	0.27*	0.24
p-value	0.37	0.053	0.113
N	7	7	5
Constant	0.15	0.015	0.068
p-value	0.131	0.33	0.501
Risk of bias (1 for moderate and high risk of bias; 0 for low)	-0.01	0.015	0.068
p-value	0.94	0.33	0.501

N	7	7	5
Constant	0.16***	0.20**	Na
p-value	0.002	0.018	Na
Method (1 if RCTs; 0 if QE)	-0.23	0.20**	Na
p-value	0.27	0.018	Na
N	7	7	Na
Constant	0.15**	0.16*	0.10*
p-value	0.012	0.074	0.047
Export (continuous variable)	2.23**	2.86	-2.85**
p-value	0.02	0.11	0.012
N	7	7	5
Constant	0.06	0.13	0.06
p-value	0.48	0.16	0.37
Innovation (continuous variable)	6.32	8.23	-1.85
p-value	0.15	0.23	0.59
N	7	7	5
Constant	0.08	0.17**	0.025
p-value	0.36	0.027	0.67
Investment (continuous variable)	-0.92	-2.99***	8.00
p-value	0.35	0.01	0.52
N	7	7	5

Note: ***, **, * Statistically significant at 1, 5 and 10 per cent respectively.

The results for firm performance are qualitatively similar to those presented **in table 4,** but few estimates stand out interestingly. First, the coefficient of the dummy 'Africa' is large and negative in the first column, suggesting that MG programmes in Africa is associated with worse performance of firms.

On the other hand, the coefficient for Africa region is positive and relatively large for employment creation. This suggests that MG in African countries were more likely to create jobs. This is consistent with the hypothesis that African firms' production function may be more labour intensive (than LAC, for instance), and that they likely work at relatively low scale hence the scope to grow through addition of labour inputs.

As expected, the coefficient for size of firms is positive and large. This might be picking a mechanical effect since firms' size is measured as number of employees. This would explain the relatively large effect on labour productivity as well.

MG programmes that aimed at improving firms' capacity to export and innovate showed positive effects on firms' performance and employment creation, but negative on labour productivity. This result is a bit puzzling and we interpret it as an indication that firms targeted by the type of interventions covered in this review were likely facing some constraint to increase output beyond the variable cost associated with extra hired labour. This could also reflect some distortion in case an intervention somehow incentivised firms to create jobs (e.g. unpaid jobs through employment of family members) through different forms of subsidies (e.g. wage subsidy).

Finally, the coefficient for the variable 'investment' was negative for employment creation. Our interpretation is that the investment made by these firms was toward addition of capital goods.

In a nutshell, these findings suggest that matching grants serve different firm composition and business purposes. Export-oriented firms for example need to become more efficient to be able to compete in the external market while labour intensive firms may use matching grants to hire extra labour.

B. *Individual Interventions*

Table 6 shows random effects estimates for individual interventions. The table reports the coefficient, t-statistic, p-value and number of studies (reports) for each primary outcome. As can be seen, when we look at interventions individually we can see how little we still know about the impact of each of these policies. In many cases there are only two reports per outcome.

Since the sample size is small in all cases, the estimates lack power. So, as before, we concentrate on the magnitude of the effect sizes that are statistically significant. The overall picture suggests that most interventions may affect outcomes positively. Disregarding issues such as risk of bias, the first column suggests that tax simplification and matching grants programmes seem to be the most significantly effective to improve firms' performance indicators and to create jobs. In contrast, technical assistance does appear to lead to big effects for firm performance, employment and labour productivity in magnitude although never statistically significantly (probably due to the small number of studies which have assessed these programmes).

Table 6: Meta-Regression for Individual Interventions

	Firm Performance	Employment	Labour Productivity
Technical assistance	0.27	0.14	0.12
p-value	0.3	0.19	0.49
# of studies	*2*	*2*	*2*
Training	0.08	0.07	
p-value	0.43	0.51	
# of studies	*3*	*2*	
Cluster	0.09	0.04	0.06

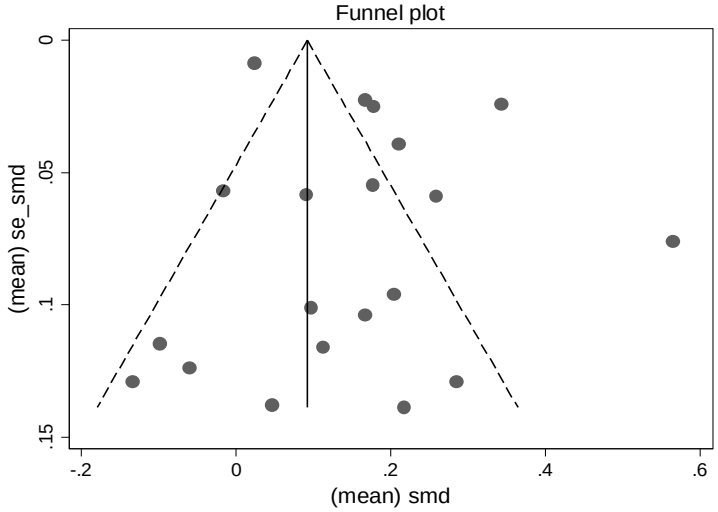
p-value	0.28	0.42	0.48
# of studies	*2*	*2*	*2*
Support to Export	-0.004		
p-value	0.93		
# of studies	*4*		
Innovation	0.023	-0.004	-0.04
p-value	0.225	0.91	0.55
# of studies	*2*	*2*	*2*
Tax Simplification	0.28**	0.18	
p-value	0.047	0.37	
# of studies	*3*	*2*	
Matching Grants	0.15**	0.13*	0.052
p-value	0.012	0.083	0.33
# of studies	*9*	*9*	*6*

Note: ***, **, * Statistically significant at 1, 5 and 10 per cent respectively.

4.3.3. Publication bias

This section uses funnel plots and Egger's tests to check whether there is any indication of publication bias. **Figure 26** (below) plots the effect size (SMD) on the horizontal axis and the standard error of the effect size (SE SMD) on the vertical axis. The solid line crosses the horizontal axis at the overall average fixed effect estimate. Although most of the dots (studies) are spread around the solid line and within the triangle area (95% CI), there are quite a few cases of studies on the right side of the triangle area, which are not symmetrically represented on the left side. These studies report positive effects and seem to have mixed level of precision. We also performed Egger's test for publication bias using the *metabias* command in Stata. The first column in **table 7** shows the results for the outcome 'firms' performance'. The coefficient of the variable *bias* is positive but only statistically significant at 11 per cent (p-value = 0.104). According to our interpretation, the funnel plot and Egger's test might indicate some publication bias towards studies showing positive effects of business support on SMEs performance indicators.

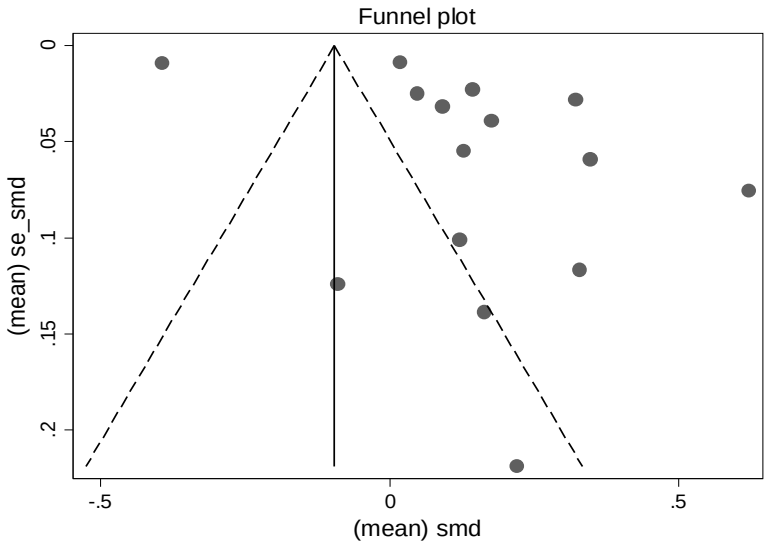
Figure 26: Funnel Plot for Firm Performance



Note: The figure is plotted with the solid line crossing overall effect size

The funnel plot for employment outcome is shown in **figure 27**.

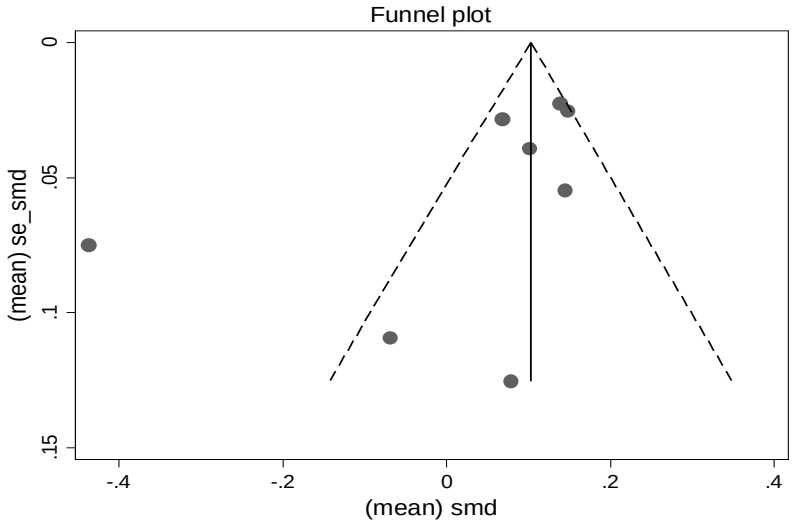
Figure 27: Funnel Plot for Employment Generation



Most of the dots are scattered on the top and outside the 95 per cent CI. The solid line crosses the horizontal axis at the fixed effect estimate. Note how different the fixed effect estimate is when compared with the random effects estimate reported in the forest plots. Egger's test is shown in the second column of **table 8**. As can be seen, there is an indication of publication bias towards positive results. The coefficient of the variable bias is positive (7.14) and statistically significant at 9 per cent (p-value = 0.084) for employment creation.

Figure 28 shows the funnel plot for labour productivity. The figure shows most of the dots concentrated on the top, on the positive quadrant and within the 95 CI interval. The Egger's test in the third column of **table 8** shows that the coefficient for the variable *bias* is negative and statistically insignificant. We observe a very similar pattern for MG programmes as is shown in **table 8**.

Figure 28: Funnel Plot for Labour Productivity



It is worth mentioning that this conclusion could be affected by the four studies that could not be included in these empirical tests. These conclusions would be reinforced by the results of the excluded studies as three of them – Benavente et al. (2007), Mano et al. (2012) and Corseuil and de Moura (2011) – found positive effects on jobs creation, two -- Benavente et al. (2007) and Mano et al. (2012) – found positive effect on firms' performance, and one -- Benavente et al. (2007) – also found positive effects on innovation and exports[44]. We therefore interpret these findings as not providing evidence for publication bias for firms' performance and labour productivity outcomes, but providing evidence of possible bias for employment creation outcomes.

Table 7: Egger's Test for Publication Bias

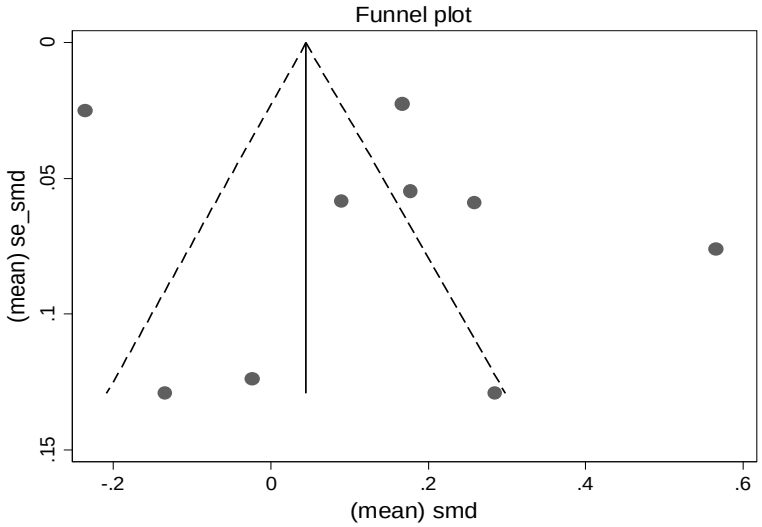
	Firms Performance	Employment Creation	Labour Productivity
Slope	0.055	-0.20**	0.20**
(s.e.)	(0.03)	(0.08)	(0.07)
p-value	*0.109*	*0.028*	*0.027*
Bias	1.82	7.14*	-3.24
(s.e.)	(1.07)	(3.82)	(1.96)
p-value	*0.104*	*0.084*	*0.148*

Note: Standard errors (s.e.) in parenthesis. **, * Statistically significant at 5 and 10 percent respectively.

[44] Benavente et al. (2007) was the only one between the four excluded studies to look at innovation and export outcomes. Kalume et al. (213) found positive effect of a tax simplification programme on firms' creation and survival rate.

Figures 29 to 31 present the funnel plots for the same outcomes but only for MG interventions whereas Egger's test is showed in **table 9**. The findings with respect to possible bias have the same interpretation as the findings for interventions overall: findings provide evidence of publication bias for employment creation outcomes but we are not able to conclude there is evidence for publication bias for firms' performance and labour productivity outcomes.

Figure 29: Funnel Plot for Matching Grants: Firm Productivity



Note: The figure is plotted with the solid line crossing overall effect size.

Figure 30: Funnel Plot for Matching Grants: Employment Generation

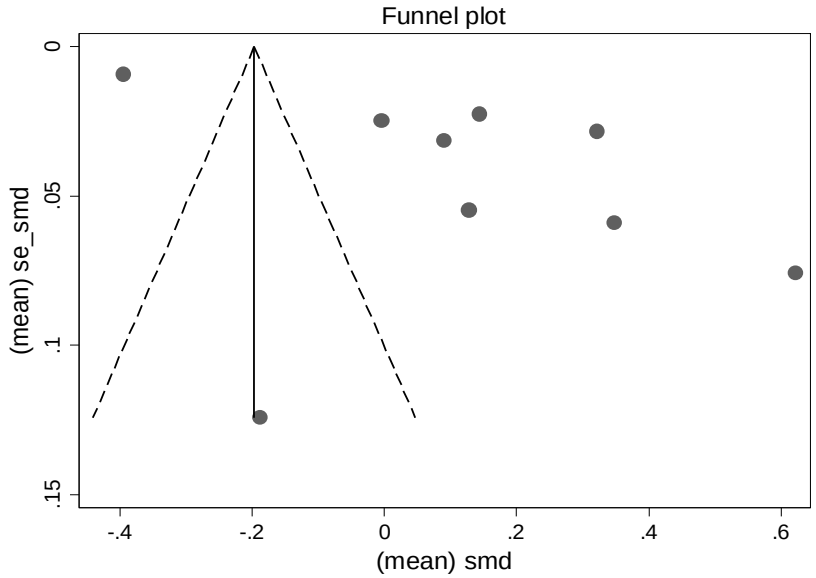


Figure 31: Funnel Plot for Matching Grants: Labour Productivity

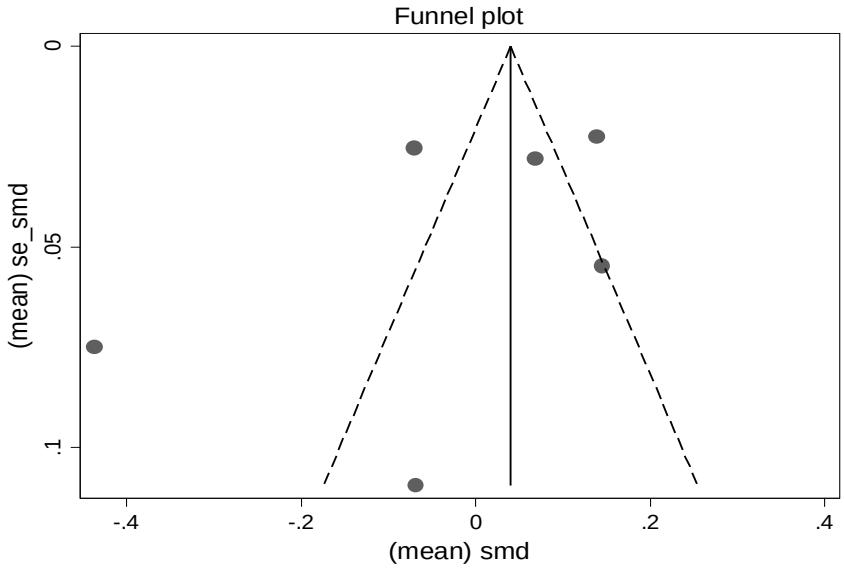


Table 8: Egger's Test for Publication Bias

Matching Grants Interventions

	Firms Performance	Employment Creation	Labour Productivity
Slope	-0.055	-0.46***	0.15
(s.e.)	(0.14)	(0.10)	(0.12)
p-value	*0.71*	*0.003*	*0.31*
Bias	2.78	15.36**	-3.55
(s.e.)	(3.24)	(4.74)	(3.72)
p-value	*0.42*	*0.014*	*0.39*

Note: Standard errors (s.e.) in parenthesis. ***, **, * Statistically significant at 1, 5 and 10 percent respectively.

5. Discussion

5.1 Summary of results

This systematic review found 40 studies that used rigorous evaluation techniques to identify the causal effect of business support interventions on SME outcomes. Heightening the importance of our review is that many of the studies examined (20 out of 40) remain unpublished. While it is not surprising that journal articles can take a long time to appear in the field of development economics where the studies originate, this does indicate the importance of searching repositories of unpublished literature. Furthermore, despite the reasonable number of studies, there are still very few that meet all necessary criteria required for a study to be classified as having low risk of bias. Although the evidence comes from several countries, most of it is concentrated in Latin America.

We found that several studies looked at a myriad of outcomes related to firm performance such as profits, revenues, sales, assets, and so on. We thus grouped them under an outcome named 'firm performance' to be able to say something about the impact of different interventions on firms. A similar decision to group different measures into a broader definition was made for all outcomes assessed in this report. The meta-analysis found that on average, SME-support interventions had positive impacts on firm performance indicators as well as employment generation, labour productivity, exports and investment. In relative terms, the pooled estimates point to an effect of 21.8 per cent on firms' performance, 9 per cent on jobs creation and 8.9 per cent on labour productivity. However, there was substantial heterogeneity in effects across studies which we explored in subsequent analysis.

The sample size allowed us to look at the effect of *matching grants* and support on export programmes through forest plots and on most of individual interventions through meta-regression. We find that matching grants show a positive impact on firms' performance and employment. The magnitude of the effects in percentage change are smaller for firms' performance (7.6 per cent) to what we found pooling the interventions, but very similar for jobs creation (7.5 per cent). Even though based on a fewer number of studies, meta-regression results suggest that technical assistance and tax simplification programmes also have some positive effects on firms' performance and jobs creation. Export promotion and innovation programmes seem to affect positively exports and innovation respectively.

If we consider the theory of change outlined above, we observe from meta-regression results that indirect interventions, such as tax simplification programmes, affected intermediary and final outcomes by increasing formalisation rates and firms' performance. We also found positive effects of matching grants on intermediary – investment – and final outcomes.

In addition, the evidence suggests that none of the different types of support has a negative impact on performance or job creation on average, though we found a lot of between-study variability in most meta-analyses, indicating that effects of these interventions can vary considerably.

For the pooled sample of interventions and matching grants we were able to run meta-regressions controlling for moderator factors. The analysis showed that region (LAC and Africa), firm size and study quality (risk of bias) may have an important moderating effect on the overall average effects on firms' performance and employment. The bottom line is that

firms seem to perform better in LAC than in African countries. We believe that this might be picking some scale effect as relatively larger firms are supposed to have larger profits and sales. We tried to shed some light on the scale effect by controlling for firms' sizes. Interestingly, the estimates point to a reduction of firms' performance as firms get larger. This could be due to a competition effect since relatively larger firms tend to operate in a more competitive market, but it could also be explained by coordination failures that tend to common in large firms.

Risk of bias and method used to assess the impact of the programmes play a role on the findings as well. The estimates show that high risky studies tend to report higher effects on firms' performance and employment, but not for labour productivity. With regard to methods used, RCTs tend to report smaller effects on firms' performance and employment than studies based on quasi-experimental methods.

Funnel plots and Egger's test suggested the possibility of some publication bias in the reporting of job-related outcomes, employment and labour productivity.

5.2 Overall Completeness and Applicability of Evidence

This review included 40 studies and analysed 36 studies with meta-analysis and meta-regression techniques. The studies covered interventions in 18 different countries; most are located in Latin America (26), six in Asia, six in Africa, and two in Europe. We were unable to calculate effect sizes for three studies from Latin America and one from Africa, which were hence excluded from the meta-analysis.

Our findings do not permit us to say much about the effectiveness of most of the interventions individually given the low number of studies investigating the impact of same type of policy. However, the evidence showed encouraging results regarding the impact of business support on primary outcomes such as SMEs' performance, employment creation and labour productivity as well as on secondary outcomes such as exports, innovation and investment. Our findings also suggested that interventions in the form of matching grants seem to have positive effects on firm performance and employment, and on firms' investments.

Though random effects (RE) meta-analysis models attempt to account for sources of variability other than sampling bias, RE meta-regression analysis controlling for moderating factors showed that the region, firm size and quality of the study may explain a lot of variability observed in the data. We still know too little about the impact of SME business support policies or interventions, and which are more or less likely to work in resource poor contexts such as in African countries, but these results are encouraging and hopefully will be useful to show policy makers the importance of more costly evidence-based interventions.

Overall the definition of an SME is very broad, and the same intervention seems to have very different effects when applied to neighbourhood businesses employing fewer workers versus concerns that are more outward-looking and have a longer-term vision. Therefore if policymakers are interested in scaling interventions or replicating them across national contexts, it is worth taking a more nuanced approach to eligibility, particularly in terms of firm size, in order to minimise the risk of funding ineffective programmes.

5.3 Quality of the Evidence

Overall, the quality of the studies varies significantly. About 60 per cent were judged to have a high risk of bias in our risk-of-bias assessment. Only a couple (two RCTs) was considered to have a low risk of bias were coded as having a low risk of bias. Even RCTs and peer-reviewed studies published in respected journals lacked key information about the programme or intervention. Some did not report basic descriptive statistics such as sample sizes or means and standard deviations at the baseline, others did not deal explicitly with the evident problem of attrition, and most did not explore the possibility of general equilibrium effects from large-scale interventions. Also, funnel plots and Egger test pointed to some publication bias in employment and labour productivity outcomes. Finally, the small number of studies evaluating the impact of the same intervention on the same set of outcomes prevented us from running a meta-regression with moderating factors to uncover some of the mechanisms underlying the programmes' impacts. Consequently, the large number of studies of mixed quality should be seen as a strong signal that the meta-analysis results should be read carefully: *we still know too little about what works or does not work, and what works best for SMEs*.

5.4 Limitations and Potential Biases in the Review Process

Most of the studies covered in this review employ quasi-experimental designs that rely on assumptions that sometimes may fail at controlling for all sources of confounders. Our experience confirmed a point made by Baird et al. (2013) that very few economic papers report the exact information necessary to perform ES calculations, so assumptions had to be made. In addition, to synthesise the ES across different studies we made a considerable simplification in averaging SMD obtained through estimation of different parameters – such as intention to treat (ITT) often reported in RCTs, average treatment on the treated (ATT) reported in DID and PSM, and the local average treatment effect (LATE) reported in RDD and IV. Our review also gathered evidence from 18 countries, four regions – Asia, African, Latin American and East Europe – various contexts, and with differences in programme scale, intensity, and period, which considerably complicated study comparability and the drawing of general conclusions.[45] We tried to account for heterogeneity within and between studies by estimating random effects models and using moderator variables in the meta-regressions, however the I-squared and tau-squared statistics showed a high degree of variability in the main findings.

Several additional limitations of this review are worth noting. We only searched for and included evidence published or made available after the year 2000 which means that a small number of impact evaluations conducted prior to this year may have been missed. However, judging by other systematic reviews conducted in this field and by the publication dates of included studies, we feel that this is unlikely.

We did not conduct a specific search in French, but we searched several databases that include studies written in other languages, and we screened French language studies for inclusion in the review. We did not conduct specific searches in the RePec database, nevertheless, it is worth mentioning that we did conduct electronic searches in Econlit database that encompasses all RePec working papers.

[45] In the discussion above it is showed that studies were done in different countries, different years and scale as some used administrative data and other small scale RCTs.

We did not conduct moderator analysis by all types of global region, only for those regions where we had sufficient observations to undertake appropriate analysis – in other words, Latin America (since the majority of the evaluated interventions were implemented in Latin America) and Africa (also given the sub-focus of the review on Africa – see also Appendix D).

The list of 40 studies included in this review is provided in Table 2, however, for four studies – Mano et al. (2012), Kalume et al. (2013), Corseuil and Moura (2011), and Benavente et al. (2007) - we were unable to compute either the standardised effect sizes or the adjusted standard errors and therefore could not include them in the meta-analysis.

Finally, this review could have made use of alternative methods more extensively to try to dig into specific characteristics of each intervention assessed econometrically in each study included in the final list.

5.5 Agreements and Disagreements with Other Studies or Reviews

Few reviews directly focus on the topic of business support services and SMEs, and those studies of interventions that directly relate to this topic and use rigorous methods and measures are examined in our review. However, some agreements and disagreements can be found in comparison to recent reviews on the topic. For instance, like Cho and Honorati (2013), who examine the impact of business and finance training on entrepreneurship in developing countries, we note a general positive impact for business support services on SMEs, though with mixed general results on some outcomes such as innovation, exports and investment. While Cho and Honorati (2013) highlight the potentially important role of financing in combination with training, we find positive outcomes for firms with regard to initiatives specific to matching grants. Comparisons between Cho and Honorati (2013) and this review should be done with extreme caution as the nature of the studies included in the two reviews are very different (as they focus on interventions that promote entrepreneurship). As with our review, Grimm and Paffhausen (2014) also consider business support services, but with a focus on employment outcomes. A small but thorough component of their review overlaps with ours in terms of studies examined and findings. Moreover, like Grimm and Paffhausen (2013), we note a paucity of literature on SME intervention outcomes, particularly in the context of Africa, and also of literature reporting appropriate baseline and outcome statistics. As in this review, Grimm and Paffhausen (2013) find weak support for the argument that SME interventions generate employment. Interestingly, their meta-analysis, controlling for firm size, suggests that SME interventions provide better results in larger SMEs, which is similar to what is found in this review. Their results also come mainly from small and medium-sized enterprises in Latin American countries and they also warn that it is difficult to predict whether these programmes would work in other context. Importantly, direct comparison between Grimm and Paffhausen (2013) and this review should be done with caution as their study includes microfinance interventions.

6. Authors' Conclusions

6.1 Implications for Practice and Policy

This review examines the impact of an array of SME business support on various outcomes. These different programmes are based on a different theory of change and each one has its own logic. Whenever possible, we used meta-regressions to disaggregate the findings by type of intervention and conduct sensitivity tests using moderator variables such as firm size, studies' risk of bias and region as controls. Another point worth noting is that most of the papers analysed are for the Latin America region, thus the results cannot be assumed to be the same in other contexts, for instance in African countries. Rather, the results might be used by decision makers in other regions to learn about this experience and adjust it to each specific regional context.

The findings suggest that overall SME support for the categories considered in this systematic review (training, matching grants, innovation, local productive systems, export promotion, tax simplification and technical assistance) has a positive impact on firm performance indicators, employment and labour productivity. For specific interventions, we find that matching grants in particular show a positive impact on firms' performance and employment. Even though based on just a couple of studies, meta-regression results suggest that technical assistance and tax simplification programmes also have some positive effects on firms' performance and jobs creation. Export promotion and innovation programmes seem to positively affect exports and innovation respectively.

Thus the results provide an indication for policy makers that some types of SME support might generate jobs and improve firm-level performance indicators. In addition, the evidence suggests that none of the different types of support have negative impacts on performance or job creation on average, though we found a lot of between-study variability in most meta-analyses, indicating that effects of these interventions can vary considerably. It would be ideal to have a more homogeneous set of interventions to conduct meta-regression analysis with more than one moderating factor that could potentially better capture the heterogeneity accruing from the differences in institutional settings where each intervention took place. The results of the meta-regression analysis suggest that firm size seems to be a relevant moderator, with larger firms more likely to create jobs. Secondly, the effect of MG on employment drops to almost zero and becomes statistically insignificant once risk of bias is controlled for. It suggests that studies that found a positive effect of MG on employment may have a higher risk of bias. Thirdly, the intermediary outcomes seem to affect some of the findings for primary outcomes. Firms that export tend to have higher labour productivity whereas firms that invest tend to have slightly more employees but not necessarily better performance. These findings suggest that matching grants serve different firm composition and business purposes. Export-oriented firms for example need to become more efficient to be able to compete in the external market while labour intensive firms may use matching grants more as a working capital.

The results provided should not be interpreted as clear evidence of the effectiveness of SME support alone. The bulk of the studies analysed have some limitations that should be noted and policy makers should learn from the evidence with this in mind.

First, the meta-regressions were not able to provide compelling results for all types of interventions or specific countries due to the relatively small number of studies that look at

the same intervention and used the same outcomes. Second, most of results are based on data extracted from studies for Latin America. Thus the lessons drawn from these studies should be interpreted under the institutional context of Latin American countries, which is already quite heterogeneous. The applicability to other contexts is not direct and should take into account specific institutional contexts. As noted above, we found a lot of variability between studies, indicating that effects of these interventions can vary considerably by context. Finally, the overwhelming majority of studies do not provide detailed information about the cost of implementation. The present study could be usefully complemented by a cost-effectiveness analysis in order to inform policy makers about the cost of effectiveness of each programme.

Thus, this review provides some evidence in favour of some SME support programmes, however, the evidence should be interpreted with caution given the limitations of some studies listed above. It is clearly important to learn about the implementation process of programmes that have been currently supported. The absence of positive impact of a particular intervention might be related to the way the programme was actually implemented. Furthermore, some nodes in the causal chain may not have been properly considered and addressed during the conceptualisation and implementation of the evaluation plan.

Thus, programmes that did not present good results should not be ruled out upfront. Rather, policy makers may consider drawing lessons from the problems of implementation and assess whether some aspects of a programme can be improved in order to achieve better results. Developing both a theory of change for the intervention at hand and designing the programmes in a way that makes their evaluation possible are important steps to enable learning from new programmes, understanding *whether* and *how* they work and use evidence to inform policy.

6.2 Implications for Research

The results of this review strongly suggest that additional research is needed to improve understanding of the impact of SME support programmes in LMICs. This review covered a long list of interventions but only few of them have been tried in more than two places. This review therefore indicates that replication of similar programmes across different contexts might be the way to go to generate knowledge in the field so that policy makers can implement programmes that are more likely to succeed in a particular environment.

Although many interventions with microenterprises have taken place in Africa and Asia, this review revealed a paucity of evaluations done for programmes in other regions in particular Africa. The small amount of evidence for Africa might be related to the fact that many countries in the region have less sophisticated and smaller SMEs, as discussed in McKenzie (2011).[46] This has several direct implications for research. First, it suggests that researchers may have some difficulty in conducting a randomised controlled trial to assess the impact of an intervention, because of sample size issues. Second, it suggests that small firms might face an array of constraints and therefore may need a package of interventions (a big push) to be able to grow (Campos et al. 2012 and de Mel, McKenzie and Woodruff, 2013). Thus, the generation of rigorous evidence of the impact of interventions designed to foster the

[46] Latin American countries that provide most of the studies included in this review usually have institutions that constantly design SME interventions. Also, most of these institutions have monitoring units that generate data for programme evaluations. Also, some African economies are dominated by rural and informal self-employed entrepreneurs, two types of firms not included in the review.

development of private sector in LMIC through the strengthening of SMEs becomes even more crucial in this case.

As noted above, the evaluation of SME support programmes should be complemented by a cost-effectiveness analysis whenever possible. It is very important to provide crucial information for policy makers about the resources needed to achieve a given target in improving productivity of the SME sector.

The evaluation of SME support intervention is not an easy task given the difficulties of isolating the treatment and control groups. However, as evidenced in the risk of bias assessment, authors should try to use all available methodological tools and reporting the details of the study design more carefully. For instance, authors should consider the use of tools such as the 3ie risk of bias tool and its adaptation in Baird et al. (2013) as a guide to consider the sources of bias and design and implement evaluations with lower risk of bias. This is crucial to improve the quality of the studies and provide a more credible account of the programmes being evaluated.

Fourth, the studies should, whenever possible, try to present a better qualitative discussion of the implementation processes related to the interventions under study. This aspect is often missed in the evidence included in this review. A structured account on how the programmes are designed and implemented is very informative to the interpretation of results and to better identify factors that might drive success and failure of these interventions.[47]

[47] It is paramount that this analysis is done simultaneously with the evaluation when researchers are in contact with staff of institutions responsible for the programmes evaluated. This is because researchers can learn about the tacit knowledge related to these programmes. The information gathered during this process should be clearly reported in the studies and, whenever possible, made publicly available.

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7. Information about This Review

7.1 Review Authors

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7.2 Roles and Responsibilities

Content and methodological expertise was evenly spread amongst the team members: each focuses from a different perspective on the challenges facing small businesses in developing-country contexts. Caio Piza and Tulio Cravo were the methodological leads on the review, both having expertise in impact evaluation techniques. Advice on information retrieval was kindly offered by John Eyers.

Who is responsible for the below areas? Please list their names:

- Content: Lauro Gonzalez, Caio Piza and Tulio Cravo
- Systematic review methods: Caio Piza
- Statistical analysis: Tulio Cravo and Caio Piza
- Information retrieval: John Eyers and Tulio Cravo.

7.3 Sources of Support

This review was conducted with funding from DFATD-Canada and with administrative and technical support from 3ie.

7.4 Declarations of Interest

We are not aware of potential conflicts of interest that could bias the findings of the review.

7.5 Plans for Updating the Review

We will transfer responsibility for maintaining this review to alternative authors suggested by the Coordinating Group.

Appendix A – Search strategies

SMEs Review

1. Social Sciences Citation Index (Web of Science) Strategy, 2000 Onwards – Searched 24 December 2014 – 707 hits

#13 #12 AND #5

#12 #11 AND #7

#11 #10 OR #9 OR #8 OR #6

#10 TS=(training OR "technical assistance")

#9 TS=("value chain*" OR cluster* OR network* OR (local NEAR/2 productive NEAR/2 system*) OR "collective action*")

#8 TS=(export* OR certification OR "market fair*")

#7 TS=(sme or smes or (small NEAR/2 medium NEAR/2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*)

#6 TS=((formaliz* OR formalis* OR formality OR (business NEAR/3 environment) OR institution* OR (property NEAR/3 registration) OR "regulatory framework*" OR export* OR certification OR "market fair*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching NEAR/3 grant*) OR Innovat* OR patent* OR trademark* OR (research NEAR/3 development) OR technology OR transfer))

#5 #4 OR #3 OR #2 OR #1 [LMICs Filter]

#4 TS=((lmic or lmics or "third world" or "lami countr*")) OR TS=(transitional countr*)

#3 TS=(((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income") NEAR/1 (economy or economies))) OR TS=((low* NEAR/1 (gdp or gnp or "gross domestic" or "gross national"))) OR TS=((low NEAR/3 middle NEAR/3 countr*))

#2 TS=("Developing Countries") OR TS=(Africa or Asia or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America") OR TS=(((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income" or underserved or "under served" or deprived or poor*) NEAR/1 (countr* or nation* or population* or world)))

#1 TS=(Afghanistan or Albania or Algeria or Angola or Antigua or Barbuda or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Barbados or Benin or Byelarus or Byelorussian or Belarus or Belorussian or Belorussia or Belize or Bhutan or Bolivia or Bosnia or Herzegovina or Hercegovina or Botswana or Brazil or Bulgaria or "Burkina Faso" or "Burkina Fasso" or "Upper Volta" or Burundi or Urundi or Cambodia or "Khmer Republic" or Kampuchea or Cameroon or Cameroons or Cameron or Camerons or "Cape Verde" or "Central African Republic" or Chad or Chile or China or Colombia or Comoros or "Comoro Islands" or Comores or Mayotte or Congo or Zaire or "Costa Rica" or "Cote d'Ivoire" or "Ivory Coast" or Croatia or Cuba or Djibouti or "French Somaliland" or Dominica or "Dominican Republic" or "East Timor" or "East Timur" or "Timor Leste" or Ecuador or Egypt or "United Arab Republic" or "El Salvador" or Eritrea or Ethiopia or Fiji or Gabon or "Gabonese

Republic" or Gambia or Gaza or "Georgia Republic" or "Georgian Republic" or Ghana or Grenada or Guatemala or Guinea or Guam or Guiana or Guyana or Haiti or Honduras or India or Maldives or Indonesia or Iran or Iraq or Jamaica or Jordan or Kazakhstan or Kazakh or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or "Kyrgyz Republic" or Kirghiz or Kirgizstan or "Lao PDR" or Laos or Latvia or Lebanon or Lesotho or Basutoland or Liberia or Libya or Lithuania or Macedonia or Madagascar or "Malagasy Republic" or Malaysia or Malaya or Malay or Sabah or Sarawak or Malawi or Nyasaland or Mali or "Marshall Islands" or Mauritania or Mauritius or "Agalega Islands" or Mexico or Micronesia or "Middle East" or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or "Netherlands Antilles" or New Caledonia or Nicaragua or Niger or Nigeria or "Northern Mariana Islands" or Oman or Muscat or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or "Papua New Guinea" or Portugal or Romania or Rumania or Roumania or Rwanda or Ruanda or "Saint Lucia" or "St Lucia" or "Saint Vincent" or "St Vincent" or Grenadines or Samoa or "Samoan Islands" or "Navigator Island" or "Navigator Islands" or "Sao Tome" or Senegal or Serbia or Montenegro or Seychelles or "Sierra Leone" or "Sri Lanka" or Ceylon or "Solomon Islands" or Somalia or Sudan or Suriname or Surinam or Swaziland or "South Africa" or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or Tanzania or Thailand or Togo or "Togolese Republic" or Tonga or Trinidad or Tobago or Tunisia or Turkey or Turkmenistan or Turkmen or Uganda or Ukraine or Uruguay or Uzbekistan or Uzbek or Vanuatu or "New Hebrides" or Venezuela or Vietnam or "Viet Nam" or "West Bank" or Yemen or Yugoslavia or Zambia or Zimbabwe)

2. Econlit (Ovid) Search Strategy, 2000 onwards – Searched 24 December 2014 - 890 hits

1. (formaliz* or formalis* or formality or (business adj3 environment) or institution* or (property adj3 registration) or "regulatory framework*" or export* or certification or "market fair*" or training or "technical assistance" or finance or credit or guarantee* or (matching adj3 grant*) or Innovat* or patent* or trademark* or (research adj3 development) or technology or transfer).ti,ab.

2. (export* or certification or "market fair*").ti,ab.

3. ("value chain*" or cluster* or network* or (local adj2 productive adj2 system*) or "collective action*").ti,ab.

4. (training or "technical assistance").ti,ab.

5. (sme or smes or (small adj2 medium adj2 (enterprise* or business*)) or "micro enterprise*" or microenterprise* or micro-enterprise*).ti,ab.

6. 1 or 2 or 3 or 4

7. 5 and 6

8. (lmic or lmics or "third world" or "lami countr*" or "transitional countr*").ti,ab.

9. (((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income") adj1 (economy or economies)) or (low* adj1 (gdp or gnp or "gross domestic" or "gross national")) or (low adj3 middle adj3 countr*)).ti,ab.

10. ("Developing Countries" or (Africa or Asia or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America") or ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income" or underserved or "under served" or deprived or poor*) adj1 (countr* or nation* or population* or world))).ti,ab.

11. (Afghanistan or Albania or Algeria or Angola or Antigua or Barbuda or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Barbados or Benin or Byelarus or Byelorussian or Belarus or Belorussian or Belorussia or Belize or Bhutan or Bolivia or Bosnia or Herzegovina or Hercegovina or Botswana or Brazil or Bulgaria or "Burkina Faso" or "Burkina Fasso" or "Upper Volta" or Burundi or Urundi or Cambodia or "Khmer Republic" or Kampuchea or Cameroon or Cameroons or Cameron or Camerons or "Cape Verde" or "Central African Republic" or Chad or Chile or China or Colombia or Comoros or "Comoro Islands" or Comores or Mayotte or Congo or Zaire or "Costa Rica" or "Cote d'Ivoire" or "Ivory Coast" or Croatia or Cuba or Djibouti or "French Somaliland" or Dominica or "Dominican Republic" or "East Timor" or "East Timur" or "Timor Leste" or Ecuador or Egypt or "United Arab Republic" or "El Salvador" or Eritrea or Ethiopia or Fiji or Gabon or "Gabonese Republic" or Gambia or Gaza or "Georgia Republic" or "Georgian Republic" or Ghana or Grenada or Guatemala or Guinea or Guam or Guiana or Guyana or Haiti or Honduras or India or Maldives or Indonesia or Iran or Iraq or Jamaica or Jordan or Kazakhstan or Kazakh or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or "Kyrgyz Republic" or Kirghiz or Kirgizstan or "Lao PDR" or Laos or Latvia or Lebanon or Lesotho or Basutoland or Liberia or Libya or Lithuania or Macedonia or Madagascar or "Malagasy Republic" or Malaysia or Malaya or Malay or Sabah or Sarawak or Malawi or Nyasaland or Mali or "Marshall Islands" or Mauritania or Mauritius or "Agalega Islands" or Mexico or Micronesia or "Middle East" or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or "Netherlands Antilles" or New Caledonia or Nicaragua or Niger or Nigeria or "Northern Mariana Islands" or Oman or Muscat or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or "Papua New Guinea" or Portugal or Romania or Rumania or Roumania or Rwanda or Ruanda or "Saint Lucia" or "St Lucia" or "Saint Vincent" or "St Vincent" or Grenadines or Samoa or "Samoan Islands" or "Navigator Island" or "Navigator Islands" or "Sao Tome" or Senegal or Serbia or Montenegro or Seychelles or "Sierra Leone" or "Sri Lanka" or Ceylon or "Solomon Islands" or Somalia or Sudan or Suriname or Surinam or Swaziland or "South Africa" or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or Tanzania or Thailand or Togo or "Togolese Republic" or Tonga or Trinidad or Tobago or Tunisia or Turkey or Turkmenistan or Turkmen or Uganda or Ukraine or Uruguay or Uzbekistan or Uzbek or Vanuatu or "New Hebrides" or Venezuela or Vietnam or "Viet Nam" or "West Bank" or Yemen or Yugoslavia or Zambia or Zimbabwe).ti,ab,ct.

12. or/8-11 [LMICs Filter]

13. 7 and 12

14. limit 13 to yr="2000 -Current" [890 hits]

Some Econlit subject headings that could be added to the strategy:

Financing Policy; Financial Risk and Risk Management; Capital and Ownership Structure; Value of Firms; Goodwill (G32)

Firm Performance: Size, Diversification, and Scope (L25)

Industrialization; Manufacturing and Service Industries; Choice of Technology (O14)

Economic Development: Urban, Rural, Regional, and Transportation Analysis; Housing; Infrastructure (O18)

Regional Economic Activity: Growth, Development, Environmental Issues, and Changes (R11)

Production; Cost; Capital; Capital, Total Factor, and Multifactor Productivity; Capacity (D24)

Business Taxes and Subsidies including sales and value-added (VAT) (H25)

Labor Demand (J23)

Formal and Informal Sectors; Shadow Economy; Institutional Arrangements (O17)

Other Spatial Production and Pricing Analysis (R32)

Bureaucracy; Administrative Processes in Public Organizations; Corruption (D73)

Business Taxes and Subsidies including sales and value-added (VAT) (H25)

Fiscal Policies and Behavior of Economic Agents: Firm (H32)

Contracting Out; Joint Ventures; Technology Licensing (L24)

Retail and Wholesale Trade; e-Commerce (L81)

Industry Studies: Manufacturing: General (L60)

3. Academic Search Complete (Ebsco) – Searched 23 July 2014- 962 hits

18 S9 AND S16 Limiters - Published Date: 20000101-20141231

Database - Academic Search Complete 1,247 [Limited to Academic Journals & Books – 962 hits]

S17 S9 AND S16

Database - Academic Search Complete 1,362

S16 S10 AND S15

Database - Academic Search Complete 2,589

S15 S11 OR S12 OR S13 OR S14

Database - Academic Search Complete 3,127,308

S14 TI ((training OR "technical assistance")) OR AB ((training OR "technical assistance")) OR SU ((training OR "technical assistance"))

Database - Academic Search Complete 290,257

S13 TI (("value chain*" OR cluster* OR network* OR (local N2 productive N2 system*) OR "collective action*")) OR AB (("value chain*" OR cluster* OR network* OR (local N2 productive N2 system*) OR "collective action*")) OR SU (("value chain*" OR cluster* OR network* OR (local N2 productive N2 system*) OR "collective action*"))

Database - Academic Search Complete 809,671

S12 TI ((export* OR certification OR "market fair*")) OR AB ((export* OR certification OR

"market fair*")) OR SU ((export* OR certification OR "market fair*"))

Database - Academic Search Complete 89,358

S11 TI (((formaliz* OR formalis* OR formality OR (business N3 environment) OR institution* OR (property N3 registration) OR "regulatory framework*" OR export* OR certification OR "market fair*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching N3 grant*) OR Innovat* OR patent* OR trademark* OR (research N3 development) OR technology OR transfer))) OR AB (((formaliz* OR formalis* OR formality OR (business N3 environment) OR institution* OR (property N3 registration) OR "regulatory framework*" OR export* OR certification OR "market fair*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching N3 grant*) OR Innovat* OR patent* OR trademark* OR (research N3 development) OR technology OR transfer))) OR SU (((formaliz* OR formalis* OR formality OR (business N3 environment) OR institution* OR (property N3 registration) OR "regulatory framework*" OR export* OR certification OR "market fair*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching N3 grant*) OR Innovat* OR patent* OR trademark* OR (research N3 development) OR technology OR transfer)))

Database - Academic Search Complete 2,470,463

S10 TI ((sme or smes or (small N2 medium N2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*)) OR AB ((sme or smes or (small N2 medium N2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*)) OR SU ((sme or smes or (small N2 medium N2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*))

Database - Academic Search Complete 6,021

S9 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8

Database - Academic Search Complete 10,566,022

S8 TI ("transitional countr*") OR AB ("transitional countr*") OR SU ("transitional countr*")

Database - Academic Search Complete 181

S7 TI (lmic or lmics or "third world" or "lami countr*") OR AB (lmic or lmics or "third world" or "lami countr*") OR SU (lmic or lmics or "third world" or "lami countr*")

Database - Academic Search Complete 8,848

S6 TI (low N3 middle N3 countr*) OR AB (low N3 middle N3 countr*) OR SU (low N3 middle N3 countr*)

Database - Academic Search Complete 2,668

S5 TI ((low* N1 (gdp or gnp or "gross domestic" or "gross national" or GNI)) OR AB ((low* N1 (gdp or gnp or "gross domestic" or "gross national" or GNI)) OR SU ((low* N1 (gdp or gnp or "gross domestic" or "gross national" or GNI))

Database - Academic Search Complete 9,592,894

S4 TI ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income") N1 (economy or economies)) OR AB ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income") N1 (economy or economies)) OR SU ((developing or "less* developed" or "under

developed" or underdeveloped or "middle income" or "low* income") N1 (economy or economies))

Database - Academic Search Complete 1,444

S3 TI ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income" or underserved or "under served" or deprived or poor*) N1 (countr* or nation* or population* or world)) OR AB ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income" or underserved or "under served" or deprived or poor*) N1 (countr* or nation* or population* or world)) OR SU ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income" or underserved or "under served" or deprived or poor*) N1 (countr* or nation* or population* or world))

Database - Academic Search Complete 71,415

S2 TI (Africa or Asia or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America") OR AB (Africa or Asia or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America") OR SU (Africa or Asia or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America")

Database - Academic Search Complete 331,293

S1 TI (Afghanistan or Angola or Albania or "American Samoa" or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Belarus or Belize or Benin or Bolivia or Bosnia or Herzegovina or Botswana or Brazil or Bulgaria or Burkina Faso or Burkina Fasso or Burundi or Urundi or Cambodia or Cameroon or Cameroons or Cameron or Camerons or Central African Republic or Chad or China or Colombia or Comoros or Comoro Islands or Comores or Congo or Costa Rica or Cuba or Zaire or Cote d'Ivoire or Ivory Coast or Djibouti or Dominica* or East Timor or East Timur or Timor Leste or Ecuador or Egypt or United Arab Republic or El Salvador or Eritrea or Ethiopia or Fiji or Gabon or Gambia or Gaza or Georgia Republic or Georgian Republic or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or Hungary or India or Indonesia or Iran or Iraq or Kazakhstan or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or Kyrgyz Republic or Kirghiz or Kirgizstan or Lao PDR or Laos or Lebanon or Lesotho or Liberia or Libya or Macedonia or Madagascar or Malagasy Republic or Malawi or Malaysia or Maldives or Marshall Islands or Mali or Mauritania or Mauritius or Agalega Islands or Mexico or Micronesia or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Nicaragua or Niger or Nigeria or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Romania or Rwanda or Ruanda or Samoa or Samoan Islands or Sao Tome or Senegal or Serbia or Seychelles or Sierra Leone or Sri Lanka or Solomon Islands or Somalia or South Africa or St Lucia or St Vincent or Grenadines or Sudan or Suriname or Swaziland or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or Tanzania or Thailand or Tonga or Togo or Togolese Republic or Tunisia or Turkey or Turkmenistan or Tuvalu or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or Venezuela or New Hebrides or Vietnam or Viet Nam or West Bank or Yemen or Zambia or Zimbabwe) OR AB (Afghanistan or Angola or Albania or "American Samoa" or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Belarus or Belize or Benin or Bolivia or Bosnia or Herzegovina or Botswana or Brazil or Bulgaria or Burkina Faso or Burkina Fasso or Burundi or Urundi or Cambodia or Cameroon or Cameroons or

Cameron or Camerons or Central African Republic or Chad or China or Colombia or Comoros or Comoro Islands or Comores or Congo or Costa Rica or Cuba or Zaire or Cote d'Ivoire or Ivory Coast or Djibouti or Dominica* or East Timor or East Timur or Timor Leste or Ecuador or Egypt or United Arab Republic or El Salvador or Eritrea or Ethiopia or Fiji or Gabon or Gambia or Gaza or Georgia Republic or Georgian Republic or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or Hungary or India or Indonesia or Iran or Iraq or Kazakhstan or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or Kyrgyz Republic or Kirghiz or Kirgizstan or Lao PDR or Laos or Lebanon or Lesotho or Liberia or Libya or Macedonia or Madagascar or Malagasy Republic or Malawi or Malaysia or Maldives or Marshall Islands or Mali or Mauritania or Mauritius or Agalega Islands or Mexico or Micronesia or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Nicaragua or Niger or Nigeria or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Romania or Rwanda or Ruanda or Samoa or Samoan Islands or Sao Tome or Senegal or Serbia or Seychelles or Sierra Leone or Sri Lanka or Solomon Islands or Somalia or South Africa or St Lucia or St Vincent or Grenadines or Sudan or Suriname or Swaziland or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or Tanzania or Thailand or Tonga or Togo or Togolese Republic or Tunisia or Turkey or Turkmenistan or Tuvalu or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or Venezuela or New Hebrides or Vietnam or Viet Nam or West Bank or Yemen or Zambia or Zimbabwe)OR SU (Afghanistan or Angola or Albania or "American Samoa" or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Belarus or Belize or Benin or Bolivia or Bosnia or Herzegovina or Botswana or Brazil or Bulgaria or Burkina Faso or Burkina Fasso or Burundi or Urundi or Cambodia or Cameroon or Cameroons or Cameron or Camerons or Central African Republic or Chad or China or Colombia or Comoros or Comoro Islands or Comores or Congo or Costa Rica or Cuba or Zaire or Cote d'Ivoire or Ivory Coast or Djibouti or Dominica* or East Timor or East Timur or Timor Leste or Ecuador or Egypt or United Arab Republic or El Salvador or Eritrea or Ethiopia or Fiji or Gabon or Gambia or Gaza or Georgia Republic or Georgian Republic or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or Hungary or India or Indonesia or Iran or Iraq or Kazakhstan or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or Kyrgyz Republic or Kirghiz or Kirgizstan or Lao PDR or Laos or Lebanon or Lesotho or Liberia or Libya or Macedonia or Madagascar or Malagasy Republic or Malawi or Malaysia or Maldives or Marshall Islands or Mali or Mauritania or Mauritius or Agalega Islands or Mexico or Micronesia or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Nicaragua or Niger or Nigeria or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Romania or Rwanda or Ruanda or Samoa or Samoan Islands or Sao Tome or Senegal or Serbia or Seychelles or Sierra Leone or Sri Lanka or Solomon Islands or Somalia or South Africa or St Lucia or St Vincent or Grenadines or Sudan or Suriname or Swaziland or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or Tanzania or Thailand or Tonga or Togo or Togolese Republic or Tunisia or Turkey or Turkmenistan or Tuvalu or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or Venezuela or New Hebrides or Vietnam or Viet Nam or West Bank or Yemen or Zambia or Zimbabwe)OR GE (Afghanistan or Angola or Albania or "American Samoa" or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Belarus or Belize or Benin or Bolivia or Bosnia or Herzegovina or Botswana or Brazil or Bulgaria or Burkina Faso or Burkina Fasso or Burundi

or Urundi or Cambodia or Cameroon or Cameroons or Cameron or Camerons or Central African Republic or Chad or China or Colombia or Comoros or Comoro Islands or Comores or Congo or Costa Rica or Cuba or Zaire or Cote d'Ivoire or Ivory Coast or Djibouti or Dominica* or East Timor or East Timur or Timor Leste or Ecuador or Egypt or United Arab Republic or El Salvador or Eritrea or Ethiopia or Fiji or Gabon or Gambia or Gaza or Georgia Republic or Georgian Republic or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or Hungary or India or Indonesia or Iran or Iraq or Kazakhstan or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or Kyrgyz Republic or Kirghiz or Kirgizstan or Lao PDR or Laos or Lebanon or Lesotho or Liberia or Libya or Macedonia or Madagascar or Malagasy Republic or Malawi or Malaysia or Maldives or Marshall Islands or Mali or Mauritania or Mauritius or Agalega Islands or Mexico or Micronesia or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Nicaragua or Niger or Nigeria or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Romania or Rwanda or Ruanda or Samoa or Samoan Islands or Sao Tome or Senegal or Serbia or Seychelles or Sierra Leone or Sri Lanka or Solomon Islands or Somalia or South Africa or St Lucia or St Vincent or Grenadines or Sudan or Suriname or Swaziland or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or Tanzania or Thailand or Tonga or Togo or Togolese Republic or Tunisia or Turkey or Turkmenistan or Tuvalu or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or Venezuela or New Hebrides or Vietnam or Viet Nam or West Bank or Yemen or Zambia or Zimbabwe)

4. Business Source Premier (Ebsco) – Searched 23 July 2014 – 1262 hits

S17 S9 AND S10 AND S15

View Results (2,144) (year 2000 onwards) [Limited to Academic journals, Books, Country reports, Industrial profiles, Market research reports = 1262 hits - downloaded]

S16 S9 AND S10 AND S15

View Results (2,265)

S15 S11 OR S12 OR S13 OR S14

View Results (3,370,510)

S14 TI ((training OR "technical assistance")) OR AB ((training OR "technical assistance")) OR SU ((training OR "technical assistance"))

View Results (189,571)

S13 TI (("value chain*" OR cluster* OR network* OR (local N2 productive N2 system*) OR "collective action*")) OR AB (("value chain*" OR cluster* OR network* OR (local N2 productive N2 system*) OR "collective action*")) OR SU (("value chain*" OR cluster* OR network* OR (local N2 productive N2 system*) OR "collective action*"))

View Results (609,701)

S12 TI ((export* OR certification OR "market fair*")) OR AB ((export* OR certification OR "market fair*")) OR SU ((export* OR certification OR "market fair*"))

View Results (190,568)

S11 TI (((formaliz* OR formalis* OR formality OR (business N3 environment) OR institution* OR (property N3 registration) OR "regulatory framework*" OR export* OR certification OR "market fair*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching N3 grant*) OR Innovat* OR patent* OR trademark* OR (research N3 development) OR technology OR transfer))) OR AB (((formaliz* OR formalis* OR formality OR (business N3 environment) OR institution* OR (property N3 registration) OR "regulatory framework*" OR export* OR certification OR "market fair*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching N3 grant*) OR Innovat* OR patent* OR trademark* OR (research N3 development) OR technology OR transfer))) OR SU (((formaliz* OR formalis* OR formality OR (business N3 environment) OR institution* OR (property N3 registration) OR "regulatory framework*" OR export* OR certification OR "market fair*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching N3 grant*) OR Innovat* OR patent* OR trademark* OR (research N3 development) OR technology OR transfer)))

View Results (2,929,882)

S10 TI ((sme or smes or (small N2 medium N2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*)) OR AB ((sme or smes or (small N2 medium N2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*)) OR SU ((sme or smes or (small N2 medium N2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*))

View Results (20,559)

S9 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8

View Results (1,333,515)

S8 TI ("transitional countr*") OR AB ("transitional countr*") OR SU ("transitional countr*")

View Results (158)

S7 TI (lmic or lmics or "third world" or "lami countr*") OR AB (lmic or lmics or "third world" or "lami countr*") OR SU (lmic or lmics or "third world" or "lami countr*")

View Results (5,077)

S6 TI (low N3 middle N3 countr*) OR AB (low N3 middle N3 countr*) OR SU (low N3 middle N3 countr*)

View Results (501)

S5 TI ((low* N1 (gdp or gnp or "gross domestic" or "gross national" or GNI)) OR AB ((low* N1 (gdp or gnp or "gross domestic" or "gross national" or GNI)) OR SU ((low* N1 (gdp or gnp or "gross domestic" or "gross national" or GNI))

View Results (299)

S4 TI ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income") N1 (economy or economies)) OR AB ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income") N1 (economy or economies)) OR SU ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income") N1 (economy or economies))

View Results (3,536)

S3 TI ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income" or underserved or "under served" or deprived or poor*) N1 (countr* or nation* or population* or world)) OR AB ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income" or underserved or "under served" or deprived or poor*) N1 (countr* or nation* or population* or world)) OR SU ((developing or "less* developed" or "under developed" or underdeveloped or "middle income" or "low* income" or underserved or "under served" or deprived or poor*) N1 (countr* or nation* or population* or world))

View Results (50,976)

S2 TI (Africa or Asia or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America") OR AB (Africa or Asia or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America") OR SU (Africa or Asia or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America")

View Results (297,571)

S1 TI (Afghanistan or Angola or Albania or "American Samoa" or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Belarus or Belize or Benin or Bolivia or Bosnia or Herzegovina or Botswana or Brazil or Bulgaria or Burkina Faso or Burkina Fasso or Burundi or Urundi or Cambodia or Cameroon or Cameroons or Cameron or Camerons or Central African Republic or Chad or China or Colombia or Comoros or Comoro Islands or Comores or Congo or Costa Rica or Cuba or Zaire or Cote d'Ivoire or Ivory Coast or Djibouti or Dominica* or East Timor or East Timur or Timor Leste or Ecuador or Egypt or United Arab Republic or El Salvador or Eritrea or Ethiopia or Fiji or Gabon or Gambia or Gaza or Georgia Republic or Georgian Republic or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or Hungary or India or Indonesia or Iran or Iraq or Kazakhstan or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or Kyrgyz Republic or Kirghiz or Kirgizstan or Lao PDR or Laos or Lebanon or Lesotho or Liberia or Libya or Macedonia or Madagascar or Malagasy Republic or Malawi or Malaysia or Maldives or Marshall Islands or Mali or Mauritania or Mauritius or Agalega Islands or Mexico or Micronesia or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Nicaragua or Niger or Nigeria or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Romania or Rwanda or Ruanda or Samoa or Samoan Islands or Sao Tome or Senegal or Serbia or Seychelles or Sierra Leone or Sri Lanka or Solomon Islands or Somalia or South Africa or St Lucia or St Vincent or Grenadines or Sudan or Suriname or Swaziland or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or Tanzania or Thailand or Tonga or Togo or Togolese Republic or Tunisia or Turkey or Turkmenistan or Tuvalu or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or Venezuela or New Hebrides or Vietnam or Viet Nam or West Bank or Yemen or Zambia or Zimbabwe)OR AB (Afghanistan or Angola or Albania or "American Samoa" or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Belarus or Belize or Benin or Bolivia or Bosnia or Herzegovina or Botswana or Brazil or Bulgaria or Burkina Faso or Burkina Fasso or Burundi or Urundi or Cambodia or Cameroon or Cameroons or Cameron or Camerons or Central African Republic or Chad or China or Colombia or Comoros or Comoro Islands or Comores or Congo or Costa Rica or Cuba or Zaire or Cote

d'Ivoire or Ivory Coast or Djibouti or Dominica* or East Timor or East Timur or Timor Leste or Ecuador or Egypt or United Arab Republic or El Salvador or Eritrea or Ethiopia or Fiji or Gabon or Gambia or Gaza or Georgia Republic or Georgian Republic or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or Hungary or India or Indonesia or Iran or Iraq or Kazakhstan or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or Kyrgyz Republic or Kirghiz or Kirgizstan or Lao PDR or Laos or Lebanon or Lesotho or Liberia or Libya or Macedonia or Madagascar or Malagasy Republic or Malawi or Malaysia or Maldives or Marshall Islands or Mali or Mauritania or Mauritius or Agalega Islands or Mexico or Micronesia or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Nicaragua or Niger or Nigeria or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Romania or Rwanda or Ruanda or Samoa or Samoan Islands or Sao Tome or Senegal or Serbia or Seychelles or Sierra Leone or Sri Lanka or Solomon Islands or Somalia or South Africa or St Lucia or St Vincent or Grenadines or Sudan or Suriname or Swaziland or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or Tanzania or Thailand or Tonga or Togo or Togolese Republic or Tunisia or Turkey or Turkmenistan or Tuvalu or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or Venezuela or New Hebrides or Vietnam or Viet Nam or West Bank or Yemen or Zambia or Zimbabwe)OR SU (Afghanistan or Angola or Albania or "American Samoa" or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Belarus or Belize or Benin or Bolivia or Bosnia or Herzegovina or Botswana or Brazil or Bulgaria or Burkina Faso or Burkina Fasso or Burundi or Urundi or Cambodia or Cameroon or Cameroons or Cameron or Camerons or Central African Republic or Chad or China or Colombia or Comoros or Comoro Islands or Comores or Congo or Costa Rica or Cuba or Zaire or Cote d'Ivoire or Ivory Coast or Djibouti or Dominica* or East Timor or East Timur or Timor Leste or Ecuador or Egypt or United Arab Republic or El Salvador or Eritrea or Ethiopia or Fiji or Gabon or Gambia or Gaza or Georgia Republic or Georgian Republic or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or Hungary or India or Indonesia or Iran or Iraq or Kazakhstan or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or Kyrgyz Republic or Kirghiz or Kirgizstan or Lao PDR or Laos or Lebanon or Lesotho or Liberia or Libya or Macedonia or Madagascar or Malagasy Republic or Malawi or Malaysia or Maldives or Marshall Islands or Mali or Mauritania or Mauritius or Agalega Islands or Mexico or Micronesia or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Nicaragua or Niger or Nigeria or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Romania or Rwanda or Ruanda or Samoa or Samoan Islands or Sao Tome or Senegal or Serbia or Seychelles or Sierra Leone or Sri Lanka or Solomon Islands or Somalia or South Africa or St Lucia or St Vincent or Grenadines or Sudan or Suriname or Swaziland or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or Tanzania or Thailand or Tonga or Togo or Togolese Republic or Tunisia or Turkey or Turkmenistan or Tuvalu or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or Venezuela or New Hebrides or Vietnam or Viet Nam or West Bank or Yemen or Zambia or Zimbabwe)OR GE (Afghanistan or Angola or Albania or "American Samoa" or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Belarus or Belize or Benin or Bolivia or Bosnia or Herzegovina or Botswana or Brazil or Bulgaria or Burkina Faso or Burkina Fasso or Burundi or Urundi or Cambodia or Cameroon or Cameroons or Cameron or Camerons or Central African Republic or Chad or China or Colombia or Comoros or Comoro Islands or Comores

or Congo or Costa Rica or Cuba or Zaire or Cote d'Ivoire or Ivory Coast or Djibouti or Dominica* or East Timor or East Timur or Timor Leste or Ecuador or Egypt or United Arab Republic or El Salvador or Eritrea or Ethiopia or Fiji or Gabon or Gambia or Gaza or Georgia Republic or Georgian Republic or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or Hungary or India or Indonesia or Iran or Iraq or Kazakhstan or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or Kyrgyz Republic or Kirghiz or Kirgizstan or Lao PDR or Laos or Lebanon or Lesotho or Liberia or Libya or Macedonia or Madagascar or Malagasy Republic or Malawi or Malaysia or Maldives or Marshall Islands or Mali or Mauritania or Mauritius or Agalega Islands or Mexico or Micronesia or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Nicaragua or Niger or Nigeria or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Romania or Rwanda or Ruanda or Samoa or Samoan Islands or Sao Tome or Senegal or Serbia or Seychelles or Sierra Leone or Sri Lanka or Solomon Islands or Somalia or South Africa or St Lucia or St Vincent or Grenadines or Sudan or Suriname or Swaziland or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or Tanzania or Thailand or Tonga or Togo or Togolese Republic or Tunisia or Turkey or Turkmenistan or Tuvalu or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or Venezuela or New Hebrides or Vietnam or Viet Nam or West Bank or Yemen or Zambia or Zimbabwe)

5. Scopus – Searched 23 July 2014 – 1018 hits

((TITLE-ABS-KEY((afghanistan OR albania OR algeria OR angola OR argentina OR armenia OR armenian OR aruba OR azerbaijan OR bangladesh OR benin OR byelarus OR byelorussian OR belarus OR belorussian OR belorussia OR belize OR bhutan OR bolivia OR bosnia OR herzegovina OR hercegovina OR botswana OR brasil OR brazil OR bulgaria OR "Burkina Faso" OR "Burkina Fasso" OR "Upper Volta" OR burundi OR urundi OR cambodia OR "Khmer Republic" OR kampuchea OR cameroon OR cameroons OR cameron OR camerons OR "Cape Verde" OR "Central African Republic" OR chad OR china OR colombia OR comoros OR "Comoro Islands" OR comores OR mayotte OR congo OR zaire OR "Costa Rica*" OR "Cote d'Ivoire" OR "Ivory Coast" OR cuba OR djibouti OR "French Somaliland" OR dominica OR "Dominican Republic" OR "East Timor" OR "East Timur" OR "Timor Leste" OR ecuador OR egypt OR "United Arab Republic" OR "El Salvador" OR eritrea OR ethiopia OR fiji OR gabon OR "Gabonese Republic" OR gambia OR gaza OR "Georgia Republic" OR "Georgian Republic" OR ghana OR grenada OR guatemala OR guinea OR guiana OR guyana OR haiti OR hungary OR honduras OR india OR maldives OR indonesia OR iran OR iraq OR jamaica OR jordan OR kazakhstan OR kazakh OR kenya OR kiribati OR korea OR kosovo OR kyrgyzstan OR kirghizia OR "Kyrgyz Republic" OR kirghiz OR kirgizstan OR "Lao PDR" OR laos OR lebanon OR lesotho OR basutoland OR liberia OR libya OR macedonia OR madagascar OR "Malagasy Republic" OR malaysia OR malaya OR malay OR sabah OR sarawak OR malawi OR mali OR "Marshall Islands" OR mauritania OR mauritius OR "Agalega Islands" OR mexico OR micronesia OR "Middle East" OR moldova OR moldovia OR moldovian OR mongolia OR montenegro OR morocco OR ifni OR mozambique OR myanmar OR myanma OR burma OR namibia OR nepal OR "Netherlands Antilles" OR "New Caledonia" OR nicaragua OR niger OR nigeria OR pakistan OR palau OR palestine OR panama OR paraguay OR peru OR philippines OR philipines OR phillipines OR phillippines OR "Puerto Ric*" OR romania OR rumania OR roumania OR

rwanda OR ruanda OR "Saint Lucia" OR "St Lucia" OR "Saint Vincent" OR "St Vincent" OR grenadines OR samoa OR "Samoan Islands" OR "Navigator Island" OR "Navigator Islands" OR "Sao Tome" OR senegal OR serbia OR montenegro OR seychelles OR "Sierra Leone" OR "Sri Lanka" OR "Solomon Islands" OR somalia OR "South Africa" OR sudan OR suriname OR surinam OR swaziland OR syria OR tajikistan OR tadzhikistan OR tadjikistan OR tadzhik OR tanzania OR thailand OR togo OR togolese republic OR tonga OR tunisia OR turkey OR turkmenistan OR turkmen OR uganda OR ukraine OR uzbekistan OR uzbek OR vanuatu OR "New Hebrides" OR venezuela OR vietnam OR "Viet Nam" OR "West Bank" OR yemen OR yugoslavia OR zambia OR zimbabwe))) OR (TITLE-ABS-KEY("Developing Countries" OR africa OR asia OR caribbean OR "West Indies" OR "South America" OR "Latin America" OR "Central America" OR ((developing OR "less* developed" OR "under developed" OR underdeveloped OR "middle income" OR "low* income" OR underserved OR "under served" OR deprived OR poor*) W/1 (countr* OR nation* OR population* OR world)))) OR (TITLE-ABS-KEY(((developing OR "less* developed" OR "under developed" OR underdeveloped OR "middle income" OR "low* income") W/1 (economy OR economies)) OR (low* W/1 (gdp OR gnp OR "gross domestic" OR "gross national")) OR (low W/3 middle W/3 countr*))) OR (TITLE-ABS-KEY(((lmic OR lmics OR "third world" OR "lami countr*")) OR "transitional countr*"))) AND (TITLE-ABS-KEY(sme OR smes) OR TITLE-ABS-KEY(small W/2 medium W/2 (enterprise* OR business*)) OR TITLE-ABS-KEY("micro enterprise*" OR microenterprise* OR micro-enterprise*)) AND ((TITLE-ABS-KEY(formaliz* OR formalis* OR formality OR (business W/3 environment) OR institution* OR (property W/3 registration) OR "regulatory framework*" OR export* OR certification OR "market fair*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching W/3 grant*) OR innovat* OR patent* OR trademark* OR (research W/3 development) OR technology OR transfer)) OR (TITLE-ABS-KEY(export* OR certification OR "market fair*")) OR (TITLE-ABS-KEY("value chain*" OR cluster* OR network* OR (local W/2 productive W/2 system*) OR "collective action*")) OR (TITLE-ABS-KEY(training OR "technical assistance"))) AND (LIMIT-TO(PUBYEAR, 2014) OR LIMIT-TO(PUBYEAR, 2013) OR LIMIT-TO(PUBYEAR, 2012) OR LIMIT-TO(PUBYEAR, 2011) OR LIMIT-TO(PUBYEAR, 2010) OR LIMIT-TO(PUBYEAR, 2009) OR LIMIT-TO(PUBYEAR, 2008) OR LIMIT-TO(PUBYEAR, 2007) OR LIMIT-TO(PUBYEAR, 2006) OR LIMIT-TO(PUBYEAR, 2005) OR LIMIT-TO(PUBYEAR, 2014) OR LIMIT-TO(PUBYEAR, 2013) OR LIMIT-TO(PUBYEAR, 2012) OR LIMIT-TO(PUBYEAR, 2011) OR LIMIT-TO(PUBYEAR, 2010) OR LIMIT-TO(PUBYEAR, 2009) OR LIMIT-TO(PUBYEAR, 2008) OR LIMIT-TO(PUBYEAR, 2007) OR LIMIT-TO(PUBYEAR, 2006) OR LIMIT-TO(PUBYEAR, 2005) OR LIMIT-TO(PUBYEAR, 2004) OR LIMIT-TO(PUBYEAR, 2003) OR LIMIT-TO(PUBYEAR, 2002) OR LIMIT-TO(PUBYEAR, 2001) OR LIMIT-TO(PUBYEAR, 2000) OR LIMIT-TO(PUBYEAR, 2014) OR LIMIT-TO(PUBYEAR, 2013) OR LIMIT-TO(PUBYEAR, 2012) OR LIMIT-TO(PUBYEAR, 2011) OR LIMIT-TO(PUBYEAR, 2010) OR LIMIT-TO(PUBYEAR, 2009) OR LIMIT-TO(PUBYEAR, 2008) OR LIMIT-TO(PUBYEAR, 2007) OR LIMIT-TO(PUBYEAR, 2006) OR LIMIT-TO(PUBYEAR, 2005) OR LIMIT-TO(PUBYEAR, 2004) OR LIMIT-TO(PUBYEAR, 2003) OR LIMIT-TO(PUBYEAR, 2002) OR LIMIT-TO(PUBYEAR, 2001) OR LIMIT-TO(PUBYEAR, 2000)) – [1018 hits]

6. Proquest Social Sciences Premium Collection (Databases Selected: ASSIA, IBSS, PAIS International, Sociological Abstracts, WPSA, Proquest Political Science Journals, Proquest Social Science Journals) **– Searched 25 July 2014 – 2484 hits**

(ti(("value chain*" OR cluster* OR network* OR (local NEAR/2 productive NEAR/2 system*)

OR "collective action*" OR export* OR certification OR "market fair" OR formaliz* OR formalis* OR formality OR (business NEAR/3 environment) OR institution* OR (property NEAR/3 registration) OR "regulatory framework*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching NEAR/3 grant*) OR Innovat* OR patent* OR trademark* OR (research NEAR/3 development) OR technology OR transfer)) OR ab(("value chain*" OR cluster* OR network* OR (local NEAR/2 productive NEAR/2 system*) OR "collective action*" OR export* OR certification OR "market fair" OR formaliz* OR formalis* OR formality OR (business NEAR/3 environment) OR institution* OR (property NEAR/3 registration) OR "regulatory framework*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching NEAR/3 grant*) OR Innovat* OR patent* OR trademark* OR (research NEAR/3 development) OR technology OR transfer)) OR su(("value chain*" OR cluster* OR network* OR (local NEAR/2 productive NEAR/2 system*) OR "collective action*" OR export* OR certification OR "market fair" OR formaliz* OR formalis* OR formality OR (business NEAR/3 environment) OR institution* OR (property NEAR/3 registration) OR "regulatory framework*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching NEAR/3 grant*) OR Innovat* OR patent* OR trademark* OR (research NEAR/3 development) OR technology OR transfer))) AND (ti((sme OR smes OR (small NEAR/2 medium NEAR/2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*)) OR ab((sme OR smes OR (small NEAR/2 medium NEAR/2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*)) OR su((sme OR smes OR (small NEAR/2 medium NEAR/2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*))) AND (Afghanistan or Angola or Albania or "American Samoa" or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Belarus or Belize or Benin or Bolivia or Bosnia or Herzegovina or Botswana or Brazil or Bulgaria or "Burkina Faso" or "Burkina Fasso" or Burundi or Urundi or Cambodia or Cameroon or Cameroons or Cameron or Camerons or "Central African Republic" or Chad or China or Colombia or Comoros or "Comoro Islands" or Comores or Congo or "Costa Rica" or Cuba or Zaire or "Cote d'Ivoire" or "Ivory Coast" or Djibouti or Dominica* or "East Timor" or "East Timur" or "Timor Leste" or Ecuador or Egypt or "United Arab Republic" or "El Salvador" or Eritrea or Ethiopia or Fiji or Gabon or Gambia or Gaza or "Georgia Republic" or "Georgian Republic" or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or Hungary or India or Indonesia or Iran or Iraq or Kazakhstan or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or "Kyrgyz Republic" or Kirghiz or Kirgizstan or "Lao PDR" or Laos or Lebanon or Lesotho or Liberia or Libya or Macedonia or Madagascar or "Malagasy Republic" or Malawi or Malaysia or Maldives or "Marshall Islands" or Mali or Mauritania or Mauritius or "Agalega Islands" or Mexico or Micronesia or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Nicaragua or Niger or Nigeria or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Romania or Rwanda or Ruanda or Samoa or "Samoan Islands" or "Sao Tome" or Senegal or Serbia or Seychelles or "Sierra Leone" or "Sri Lanka" or "Solomon Islands" or Somalia or "South Africa" or "St Lucia" or "St Vincent" or Grenadines or Sudan or Suriname or Swaziland or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or Tanzania or Thailand or Tonga or Togo or "Togolese Republic" or Tunisia or Turkey or Turkmenistan or Tuvalu or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or Venezuela or "New Hebrides" or Vietnam or "Viet Nam" or "West Bank" or Yemen or Zambia or Zimbabwe)Limits applied [Date Limit applied 2000-2014] – [2484 hits]

7. ABI/Inform (Proquest) – Searched 30 July 2014 [Limits: 2000-2014 – Academic jnls, Working papers, Conference papers, Theses]- 2957 hits

(ti(("value chain*" OR cluster* OR network* OR (local NEAR/2 productive NEAR/2 system*) OR "collective action*" OR export* OR certification OR "market fair" OR formaliz* OR formalis* OR formality OR (business NEAR/3 environment) OR institution* OR (property NEAR/3 registration) OR "regulatory framework*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching NEAR/3 grant*) OR Innovat* OR patent* OR trademark* OR (research NEAR/3 development) OR technology OR transfer)) OR ab(("value chain*" OR cluster* OR network* OR (local NEAR/2 productive NEAR/2 system*) OR "collective action*" OR export* OR certification OR "market fair" OR formaliz* OR formalis* OR formality OR (business NEAR/3 environment) OR institution* OR (property NEAR/3 registration) OR "regulatory framework*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching NEAR/3 grant*) OR Innovat* OR patent* OR trademark* OR (research NEAR/3 development) OR technology OR transfer)) OR su(("value chain*" OR cluster* OR network* OR (local NEAR/2 productive NEAR/2 system*) OR "collective action*" OR export* OR certification OR "market fair" OR formaliz* OR formalis* OR formality OR (business NEAR/3 environment) OR institution* OR (property NEAR/3 registration) OR "regulatory framework*" OR training OR "technical assistance" OR finance OR credit OR guarantee* OR (matching NEAR/3 grant*) OR Innovat* OR patent* OR trademark* OR (research NEAR/3 development) OR technology OR transfer))) AND (ti((sme OR smes OR (small NEAR/2 medium NEAR/2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*)) OR ab((sme OR smes OR (small NEAR/2 medium NEAR/2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*)) OR su((sme OR smes OR (small NEAR/2 medium NEAR/2 (enterprise* OR business*)) OR "micro enterprise*" OR microenterprise* OR micro-enterprise*))) AND (Afghanistan or Angola or Albania or "American Samoa" or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Belarus or Belize or Benin or Bolivia or Bosnia or Herzegovina or Botswana or Brazil or Bulgaria or "Burkina Faso" or "Burkina Fasso" or Burundi or Urundi or Cambodia or Cameroon or Cameroons or Cameron or Camerons or "Central African Republic" or Chad or China or Colombia or Comoros or "Comoro Islands" or Comores or Congo or "Costa Rica" or Cuba or Zaire or "Cote d'Ivoire" or "Ivory Coast" or Djibouti or Dominica* or "East Timor" or "East Timur" or "Timor Leste" or Ecuador or Egypt or "United Arab Republic" or "El Salvador" or Eritrea or Ethiopia or Fiji or Gabon or Gambia or Gaza or "Georgia Republic" or "Georgian Republic" or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or Hungary or India or Indonesia or Iran or Iraq or Kazakhstan or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or "Kyrgyz Republic" or Kirghiz or Kirgizstan or "Lao PDR" or Laos or Lebanon or Lesotho or Liberia or Libya or Macedonia or Madagascar or "Malagasy Republic" or Malawi or Malaysia or Maldives or "Marshall Islands" or Mali or Mauritania or Mauritius or "Agalega Islands" or Mexico or Micronesia or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Nicaragua or Niger or Nigeria or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Romania or Rwanda or Ruanda or Samoa or "Samoan Islands" or "Sao Tome" or Senegal or Serbia or Seychelles or "Sierra Leone" or "Sri Lanka" or "Solomon Islands" or Somalia or "South Africa" or "St Lucia" or "St Vincent" or Grenadines or Sudan or Suriname or Swaziland or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhik or

Tanzania or Thailand or Tonga or Togo or "Togolese Republic" or Tunisia or Turkey or Turkmenistan or Tuvalu or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or Venezuela or "New Hebrides" or Vietnam or "Viet Nam" or "West Bank" or Yemen or Zambia or Zimbabwe) [2957 hits]

Appendix B – Detailed Description of Risk of Bias[48]

1) Selection bias and confounding

a) For Randomised assignment (RCTs),

Score “YES” if:

• A random component in the sequence generation process is described (e.g. referring to a random number table)[49];

• And if the unit of allocation was at group level (geographical/ social/ institutional unit) and allocation was performed on all units at the start of the study,

• or if the unit of allocation was by beneficiary or group and there was some form of centralised allocation mechanism such as an on-site computer system;

• And if the unit of allocation is based on a sufficiently large sample size to equate groups on average.

• Baseline characteristics of the study and control/comparisons are reported and overall[50] similar based on t-test or ANOVA for equality of means across groups,

• Or covariate differences are controlled using multivariate analysis;

• And the attrition rates (losses to follow up) are sufficiently low and similar in treatment and control, or the study assesses that loss to follow up units are random draws from the sample (e.g. by examining correlation with determinants of outcomes, in both treatment and comparison groups);

• And problems with cross-overs and drop outs are dealt with using intention-to-treat analysis or in the case of drop outs, by assessing whether the drop outs are random draws from the population;

• And, for cluster-assignment, authors control for external cluster-level factors that might confound the impact of the programme (e.g. weather, infrastructure, community fixed effects, etc.) through multivariate analysis.

Score “UNCLEAR” if:

• The paper does not provide details on the randomisation process, or uses a quasi-randomization process for which it is not clear has generated allocations equivalent to true randomisation.

• Insufficient details are provided on covariate differences or methods of adjustment;

• Or insufficient details are provided on cluster controls.

Score “NO” if:

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[48] This tool is taken directly from Hombrados and Waddington (2012).

[49] Even in the context of RCTs, when randomisation is successful and carried out over sufficiently large assignment units, it is possible that small differences between groups remain for some covariates. In these cases, study authors should use appropriate multivariate methods to correcting for these differences.

[50] Even in the context of RCTs, when randomisation is successful and carried out over sufficiently large assignment units, it is possible that small differences between groups remain for some covariates. In these cases, study authors should use appropriate multivariate methods to correcting for these differences.

• The sample size is not sufficient or any failure in the allocation mechanism or execution of the method could affect the randomisation process[51].

b) For regression discontinuity design

Score “YES” if:

• Allocation is made based on a pre-determined discontinuity on a continuous variable (regression discontinuity design) and blinded to participants or,

• If not blinded, individuals reasonably cannot affect the assignment variable in response to knowledge of the participation decision rule;

• And the sample size immediately at both sides of the cut-off point is sufficiently large to equate groups on average.

• The interval for selection of treatment and control group is reasonably small,

• Or authors have weighted the matches on their distance to the cut-off point,

• And the mean of the covariates of the individuals immediately at both sides of the cut-off point (selected sample of participants and non-participants) are overall not statistically different based on t-test or ANOVA for equality of means,

• Or significant differences have been controlled in multivariate analysis;

• And, for cluster-assignment, authors should control for factors that might confound the impact of the programme.

Score “UNCLEAR” if:

• The assignment variable is either non-blinded or it is unclear whether participants can affect it in response to knowledge of the allocation mechanism.

• There are covariate differences across individuals at both sides of the discontinuity which have not been controlled for using multivariate analysis, or if insufficient details are provided on controls,

• Or if insufficient details are provided on cluster controls.

Score “NO” if:

• The sample size is not sufficient or

• There is evidence that participants altered the assignment variable prior to assignment.[52]

c) For identification based on an instrumental variable (IV estimation)

Score “YES” if:

[51] If the research has serious concerns with the validity of the randomisation process or the group equivalence completely fails, we recommend to assess the risk of bias of the study using the relevant questions for the appropriate methods of analysis (cross-sectional regressions, difference-in-difference, etc.) rather than the RCTs questions.

[52] If the research has serious concerns with the validity of the assignment process or the group equivalence completely fails, we recommend to assess the risk of bias of the study using the relevant questions for the appropriate methods of analysis (cross-sectional regressions, difference-in-difference, etc) rather than the RDDs questions.

• The instrumental variable should be highly correlated with the endogeneous variable and satisfy the exclusion restriction (affect the outcome only through its effect on the endogeneous variable);

• A valid instrument should have a F≥10 (or if an F test is not reported, the authors should report the partial R-squared (goodness of fit) of the participation equation;

• Where at least two instruments are used, the authors should report on an over-identifying test;

• And, for cluster-assignment, authors have to control for factors that might confound the impact of the programme.

Score “UNCLEAR” if:

• The exogeneity of the instrument is unclear (both externally as well as why the variable should not enter by itself in the outcome equation).

• Relevant confounders are controlled but appropriate statistical tests are not reported or exogeneity[53] of the instrument is not convincing,

• or if insufficient details are provided on cluster controls (see category f) below).

Score “NO” otherwise.

d) For assignment based non-randomised programme placement and self-selection (studies using a matching strategy or regression analysis (excluding IV), studies which apply other methods)

Score “YES” if:

• Participants and non-participants are either matched based on all relevant characteristics explaining participation and outcomes, or

• All relevant characteristics are accounted for. [54,55]

Score “UNCLEAR” if:

• It is not clear whether all relevant characteristics (only relevant time varying characteristics in the case of panel data regressions) are controlled.

Score “NO” if:

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[53] An instrument is exogenous when it only affects the outcome of interest through affecting participation in the programme. Although when more than one instrument is available, statistical tests provide guidance on exogeneity (see background document), the assessment of exogeneity should be in any case done qualitatively. Indeed, complete exogeneity of the instrument is only feasible using randomised assignment in the context of an RCT with imperfect compliance, or an instrument identified in the context of a natural experiment.

[54] Accounting for and matching on all relevant characteristics is usually only feasible when the programme allocation rule is known and there are no errors of targeting. It is unlikely that studies not based on randomisation or regression discontinuity can score “YES” on this criterion.

[55] There are different ways in which covariates can be taken into account. Differences across groups in observable characteristics can be taken into account as covariates in the framework of a regression analysis or can be assessed by testing equality of means between groups. Differences in unobservable characteristics can be taken into account through the use of instrumental variables (see also question 1.d) or proxy variables in the framework of a regression analysis, or using a fixed effects or difference-in-differences model if the only characteristics which are unobserved are time-invariant.

• Relevant characteristics are omitted from the analysis.

In addition:

d1) For non-randomised trials using panel data (including DID) models,

Score “YES” if:

• The authors use a difference-in-differences (or fixed effects) multivariate estimation method;

• The authors control for a comprehensive set of time-varying characteristics;[56]

• And the attrition rate is sufficiently low and similar in treatment and control, or the study assesses that drop-outs are random draws from the sample (e.g. by examining correlation with determinants of outcomes, in both treatment and comparison groups);

• And, for cluster-assignment, authors control for external cluster-level factors that might confound the impact of the programme (e.g. weather, infrastructure, community fixed effects, etc.) through multivariate analysis.

Score “UNCLEAR” if:

• Insufficient details are provided.

• Or, if insufficient details are provided on cluster controls.

Score “NO” otherwise, including if the treatment effect is estimated using raw comparison of means in statistically un-matched groups.

d2) For statistical matching studies including propensity scores (PSM) and covariate matching,[57]

Score “YES” if:

• Matching is either on baseline characteristics or time-invariant characteristics which cannot be affected by participation in the programme; and the variables used to match are relevant (e.g. demographic and socio-economic factors) to explain both participation and the outcome (so that there can be no evident differences across groups in variables that might explain outcomes) (see fn. 6).

• Rosembaum test for hidden bias.

• And, for cluster-assignment, authors should control for factors that might confound the impact of the programme.

Score “UNCLEAR” if:

[56] Knowing allocation rules for the programme – or even whether the non-participants were individuals that refused to participate in the programme, as opposed to individuals that were not given the opportunity to participate in the programme – can help in the assessment of whether the covariates accounted for in the regression capture all the relevant characteristics that explain differences between treatment and comparison.
[57] Matching strategies are sometimes complemented with difference-in-difference regression estimation methods. This combination approach is superior since it only uses in the estimation the common support region of the sample size, reducing the likelihood of existence of time-variant unobservable differences across groups affecting outcome of interest and removing biases arising from time-invariant unobservable characteristics.

• Relevant variables are not included in the matching equation, or if matching is based on characteristics collected at endline.

• Or, if insufficient details are provided on cluster controls.

Score “NO” otherwise.

d3) For regression-based studies using cross sectional data (excluding IV)

Score “YES” if:

• The study controls for relevant confounders that may be correlated with both participation and explain outcomes (e.g. demographic and socio-economic factors at individual and community level) using multivariate methods with appropriate proxies for unobservable covariates (see fn. 6).

• And a Hausman test[58] with an appropriate instrument suggests there is no evidence of endogeneity.

• And none of the covariate controls can be affected by participation;

• And either, only those observations in the region of common support for participants and non-participants in terms of covariates are used, or the distributions of covariates are balanced for the entire sample population across groups;

• And, for cluster-assignment, authors control for external factors that might confound the impact of the programme.

Score “UNCLEAR” if:

• Relevant confounders are controlled but appropriate proxy variables or statistical tests are not reported.

• Or, if insufficient details are provided on cluster controls.

Score “NO” otherwise. d4) For study designs which do not account for differences between groups using statistical methods, score “NO”.

2) Spill-overs: was the study adequately protected against performance bias?

Score “YES” if:

• The intervention is unlikely to spill-over to comparisons (e.g. participants and non-participants are geographically and/or socially separated from one another and general equilibrium effects are unlikely).[59]

Score “UNCLEAR” if:

[58] The Hausman test explores endogeneity in the framework of regression by comparing whether the OLS and the IV approaches yield significantly different estimations. However, it plays a different role in the different methods of analysis. While in the OLS regression framework the Hausman test mainly explores endogeneity and therefore is related with the validity of the method, in IV approaches it explores whether the author has chosen the best available strategy for addressing causal attribution (since in the absence of endogeneity OLS yields more precise estimators) and therefore is more related with analysis reporting bias.

[59] Contamination, that is differential receipt of other interventions affecting outcome of interest in the control or comparison group, is potentially an important threat to the correct interpretation of study results and should be addressed via PICO and study coding.

• Spill-overs are not addressed clearly.

Score “NO” if:

• Allocation was at individual or household level and there are likely spill-overs within firms and clusters which are not controlled for in the analysis;

• Or, if allocation at cluster level and there are likely spill-overs to comparison clusters.

3) Selective reporting: was the study free from outcome and analysis reporting biases?

Score “YES” if:
• There is no evidence that outcomes were selectively reported (e.g. all relevant outcomes in the methods section are reported in the results section).
• Authors use ‘common’ methods[60] of estimation and the study does not suggest the existence of biased exploratory research methods. [61]
For IV (including Heckman) models, score “YES” if: the authors test and report the results of a Hausman test for exogeneity ($p \leq 0.05$ is required to reject the null hypothesis of exogeneity), the coefficient of the selectivity correction term (Rho) is significantly different from zero ($P<0.05$) (Heckman approach). Where not reported, score “UNCLEAR”. Otherwise, score “NO”.
For studies using multivariate regression analysis, score “YES” if: authors conduct appropriate specification tests (e.g. reporting results of multicollinearity test, testing robustness of results to the inclusion of additional variables, etc). Where not reported or not convincing, score “UNCLEAR”. Otherwise, Score “NO”.
Score “NO” if:
• Some important outcomes are subsequently omitted from the results or the significance and magnitude of important outcomes was not assessed.
• Authors use uncommon or less rigorous estimation methods such as failure to conduct multivariate analysis for outcomes equations where it is has not been established that covariates are balanced.[62]
Score “UNCLEAR” otherwise.
4) Other: was the study free from other sources of bias?

Important additional sources of bias may include: concerns about blinding of outcome assessors or data analysts; concerns about blinding of beneficiaries so that expectations, rather than the intervention mechanisms, are driving results (detection bias or placebo effects)[63]; concerns about courtesy bias from outcomes collected through self-reporting; concerns about coherence of results; data on the baseline collected retrospectively;

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[60] ‘Common methods’ refers to the use of the most credible method of analysis to address attribution given the data available.
[61] A comprehensive assessment of the existence of ‘data mining’ is not feasible particularly in quasi-experimental designs where most studies do not have protocols and replication seems the only possible mechanism to examine rigorously the existence of data mining.
[62] For PSM and covariate matching, score “YES” if: where over 10% of participants fail to be matched, sensitivity analysis is used to re-estimate results using different matching methods (Kernel Matching techniques). For matching with replacement, no single observation in the control group is matched with a large number of observations in the treatment group. Where not reported, score “UNCLEAR”. Otherwise, score “NO”.
[63] All interventions may create expectations (placebo effects), which might confound causal mechanisms. In social interventions, which usually require behaviour change from participants, expectations may form an important component of the intervention, so that isolating expectation effects from other mechanisms may be less relevant.

information is collected using an inappropriate instrument (or a different instrument/at different time/after different follow up period in the comparison and treatment groups).

Score “YES” if:

• The reported results do not suggest any other sources of bias.

Score “UNCLEAR” if:

• Other important threats to validity may be present.

Score “NO” if:

• It is clear that these threats to validity are present and not controlled for.

Table A1: Results of risk of bias assessment for included studies

Authors	Year of Publication	Selection Bias and Confounding	Spill-overs, cross-overs and contamination	Outcome reporting	Analysis reporting	Other Risks of bias	Overall Risk Level
Victoria Castillo, Alessandro Maffioli, Ana P. Monsalvo, Sofía Rojo and Rodolfo Stucchi	2010	Unclear	Unclear	Yes	Yes	No	High
David McKenzie; Yaye Seynabou Sakho	2007	No	Unclear	Yes	Yes	Yes	Medium
João Alberto De Negri, Mauro Borges Lemos, and Fernanda De Negri	2006	No	Unclear	Yes	Yes	No	High
Inha Oh, Jeong-Dong Lee, Almas Heshmati, Gyoung-Gyu Choi	2008	Unclear	No	Yes	Yes	Yes	Medium
Pablo Sanguinetti	2005	No	Unclear	Yes	Yes	Yes	Medium
Francesca Cassano, Karin Joeveer and Jan Svejnar	2013	No	No	Yes	Unclear	Yes	High
Jose Miguel Benavente; Gustavo Crespi	2003	Unclear	Unclear	yes	Yes	Yes	Medium
José Miguel Benavente; Gustavo Crespi; Alessandro Maffioli	2007	Unclear	Yes	Yes	Yes	Yes	Low

Fajnzylber, Pablo & Maloney, William F. & Montes-Rojas, Gabriel V.	2011	No	Unclear	Yes	Unclear	Yes	High
Daniel Chudnovsky & Andrés López & Martín Rossi & Diego Ubfal	2006	No	Unclear	Yes	Yes	Yes	Medium
Miriam Bruhn	2011	No	Unclear	Yes	Unclear	Yes	High
Corseuil, L. Carlos Henrique & Moura, Rodrigo Leandro	2011	No	Unclear	Yes	Yes	Yes	Medium
Özçelik, Emre & Taymaz, Erol	2008	Unclear	Unclear	Yes	No	Yes	High
Karlan, Dean; Knight, Ryan;Udry, Christopher	2014	Unclear	No	Yes	Yes	Yes	Medium
Kalume, Luciana R. V.; Corseuil, Carlos Henrique L. ; Santos, Daniel D.	2013	No	Unclear	Yes	Unclear	Yes	High
Lopez-Acevedo , Gladys & Tinajero, Monica,	2010	No	No	Yes	Unclear	Yes	High
SEKKAT, KHALID	2011	Unclear	Unclear	Yes	Unclear	No	High
Machado, Luciano & Parreiras, Maria Araujo & Peçanha, Vinícius Rodrigues	2011	No	Unclear	Yes	Yes	No	High
Crespi, Gustavo & Maffioli, Alessandro & Melendez, Marcela	2011	Unclear	Unclear	Yes	Yes	Yes	Medium

Bob Rijkers; Caterina Ruggeri Laderchi and Francis Teal	2010	No	Unclear	Yes	Yes	No	High
John Rand and Nina Torm	2011	No	No	Yes	Yes	No	High
Hong Tan	2011	No	Unclear	Yes	Unclear	No	High
Juan Felipe Duque and Mariana Muñoz	2010	No	Unclear	Yes	Unclear	No	High
Miguel Jaramillo and Juan Jose Diaz	2010	No	Unclear	Yes	Unclear	Yes	High
Irani Arráiz; Francisca Henríquez; Rodolfo Stucchi	2012	No	Unclear	Yes	Unclear	Yes	High
Yukichi Mano; Alhassan Iddrisu; Yutaka Yoshino; Tetsuchi Sonobe	2011	Unclear	No	Yes	Unclear	No	High
Miriam Bruhn; Dean Karlan; Antoinette Schoar	2012	Yes	Unclear	Yes	Yes	No	Medium
Giacomo De Giorgi; Aminur Rahman	2013	No	Unclear	Yes	Yes	Yes	Medium
Eui Young Lee; Beom Cheol Cin	2010	Unclear	Unclear	Yes	No	Yes	High
Varouj A. Aivazian; Eric Santor	2008	No	Unclear	Yes	Unclear	Yes	High
Valeska Viola Geldres Weiss; María Soledad Etchebarne Lópes; Luis H. Bustos Medina	2011	No	Unclear	Yes	Unclear	Yes	High

Hong Tan; Gladys Lopez Acevedo	2005	No	Unclear	Yes	Yes	Yes	Medium
David Atkin; Amit K. Khandelwal; Adam Osman	2014	Unclear	Unclear	Yes	Yes	Yes	Medium
David Kaplan, Eduardo Piedra, Enrique Seira	2011	Unclear	Unclear	Yes	Yes	No	High
Suresh De Mel, David McKenzie, Christopher Woodruff	2012	Yes	Unclear	Yes	Yes	Yes	Low
Julien Gourdon, Jean Michel Marchat, Siddharth Sharma, Tara Vishwanath (Chapter 3 of book)	2011	No	No	Yes	Unclear	No	High
Christian Volpe Martincus, Jerónimo Carballo and Pablo M. Garcia	2012	Unclear	Unclear	No	Unclear	Yes	High
Christian Volpe Martincus and Jerónimo Carballo	2010	Unclear	Unclear	No	Unclear	No	High
Christian Volpe Martincus and Jerónimo Carballo	2008	Unclear	Unclear	Yes	Yes	Yes	Medium
Christian Volpe Martincus and Jerónimo Carballo	2010	Unclear	Unclear	No	Yes	No	High

APPENDIX C – Detailed evidence from African programmes

Since there were only a few studies examining public interventions aimed at SMEs in Africa, we carefully considered the contextualisation of the intervention, its scale and the size of targeted firms. With all its limitations, this allows us to better understand the interventions and consequently grasp whether they might potentially work in an African setting.

This qualitative analysis focuses on six studies reporting results from African countries: Rijkers et al. (2010) on a construction sector intervention in Ethiopia; Gourdon et al. (2011) on an export developing programme in Tunisia; Mano et al. (2012) on an SME management training programme in Kumasi, Ghana; Karlan et al. (2014), who looked at a cash grant and training programme for microenterprises in Accra, Ghana; Sekkat (2011), who focused on a training programme in Morocco, and Atkin et al. (2014) who conducted an RCT to assess the impact of access to foreign markets on firm performance for rug producers in Egypt. In the following, we will outline the features of these five programmes, the environmental factors that could be expected to influence the interventions' success or failure, and assess which issues arise as the most important.

An important constraint to the qualitative analysis was the absence of detailed documentation originating directly from the institutions that implemented the programmes described in the following section. Although this was expected in the case of Randomized Control Trials, since these were one-time interventions implemented by academic research teams, it came as a surprise in the case of programmes implemented by governments because it was assumed it was in their best interests to divulge this information. As a result of this lack of supplementary information, it was necessary to find alternative sources to clarify the contextual conditions in which the interventions were implemented and the challenges that they encountered. Nevertheless, as described in the next section, these sources are by no means to be treated as less rigorous or reliable than direct project documentation.

Methods used in the search for qualitative background materials

The search strategy consisted of a keyword search via Google and Google Scholar. In the case of interventions implemented by governments, the keywords included the names of the programmes themselves, as well as those related to the targeted city/country and the sector in question. In the case of RCTs, the keywords consisted of the targeted sectors in which the experiment was implemented (e.g. "Egypt textile"; "Egypt exports", etc.). The selection criteria for the sources were primarily that they should be published by international organizations known for their rigorous studies performed in developing countries, as well as their implementation of development-oriented programmes. According to this criterion, documents written with the support of the OECD, the World Bank, the UN and the European Training Foundation were chosen as reliable sources. In this category there were also included papers written in academic institutions, such as the Kwame Nkrumah University of Science and Technology. For pertinence and reliability in terms of academic papers, we selected those published in international peer-reviewed journals, and also assessed how well they aligned with the subject of the programme and with each other. In this sense, in addition of publications backed by multilateral and non-governmental organizations, papers published by journals such as *World Development, Journal of Science and Technology, International Journal of Business and Social Science* and *Journal of Development Studies*, among others, were included. Other publications written by the same authors as those

primary papers were also taken into account. Finally, in two cases some relevant information could be extracted from country ministries' websites.

Methods:

1. FAMEX project in Tunisia.

For this study, no internal documents were found since their website, http://www.famex.org.tn/ is not available. The researchers wrote to the study researchers by email, but their address famex@famex.org.tn no longer exists. The team also wrote to Tunisia's trade promotion agency, who did not reply. Therefore, most of the information used in the qualitative analysis comes from analyses made by the World Bank.

- Website http://www.famex.org.tn/ nonexistent
- Email sent to famex@famex.org.tn and rapidcontact@tunisiaexport.tn on 15 April 2015:

  Dear Madam/Sir,

  I am a researcher member of a team working on a project entitled "The Impacts of Business Support Services for Small and Medium Enterprises on Firm Performance in Low-and Middle-Income Countries: A Systematic Review", which is sponsored by the International Initiative for Impact Evaluation (3ie)/Canadian Department of Foreign Affairs, Trade and Development (DFATD).

  We are currently focusing our investigation on a qualitative analysis of various SME support programmes. CEPEX's programme FAMEX, for which there have been many quantitative analyses, is included in the analysis. The purpose of this analysis is to further research the programme's background, aim and evolution in order to obtain a comprehensive understanding of the programme.

  We have found several external documents made by organizations such as the World Bank that document and analyze FAMEX, but we have been unable to find internal documents written directly by Tunisia Export that provide a more direct insight of the programme. Therefore, we would like to kindly request you internal documents about the FAMEX programme, in case you have them. This would really help us with our research.

  Best regards,

  Ana Cristina Sierra

- Delivery Failure Notification received immediately:

Delivery to the following recipient failed permanently:

famex@famex.org.tn

Technical details of permanent failure:

DNS Error: Address resolution of famex.org.tn. failed: Domain name not found

----- Original message -----

DKIM-Signature: v=1; a=rsa-sha256; c=relaxed/relaxed;

d=gmail.com; s=20120113;

h=mime-version:from:date:message-id:subject:to:content-type;

bh=Abn9rWgrmjjO9vAt1BhDNVwyfwBCZeweWPsjQrOLCrQ=;

- Reply Received from administrateur@cepex.nat.tn on 17 April 2015:

Hello Miss

We will see if we can find any internal analysis document progran of FAMEX and send it to you as soon as possible.

Best regards

Mr.Chelly Lotfi

From CEPEX

No more replies were received.

2. Ghana's Tailoring Enterprises Intervention

Since the programme was a Randomized Control Trial implemented once by the authors themselves, the only document reviewed referring specifically to the programme was the paper itself. Therefore, in this case there was no need to search for institutional documentation referring to the programme.

Taking into account that the textile and garment industries are interdependent and studied as a whole in all papers, not only the tailoring industry (chosen by the authors for the trial) was analysed, but also the textile industry was thoroughly examined.

3. Ghana's Suame Cluster RCT

As in the previous case, since the programme was a Randomized Control Trial implemented once by the authors themselves, the only document reviewed referring specifically to the programme was the paper itself. Therefore, in this case there was no need to search for institutional documentation referring to the programme. The documentation search was based on relevant information regarding the creation, characteristics, development, and implications of the Suame Magazine.

4. Ethiopia's Addis Ababa Integrated Housing Development Programme

Very few related websites are functioning. Those that work have very limited information in English and do not provide any documentation at all. The versions in Amharic (Ethiopia's official language) do not provide much information either (from what I could figure, since this an unknown language with unknown characters). Also, I was unable to find any contact information in terms of emails; all I could find were a couple of phone numbers.

- Websites that did not work:

  http://www.addisababacity.gov.et/

  http://www.addisababa.gov.et/cs/addis-ababa-housing-and-construction-project-office-aahdo-

- Websites that work did not provide useful information:

  Addis Ababa Housing Construction Project:

  http://www.aahdpo.gov.et/

  Addis Ababa Design and Construction Administration Development Bureau:

  http://www.dcadb.gov.et/index.php/en/

Micro & Small Scale Enterprises Development Bureau:

http://www.aamicrosmall.gov.et/

5. Morocco's Training Programmes

The general approach of this analysis regarding training programmes is a result of Sekkat's own research question: "investigate the relationship between a firm's training decision in 1999 and labour productivity in subsequent years". This means he did not investigate the effect of a specific training programme, but any training initiative taken by the firm. Therefore, the investigation approach in this case focused on researching the different training programmes (public and private) that took place in Morocco in years following 1999.

Some useful information was retrieved from the Ministry of Economy and Finance Kingdom of Morocco (2015) regarding the Office of Vocational Training and Labor Promotion (OFPPT):

http://www.finances.gov.ma/en/Pages/Strat%C3%A9gies/Strat%C3%A9gie-de-l%E2%80%99Office-de-la-Formation-Professionnelle-et-de-la-Promotion-du-Travail-OFPPT.aspx?m=Investors&m2=Investments

6. Egypt Textile sector RCT

Since the programme was a Randomized Control Trial implemented once by the authors themselves, the only document reviewed referring specifically to the programme was the paper itself. Therefore, in this case there was no need to search for institutional documentation referring to the programme. Nevertheless, we emailed the study authors to ask if there were any additional or background materials we should consult, in response to which they provided a website with a synopsis of the study and its results. The background to the textile industry in Egypt, along with the policy and institutional context for training programmes in the sector, was researched using the available resources on Google Scholar and using Google Search.

Results

A two-way research was performed: the literature cited by the main papers was checked, as well as documents that included the quantitative analysis papers in their references. Even though we believe that the additional search reported above is able to identify the main information directly related to the papers included in the quantitative part, tailored search string codes were not run for these programmes in the fashion of the search strategy shown in appendix A due to time and resources constraints. This implies that the collection of evidence presented below is not necessarily a comprehensive overview of the existing evidence on these interventions and needs to be interpreted with caution. Future research may want to expand on this work by conducting more-comprehensive searches for additional qualitative evidence and project documentation about the included programmes.

Ethiopia

Rijkers et al. (2010) analyse the results of the Addis Ababa Integrated Housing Programme (AAIHDP), an intervention that used a matching grant strategy for MSEs (Micro and Small Enterprises) in the construction sector in Addis Ababa in order to persuade small firms to adopt new technologies, expecting that this would increase labour intensity and earnings,

with pro-poor effects. The study finds, however, that the programme was not successful since the treatment group did not show more employment generation than the control group.
Background and context: During the start of the AAIHDP programme in the 2000's Ethiopia's economy has been characterized by relatively high real GDP growth and monetary stability: the Ethiopian economy grew by 10 per cent in 2006/07 – the fastest of any non-oil producer in sub-Saharan Africa that year. The country has received significant foreign investment inflow, particularly from China and India, and returnees from the United States and Europe have also been investing in hotels, bars, shops and restaurants and the real estate market. This investment has caused the construction sector in Addis Ababa and the major regional capital cities to expand, with a new market developing for high-rise buildings (Ayenew 2009). The expansion has created new jobs in the sector, with 41 per cent of the government's total investment in 2005/6 going to commercial and residential construction. These figures underline the importance of the sector to the Ethiopian economy as a generator of jobs, and as a necessary engine for the growth of other sectors as a result of modernisation, investment and return migration.

Urbanisation: Ethiopia's government is prioritising urbanisation at a time when the country is the least urbanised in the world. In 1994, only 13.8 per cent of the country's total population, or about 7.5 million people, were living in urban areas. The level of urbanization of Ethiopia at that time was about half of that of Kenya, a third of that of Nigeria and 57 per cent lower than the average for sub-Saharan Africa as a whole (Kassahun and Tiwari, 2012). Policy efforts to support urbanisation centre around Addis Ababa because the city is the country's administrative, economic, and financial centre, and therefore the main recipient of foreign investment in sectors other than agriculture – but also because it is the chief destination for migrants, and therefore likely to keep growing as investment rises. The city is currently home to 30 per cent of the country's urban population (Kassahun and Tiwari, 2012).

Despite the government's focus, Addis Ababa has serious poverty and housing problems. Its housing shortage was estimated in 2004 at between 250,000 and 300,000 housing units (IHDP, 2004), and continued to increase by approximately 40,000 units each year thereafter (Construction Ahead, 2005). Existing housing is of very poor quality, and has been challenged by population growth, immigration, dilapidation, a progressively increasing diaspora demand for housing, a lack of alternative investment opportunities and speculation. The government has in the past imposed restrictive land policies, diminished the role of the private sector in housing development, and has seen severe shortages of inputs such as cement, causing price escalations and delays in building projects (Rijkers et al. 2010). Over half of the housing stock is constructed out of temporary materials which deteriorate quickly (Ayenew, 2009). Ethiopia's urban poverty is very high, with nearly 40 per cent of the nation's urban dwellers living below the poverty line (Kassahun and Tiwari, 2012).

Larger economic problems also plagued the city at the time of the programme's start: inflation rose to 29.6 per cent in March 2008, with food price inflation even higher (39.4%). Some reports indicated the inflation rate in January 2008 to be in the range of 36 per cent. The World Bank's reported figure was a 50 per cent inflation rate during the same period. The housing market was badly affected by this inflation. First, it led to sharp increases in the price of construction materials, such as cement and steel, and second, to steep rises in house rents in Addis Ababa and regional cities, making housing unaffordable to many. Reforms in the areas of customs, business regulation, and registration helped stimulate

housing supply by relaxing financing constraints, alleviating the burden of bureaucratic procedures, and marginally increasing the availability of land. However many challenges for the sector persisted, including difficulties in obtaining inputs, finance, and accessing land, inadequate regulation, insurance, technological knowhow and equipment; unpredictable tax liabilities, and corruption in bidding and tender procedures (World Bank, 2009).

Employment: Ethiopia's labour force has grown strongly in the 2000s due to high population growth. The country had an estimated 32.2 million workers in 2005, up from an estimated 12.9 million in 1984, and the employment challenge was expected to double over the years to 2030 (Ayenew 2009). More than 80 per cent of the labour force was employed in subsistence agriculture in 2005, and the majority of employment was informal (Ayenew, 2009). Urban unemployment declined slightly over the period of the study, from 32.1 per cent in 2003 to 28.6 per cent in 2006 (ibid.), and in the early 2000s, the urban informal sector accounted for almost 40.7 per cent of urban employment, with a significant rise in gross income in the sector between 1996 and 2002 (from 1.6 per cent to 8 per cent) due to the absorption of more workers into the informal sector following specific liberalizations in the economy (Kassahun and Tiwari, 2012).

The construction sector: The firms operating in the construction sector can be divided into contractors and non-contractors. Contractors are licensed to build structures, while non-contractors are typically providers of inputs and are not themselves licensed to build. Contractors have a license grade between 12 and one; the lower the license grade, the bigger the projects the contractor is allowed to undertake (World Bank, 2009). Rijkers et al. (2010) in their study define as contractors those with a license grade between six and one, i.e. those who may engage in building larger structures.

Urban development policy: After a period of liberalisation in the 1990s, Ethiopia's labour market was deregulated and the exchange rate became partially market-based. Most formerly state-owned enterprises were sold off to domestic and foreign private investors (Ayenew, 2009). The government which has been in power since the early 1990s has a history of strong pro-poor spending, and compared to other African countries for which data are available Ethiopia is one of the leaders in pro-poor expenditures (Kassahun and Tiwari, 2012). The National Urban Development Policy was developed and approved by the Federal Council of Ministers in March 2005, with the government also legislating to make leasehold tenure the only urban landholding system. It also instated a policy in 2003 to encourage the construction of collective housing units ('condominium houses') (ibid).

The stated aims of government for the period 2005-2010 in which the study was conducted were to reduce urban unemployment to below 20 per cent of the economically active population; to reduce slum areas in Ethiopia's main cities by 50 per cent with a national integrated housing development programme that integrates public and private sector investment with microenterprise development and provision of basic services; to increase access to land and basic services, and to strengthen urban-rural and urban-urban linkages by consolidating efforts in the larger towns and launching a small towns development programme. The Urban Development Package and Urban Good Governance Package focus on institutional development and systems reform, developing housing, reducing unemployment and poverty, and increasing the capacity of the construction industry through the creation of Micro and Small Enterprises. It was under these packages that the integrated housing development programme was initiated (Kassahun and Tiwari, 2012). The housing development programme links with the objective of providing jobs to unemployed urban

youth, and thus merges a training and employment creation objective with that of increasing the supply of housing.

The programme: The Addis Ababa Integrated Housing Development Programme (AAIHDP) was launched as the managing authority for the national housing development project in 2004, to create new housing on either brown-field sites or cleared slum areas. The project creates only condominium housing: multi-storied housing units for several households where communal areas are jointly owned and managed. The AAIHDP's mandate was to reduce slum areas in in Addis Ababa by 50% and address and improve the unemployment rate in the capital by 2009 (UN-Habitat 2011). It was to do this by constructing 192,500 houses, generate 80,000 job opportunities, support 1300 existing SMEs and create another 1000 new ones (World Bank 2009). As of mid-2010, however, it had resulted in a total of 80,257 new housing units (UN-Habitat 2011). The programme's rationale was that the market could not deliver enough low-cost housing quickly enough, nor did the available industrial technology allow for the construction of low-cost houses. Thus micro and small scale enterprises were specifically included in the programme to promote low-cost technologies that could be operated by low-skilled workers and could be implemented extensively in a short period of time. SME's were also useful to the project because of their low overheads and labour-intensiveness, which would reduce costs while boosting employment. The programme also implicitly aims to support SME's for capacity creation and the adoption of new technologies. (It should be noted that the employment creation target is ill defined as the administration's definition of a 'job opportunity' is not very informative (World Bank, 2009))

Financing: The Integrated Housing Development Programme was entirely financed by public resources, initially from the Addis Ababa city government's own account, and then as of 2007 through a bond purchase from the Commercial Bank of Ethiopia, which then became the only independent financial resource for the housing programme, providing ETB 3.2 billion (USD 246 million) in bonds to the government and receiving a return of ETB 2 billion (USD 153 million) (UN-HABITAT, 2011).

Production Process: To produce housing affordable to low-income people, the IHDP builds basic, homogeneous housing using novel low-cost construction technologies, cheaper inputs, fixed-price contracts and a standardized production procedure permitting greater specialization. Particularly important are the introduction of new technologies, such as pre-cast beams and ribslabs, reducing the needs for material inputs and formwork, and the fixed price system, which forces firms to sell their outputs below the market price in exchange for the support they receive (World Bank, 2009).

Programme administration: The AAIHDP programme office creates new MSMEs by registering eligible owners, testing their skills and forming the enterprises. Most applicants choose to form cooperatives. Only MSMEs formed by the programme can bid for contracts with the programme, although if newly organized SMEs are unwilling or unable to complete certain works, other licensed SMEs are invited to apply. Based on anecdotal evidence this is not very common (Rijkers et al. 2010). Contracts are awarded on a first-register, first-served basis, unless there are more contractors than jobs in which case a draw is held (ibid). The AAIHDP provides premises, credit, training and access to inputs, and machinery for the building materials. It also provides space through land grants.

Challenges: The programme is increasingly coming under scrutiny because of doubts as to whether this scheme will provide sufficient affordable housing for the low and very low income groups (Ayenew, 2009). This is for several reasons: first, the sector has seen sharp rises in prices of construction materials. This increase in the cost of construction has led to a problem where much of the housing that was initially built has become occupied by higher-income households who could afford to pay full price, crowding out poor and low-income households. Many tenants abandon the housing because of difficulties adapting to multi-storey living, subletting to higher-income tenants for substantial profits. Furthermore, 80 per cent of the urban population cannot afford the price of the new housing, even with low-interest loans, the down payment and monthly payments are not affordable to 80 per cent of the population (Curran 2007).

Results and Conclusion: Rijkers et al. (2010) find that the programme was not successful in significantly changing the level of technology used in building housing in Ethiopia, and that more jobs per unit of investment have not been created. They do find, however, that there is an earnings premium associated with programme participation which is unlikely to be driven by selection bias and which appears to be larger for lower-paid workers. Possible problems with these results are a two-sided selection problem, since firms self-select into the programme and the programme also selects firms, and also that information was lacking for 71 firms, reducing the sample studied to 169.

The additional results found by World Bank (2009) strongly suggest that the IHDP has not had the job creation impact it was designed to have. Programme firms are not more labour-intensive than non-programme firms and in fact hire more high-skilled workers than non-programme firms. In addition, programme firms do not draw disproportionately on the low-skilled, the unemployed, youth or women, which is in line with the overall tendency of the labour market in the country. This is supported by the work of Dale (2014), who finds that during the period 2009 to 2013 although the unemployment rate in Addis Ababa declined by 6.3 per cent, the youth unemployment rate – the particular focus of the AAIHDP – dropped only by half (3.3%) of the general unemployment trend in the city.

On the other hand, programme participants do have lower predicted welfare and earn more than non-programme participants. Paradoxically, the programme premium is most probably due to a correlation between firm-size and wages; once firm-size is controlled for the programme premium disappears, although the possibility that the programme premium is driven by differences in unobservable characteristics between programme and non-programme participants cannot be ruled out entirely. The study by the World Bank (2009) also shows that programme firms use a different technology than non-programme firms and that contractors employ technologies that differ from those used by non-contractors. While it is true that the output of IHPD firms is more responsive to increases in inputs, they also tend to be less efficient, so that the average productivity of programme firms and non-programme firms is very similar. If these patterns can be extrapolated, then the low-cost technology introduced by the programme would lead to higher productivity should it be employed in larger firms. In contrast to studies of manufacturing firms across Africa, Rijkers et al.'s study does not find that capital intensity and labour productivity increase with firm size.

Tunisia

Gourdon et al. (2011) analyse the FAMEX II programme in Tunisia, which provided matching grants starting in 2005 to more than 1,000 firms (with eligibility determined by their turnover rather than number of employees) as export-development assistance on a cost-sharing

basis. The national export promotion agency provided 50 per cent of the cost of export development plans for approved firms. The authors conducted a survey to assess the programme's impact. Using firm-level data with a difference-in-difference approach, they found that the programme had positive impacts on export growth, with export values for treated firms growing at a 38.9 per cent higher rate during 2004-8 and an average annual growth in the number of exported products that was 5 per cent higher for participants. Estimated impacts on total firm sales and employment are weak, and it was not possible to assess any change in profits with the available data.

Background and context: Tunisia's export sector focuses mainly on natural resource industries and is generally oriented toward Europe. Most of its exports are dominated by large (state-owned or formerly state-owned) concerns, and the country has been diversifying its export base through SMEs (Reis & Farole 2012). Since the early 1970s, Tunisia's trade policy has been characterised by promoting exports by attracting foreign direct investment (FDI) in the 'offshore' sector, incentives to exporting firms, and trade agreements; protecting domestic industries and strictly regulating markets, and by facilitating trade through a generous incentive scheme to boost exports and foreign exchange earnings, given that previous protectionist policies had resulted in an anti-export bias (ibid). Tunisia established Special Economic Zones where these incentives were available in order to help trigger FDI flows, including exemptions for taxes on profits or incomes (World Bank, 2008). Several other programmes to help exporters during the period of the study focused on overcoming market failures around information by supporting market search, market testing and market penetration through technical assistance, subsidies, matching grant schemes, information sharing and diffusion (World Bank, 2008).

Employment: The statistics available show a dramatic increase in employment in the offshore sector, especially since the investment incentive code of 1992. The Tunisian offshore sector's total employment rose from 10,000 in 1980 to 70,000 in 1990, and to 245,000 in 2008, at which point it represented 54 per cent of the country's manufacturing jobs and 8 per cent of all employment (World Bank, 2008). In 2006 most of those jobs were in manufacturing, with the bulk of them (60% of offshore jobs) in textile and clothing and mechanical and electrical engineering (ibid).

The FAMEX programme: The World Bank and Tunisia's Ministry of Trade together created the programme in April 2000 to foster export competitiveness among Tunisian firms, and specifically to help combat the challenges faced by new exporters. The programme was part of a shift away from trade promotion to a public-private approach focusing on individual exporters and their associations. The programme aimed at resolving the information asymmetries faced by new exporters, and helped firms strategize to build and sustain their export markets. The programme was based on a US$10 million fund set up by CEPEX (Tunisia's export promotion agency) under private management consisting of international and local experts (Nassif, 2009). It targeted emerging exporters with potential, firms exporting new products, and exporters seeking to penetrate new markets. The first iteration of the programme was implemented between 2000 and 2004, and the second stage from 2005 to 2011.

FAMEX grants mainly co-financed the cost of technical assistance and marketing services from consultants, either local or international. These included five main activities (Cadot et al., 2012): market prospection; promotion and advertising; product development, firm development and foreign subsidiary creation. It provided 50 per cent co-financing in the form

of matching grants for export business plans, based on eligibility criteria of firm size (US$144,000 annual turnover in manufacturing or US$71,000 in other sectors); age (more than two years in operation); and a business plan where the firm strategized either to become a substantive exporter, or diversify its destination markets to develop new export products. The programme also provided up to 70 per cent co-financing for professional associations including export associations, chambers of commerce, and professional consulting organizations, which were supporting Tunisian firms operating under a common export plan and to help strengthen them as companies (ibid).

The FAMEX I programme engaged with 700 firms, and estimates suggest that each $1 of FAMEX assistance generated more than $20 of additional exports (Nassif, 2009). A survey (ibid) showed that 60 per cent of the FAMEX firms were by 2009 able to pay market price for export services and that the programme had resulted in a small export consulting industry and was thus a catalyst for business-to-business markets. At the end of the first phase, in 2008, there had been a US$418 million increase in exports and US$39 million in tax compared to an US$11 million investment (World Bank, 2008).

The FAMEX II programme accepted 1,231 firms, representing 72 per cent of all applicants. Even among firms already exporting, only 20 per cent applied to FAMEX II. Gourdon et al. (2011) suggest that this was as a result of either a lack of capacity or a lack of interest, or possibly due to most firms facing other types of constraints to exporting than those addressed by the programme. The results found by indicated that the matching grant programme served to increase the value of exports as well as to expand the extensive margin of exports, namely new exported products and new destinations served between 2004 and 2008. Moreover, the results suggested that such grants can help both manufacturing and services exporters and are particularly useful to encourage first-time exporters. In fact, the results suggest that the FAMEX II grant worked best for firms that were exporting for the first time. In addition, it was found that the estimated impact on the growth rates of both firm sales and firm employment were positive, but only the latter was statistically significant. In fact, the impact of FAMEX II on average annual growth rates was markedly lower than that for the total value of exports.

The financial crisis that started in 2007 affected the FAMEX programme substantially. According to Cadot et al. (2012), FAMEX firms performed worse in terms of export growth than control firms in the early stages of the global financial crisis, and the programme did not reduce export volatility for participating exporters. The authors speculate that this could be because FAMEX funding increased firms' risk tolerance, making them more likely to experiment with new destinations or products or to enter riskier markets. It might also have made them diversify their activities without reducing risks if they expanded into similar markets which were then also hit by the crisis. However, this risk may be in line with the aims of the programme in other ways, since Cadot, Iacovone, Pierola, and Rauch (2011) demonstrate that, among African exporters, firms' expected survival increases as more firms from the same country export the same products to the same destination countries.

Institutional Factors: Starting in 2003 the Tunisian government simplified the tariff regime by reducing the number of rates and tariff peaks. This was to remedy the unwanted externalities of trade liberalization where a preferential approach focusing on trade with the EU created tariff gaps and a consequent incentive for fraud. Tariffs on imports of raw material and equipment were reduced toward zero and in 2007 became mainly duty-free. A continued focus on the EU, however, meant that by 2007 the average most-favored-nation

tariff (24.7 per cent) was six times the average EU-country tariff (4 per cent). From 2008 exporters also had to pay a 10 per cent corporate tax, with the standard corporate tax reduced to 30 per cent (World Bank, 2008).

Ghana (Kumasi)

The study by Mano et al. (2012) focuses on the impact on SME's of business consulting in the form of basic managerial training. The authors measure the impact of the intervention in industrial clusters. The paper assesses the results of an RCT performed in 2007-8 in Kumasi, the second largest city in Ghana, in an industrial area consisting of metal workshops and enterprises. The results indicate that participation in a basic management training programme improved the business practices and results of the firms that participated in the experiment, and that it is therefore worth paying attention to problems within firms, as entrepreneurs may not be versed in standard business practices.

Background and Context: The Suame Magazine is located in Kumasi, the second largest city in Ghana and the capital of Ashanti Region. The Magazine is recognized as the largest artisan engineering cluster, mechanical, electrical and car body building workshop in sub-Saharan Africa. It dates from the 1930s, with the present cluster site occupied from the 1950s when entrepreneurs were relocated from the city center. By 2008 it occupied an area of around 20 square miles, with a working population of about 200,000 (Iddrisu et al., 2009). The Suame manufacturing cluster suffered due to market reforms in the 1980s which allowed cheaper foreign car imports and reduced business opportunities for those who had formerly repaired cars and machinery under protectionist policies – blacksmiths in particular. Mid-level firms also suffered as the market became swamped with cheaper imported goods, but engineering firm did better due to higher-level technology which allowed them to capture domestic and import markets (Krampah, 2008). The cluster grew from 1970 to 2010 largely through apprentices starting their own businesses (Waldman-Brown et al. 2012), but was challenged by the import of unfamiliar computerized vehicles which locally trained craftsmen could not repair. The manufacturing sector in the Magazine thus grew more than the auto-mechanic sector from 2000-4 (Iddrisu et al. 2009).

Of the businesses in Suame Magazine, 80 per cent are members of the Ghana National Association of Garages (GNAG) (garages, blacksmiths, machinists, and manufacturers). Many of Suame's firms are linked through shared supply chains (Waldman-Brown et al., 2012). There are also some vertical linkages between engineering firms and the government (Adeya, 2008). Suame's businesses service vehicles on the arterial road running from south to north through the centre of the country. The number of vehicles going back and forth on these arteries has rapidly increased. The Magazine is said to be larger and have better technical skills and equipment than any other cluster in West Africa (Iddrisu et al., 2009), and the scrap metal produced has supported the expansion of a metalwork cluster. Meanwhile infrastructure is lacking: the cluster needs new physical infrastructure (telecommunications, electricity, water, access roads, and health posts), and existing infrastructure needs expansion to support the doubling of the employee population between 1980 and 2000 (Adeya, 2008).

The cluster is dominated by micro and small enterprises (MSEs) averaging five workers. The number of workers, however, is not a good proxy for labor input since apprentices' skill levels vary widely. For example machinists have a smaller number of workers but higher revenues than the manufacturers and garages. One advantage the manufacturing MSEs have developed over other sectors is their ability to create spillover industries via the

production of machinery and equipment with local resources such as scrap metal and trained workers (Adeya, 2008). Training and apprenticeship is an important contribution for the cluster, since it creates employment opportunities and skills for youth in particular (Jaarsma 2011), and technical artisans trained there manufacture goods and perform vehicle repair and alterations throughout Ghana and other West African countries (Obeng, 2002). Adeya (2008) found that 69 per cent of Suame artisans in their 2001 survey had no formal education beyond primary school, and a later survey recorded that 58 per cent of master craftsmen had similar levels of education. Fewer than 2 per cent of all artisans have completed tertiary education (ibid), with manufacturing the most highly educated sector (Iddrisu et al., 2009). Such low levels of formal education and the lack of paper documentation among most firms suggest that many Suame artisans may be illiterate, or minimally literate.

Challenges: The main challenge is keeping up with technology – for example the Suame Magazine Industrial Development Organization (SMIDO) has created an ICT learning centre to help workers understand new technologies in the cars they service (Jaarsma et al. 2011). The apprenticeship structure, however, tends to produce large numbers of workers with similar skills who then start their own businesses, creating more competition and lower sales for each firm, so that to prevent their apprentices leaving masters have to raise salaries for their graduates, reducing profitability. Manufacturers have also suffered from the rising price of scrap metal due to the increased demand from China and India, also driving profitability down (Iddrisu et al., 2009).

Policy: Ghana has made significant attempts at industrialization, with the core strategy of creating industrial development through the private sector and thus reducing poverty (Krampah, 2008). The government created a Suame Garages Association in the 1980s, and since then has also established institutions to help MSE's grow and expand (councils for scientific research, technology transfer units, consulting services and training institutes), all of which have engaged with Suame's businesses through technology development and transfer, vocational and apprentice training, business management and entrepreneurship training, working capital and hire purchase loans, women's enterprise development, business-assistance funds, and marketing (Adeya 2008).

The Programme: Mano et al.'s study (2012) assesses an elementary management training programme for MSE entrepreneurs, using experimental data gathered before and after the training programme. It is based on the hypothesis that management knowledge is key to making a cluster successful. The study only focused on the results from one year of the training programme (2007-8). The programme, run by the authors of the study, was accessed by 167 randomly selected metalwork entrepreneurs from the Ghana National Association of Garages (GNAG) membership list. Over 15 days they gave participants three modules of classroom training: one on entrepreneurship, business planning, and marketing; another on production management and quality management, and a third on record keeping and costing. The training cost per person was about US$740.

During the training programme, the authors found that workers in both the treatment and control groups had received technical training from an aid agency in the same year. Another problem was that after the programme was completed, several workers in the sample were evicted from a location which they were using informally, with negative impacts on their businesses.

Results: Many entrepreneurs adopted the management practices taught in the programme and no participants' businesses were closed down after the training, in comparison with nearly 10 per cent of those in the control group. The estimated average effects of the training on accounting-based measures of performance, such as sales and profits, were economically large but were found to be statistically insignificant. Almost 50 per cent of participants adopted the practices taught, but more than a third did not. The authors' analysis suggests that this variation can be reduced by teaching how to persuade workers to adopt new practices. Decreases in sales and gross profits after the programme were smaller for the treatment than for the control group, and the difference in investment between the two groups of machinists became significant at the 5 per cent level after the training.

Estimated training effects from the programme overall were economically large but statistically insignificant, or only marginally significant. This suggests that it is harder to improve entrepreneurs' managerial abilities than workers' skills since unlike vocational training, management training may only pay off for a few participants. The authors conclude that such programmes may however have a positive effect on social welfare by increasing the effectiveness of a few innovative entrepreneurs, who then increase awareness of the value of training and are imitated later on by other entrepreneurs. The results found by Iddrisu et al. (2009) similarly suggest that managerial training is useful in the metalwork sector, but these two studies are not sufficient to establish causal effects since there may be selection bias due to a correlation between training participation and unobservable factors.

Ghana (Accra)

The study by Karlan et al. (2014) reports on an RCT from Accra, Ghana conducted during 2008-11. The research surveyed MSE's in the tailoring sector during a period when the treatment group received cash grants and consulting services from an international firm. These treatments were found to lead to the intended effects of changing business practices and higher investment, but also led to lower profits in the short term and were thus eventually discarded by the entrepreneurs.

Background and context: Ghana's domestic industry remains shaped by the import substitution programmes of the 1960s and 70s, whose aim was to emulate the east and South-East Asian economies by moving African economies from agrarian to modern industrialization dynamics. This policy led the government to facilitate light industries to produce goods locally and the imposition of tariff barriers. Domestic manufacturing industries were established to produce clothes and textiles, soap, wood works, aluminium, metal, and other goods. This benefited the local tailoring industry greatly: the textile sub-sector became the most important in the manufacturing sector, employing about 25,000 workers, making up 27 per cent of manufacturing employment and working at about 60 per cent of plant capacity (MOTI, 2002). The sub-sector has also been an important source of foreign exchange in Ghana (Quartey, 2006). However, by the 1980s foreign exchange was lacking and the sub-sector was operating at low capacity. Trade liberalisation and the Structural Adjustment Programmes pursued in the 80s and 90s caused employment to decrease 28 per cent between 1995 and 2000. The reforms led to increases in textile imports, further squeezing the textile sub-sector (Quartey, 2006).

Fashion businesses in Ghana are still dominated by roadside dressmakers focusing on custom-made clothing. Ghana has had trouble exporting textiles due to low quality and competition from other African producers and. Ghana produces mainly cotton African prints

and household fabrics, along with synthetics, traditional or indigenous textiles such as Kente and Adinkra cloth (Quartey, 2006).

Challenges to the sector: Quartey (ibid) reports a survey of 40 textile and garment industries within Accra-Tema, showing that the sector has experienced low demand for comparatively expensive local textile products combined with an influx of second-hand clothing; manufacturers are seeing high wage bills and are unable to pay workers, and also complain of the import of imitation-traditional textiles from abroad, particularly Asia and Côte d'Ivoire. Similarly, Sarpong et al.'s survey of Kumasi fashion designers (2011) showed that, 85 per cent faced competition from imported and second-hand clothes. They also note problems with smuggling and a lack of raw materials. Quartey's survey also found that excessive production costs were attributed to the expense of local cotton, out-of-date plant and machinery, the high cost of utilities, overstaffing and high interest rates. In addition, interviews with shareholders in the textile sector of Ghana revealed that electricity, water, fuel and transportation costs occupied the highest percentage inthe production cost (approximately 25 per cent) in the textile mills (Asare, 2012).

The findings presented by Sarpong et al. (2011) show that respondents were also much vulnerable in terms of skills and competence. Inadequate capital and a lack of support to upgrade their skills and competencies are the key problems they face. Most of the respondents operate on their own savings or through financial support from their families. Moreover, few of the producers have access to loans from financial institutions. Research by Taylor (2013) supports the view that MSE's in Accra during the period of this RCT found utilities hard to afford, were unable to access credit due to corruption on the part of lenders, and were subjected to extremely high interest rates (up to 45 per cent) where they were able to access credit.

In particular the lack of credit leads to tailors using domestic sewing machines rather than industrial ones – a disadvantage when it comes to meeting international standards in terms of quality of design and construction. As according to Sarpong et al. (2011), therefore, the main challenges faced by the producers are the lack of capital to improve their businesses and the absence of relevant knowledge, key skills and competencies to produce internationally marketable fashion products that prevail in the Ghanaian fashion industry.

Policy: According to a report prepared by the Institute of Statistical, Social and Economic Research (ISSER, Legon, Ghana) on Ghana's textile and apparel sector, employment has declined steadily: 25,000 in 1977; 7,000 in 1995; 5,000 in 2000 and fewer than 3,000 in early 2005. Asare (2012) estimates that figures at the end of 2010 were probably even lower. More recently, however, the government has identified the sector as a potential engine of industrial growth and has initiated various programmes to restructure and improve it. They were designed to enable the industry to take full advantage of the US's African Growth and Opportunity Act (AGOA) and increase employment opportunities for Ghana's growing population, to expand and diversify the economy, to promote domestic and foreign investment and to stimulate exports (Quartey, 2006).

These programmes include forming a textile/garment cluster network to bring together micro, small and medium scale operators to address common problems. The cluster has assisted in training in mass production strategies, sub-contracting, upgrading of technical and marketing/managerial skill of members, and financial assistance. The government has also sponsored a textile/garment training centre; an Export Action Programme on Textiles and

Garments to create private sector growth and development, and revised the tariff structure was revised to adapt to the economic trends. It was proposed that import duties on all imported clothing should be increased to create a fair playing field for all textile products in Ghana. In addition, tariffs on raw materials for textiles were to reduce to zero, and new administrative procedures for importing textile print into the country were introduced so that all goods would be examined by the customs authority. Takoradi port has been identified as the single designation for textile imports, which means that all goods will be physically examined by the Customs Excise and Preventive Services. An Economic Intelligence Task Force was planned to check trade malpractices, along with a consumer protection authority and small claims courts to address consumer complaints (Quartey, ibid).

The African Growth and Opportunity Act (AGOA) was passed by the US congress in 2000 to improve economic relations between the U.S. and the Sub-Saharan region by providing jobs, giving technical assistance and providing credit facilities. Ghana was one of the first to receive US approval of its 'textile visa system' to prevent smuggling and counterfeit documentation, as well as effective enforcement and verification procedures. The AGOA legislation has been extended to 2015 and provides duty- and quota-free treatment for eligible textiles made in qualifying sub-Saharan African countries. This has raised the stakes for Ghana's textile and garment industry, making it an attractive investment area (Quarcoo et al. 2013).

The Programme: The programme (Karlan et al. 2011) aimed to test whether providing urban micro enterprises with capital, consulting services or both may relax constraints and facilitate firm growth. The authors targeted insufficient capital and lack of a business training, which previous studies had shown held the textile sector back from competing in international markets. The authors conducted a randomised experiment in with 160 small urban tailors from 2008-2011, in which the capital treatment group of 36 tailors received grants of 200 cedis (about US $133), around twice their average working capital. The consulting treatment group of 41 tailors received one year of management consulting services from Ernst & Young, a major international consulting firm. A combined group, containing 36 tailors, received both the cash grant and the management consulting. There was also a control group of 45 tailors.

The authors chose microenterprises in a single industry both to allow the consultants to develop expertise and in order to gather more precise data on business practices in their surveys. The tailoring industry has continuous variation in firm size, making growth plausible, is not geographically concentrated, which minimises possible spill-overs to the control group, and is relatively widespread to allow a sufficiently large sample. The authors found that although the tailors did adopt the practices taught by the consultants, and made short-run investments, responding to the capital grant as though they were capital constrained in their business (as mentioned by Sarpong et al., 2011) through increased investment and/or savings, these changes in behaviour were short-term and a year later, the differences between treatment and control groups had disappeared.

The tailors' profit records may explain why these changes were not adopted in the long term: the consulting treatment did not bring higher profits, and the capital grant actually lowered them. As tailors reverted to their previous practices, profits reverted to match the control group. Similarly they stopped investing when they saw profits decrease. This suggests a dynamic where the treatment groups experimented with the new techniques, learned that they are not profitable, and abandoned them, then seeing a recovery in their businesses.

The lack of lasting positive results from the interventions can be explained by the analysis, outlined above, of the challenges facing the fashion industry in Ghana. Since production costs remained high and demand was not stimulated, profits did not improve. The interventions in question were insufficient to improve subjects' competitiveness in a market inundated by cheaper and illegal imports from Asian producers with better production conditions.

Morocco

The study (Sekkat 2011) looks at a sample of about 500 firms, both large and small, across six industries in Morocco, assessing the relationship between their training decisions in 1999 and their labour productivity in the following years. The study uses national datasets in combination with a survey of businesses to ask whether they offered (formal) training in 1999, if so, how much was offered and to what proportion of the workers, and how much the training cost. The majority (76%) of the firms had been established longer than 6 years, and most had fewer than 200 workers, with nearly half having fewer than 40 employees. The results show that training had a positive and significant impact for firms with fewer than 100 employees, but not for larger ones, and that this impact was greater than in studies of other (higher-income) countries.

Background and Context: Morocco's economic growth lost its pace during the 1990s, and the country became the worst-growth performer in the MENA region, averaging 2.5 per cent. It recovered from 2000-2004 due to good agricultural seasons and policy changes toward stabilization and structural reform, with growth rates rebounding to around 4 per cent. This level was not enough to reduce poverty and unemployment, however, so that the chief issue on the government's development agenda during the 2000s has remained growth (World Bank, 2006). The country's largely export-oriented manufacturing sector was challenged by China's entry to the WTO in 2005, with adverse consequences for employment and wages. In the textile sector, a main site of international competition, 75,000 jobs were lost in 2005 and many firms shut down. In 2006, Moroccan exports fell down to below six billions Euros. Wages in exporting firms consequently dropped significantly (Muller and Nordman, ibid).

Vocational Training: The country has a large young population (Muller & Nordman 2008) with a third of Moroccans under 15 years old in 2008. More than half of adults were illiterate at the time of the study, with the proportion much higher for women. The government made schooling a national priority, and education became seen as a tool for modernisation and development (Boudarbat and Lahlou, 2010). The government established a vocational training sector starting in the 1970s, reforming it in 1984 to link it more closely to the needs of the labour market. The reform came at a time of structural adjustment policies, and was presented as a way to find young people private sector jobs and feed businesses skilled labour to improve performance and competitiveness. It was accompanied by another reform in 1985 to make school accessible to all children, to reduce the dropout rate and to steer a larger proportion of students towards vocational training (Boudarbat and Lahlou, 2010).

After 20 years the policy did not seem to have succeeded in steering the vocational training system towards the needs of the job market, since those with vocational qualifications had an unemployment rate between 18 and 35 per cent in 2002, compared to a national rate of 11.6 per cent (ibid). In response the government adopted a new policy to empower businesses to train employees using a skills-based approach, developed in cooperation with France and Canada. Despite this, graduates of this kind of training still aim for public sector jobs because employment conditions in the private sector are still too precarious.

During the period of the study, training was provided by both public and private institutions. The public operators include the Office for Vocational Training and Job Promotion (OFPPT), which ran a development project to support the major sectoral projects between 2002 and 2010, training more than 650,000 young people and creating 119 new training institutions (Ministry of Economy and Finance, 2015). The Ministry of Agriculture trains skilled agricultural workers and apprentices; the Tourism Department also has a network of vocational training establishments, as does the Maritime Fishing Department and the Small Trades and Crafts Department (ibid).

Private vocational training institutes also participate in the training landscape, with numbers that rose from 800 in 1996 to 1,555 in 2001. However, they are mainly focused on low-cost investment sectors, in particular the tertiary and service sector, hairdressing and beauty and the clothing trade. In 2002 the training offered was judged poor by the European Training Foundation (European Training Foundation, 2002) due to the predominance of supply teachers and the lack of relationships between the private institutes and companies in the industrial sector.

Continuing education: Two types of continuing education are offered in Morocco: Special Training Contracts (CSF) which help finance and implement companies' training plans, and which can be accessed by companies paying the vocational training tax; and an inter-professional association whose role is to provide technical and financial assistance to companies in terms of identifying and expressing their needs in terms of skills. In 1999/2000 2,033 companies, 91 per cent from the private sector, benefited from continuing education initiatives (European Training Foundation, 2002). However, problems with provision were identified: companies found reimbursement procedures too slow, which raised a barrier for SME's; training was unequally distributed across sectors, levels of education and regions; the system tended to benefit large companies but not SME's, and it was hard for SME's to find out about what training was offered. Quality was also noted as low and evaluation procedures non-existent. The system has, therefore, been criticised as biased towards larger companies and neglecting necessary groups, particularly informal workers and unemployed youth (European Training Foundation, 2002).

Policy and finance: Training within firms is governed by a National Charter (2004) which aims to increase capacity and enrolments, develop the apprenticeship system, upgrade private vocational training, and consolidate on-the-job training so that 20 per cent of the working poor (wage earners registered with the National Social Security Office) are able to benefit. The Charter also aims to expand the skills-based approach to all training programmes and build a corps of trainers with business experience (European Training Foundation, 2002). By 2008 Morocco had 1,858 private vocational and technical schools, but far fewer government-run schools provided 71 per cent of training. This was because initial training at government centres was free, being funded by a business tax, national budget allocation, aid donors (mainly the World Bank, European Commission and bilateral donors) and family donations, while private schools were funded only by student registration fees. The public system, however, had two main funding gaps: the business tax was mostly being allocated to initial training, and a rigid management system did not answer the changing needs of the market (ibid).

The study: The training programmes in the study were part of the CSF policy model, and therefore gave firms access to both public and private providers, with help funding the training and defining its objectives. Sekkat (2011) notes that the effectiveness of the training

in increasing labour productivity differed depending on whether the firm saw the CSF contract as a way to decrease the cost of training or as part of an overall modernisation and development strategy. Sekkat's study finds that productivity increases significantly where the firm has fewer than 100 employees. He suggests that this is because large firms are able to improve productivity through capital investment, whereas for small firms worker training is a more effective method. He attributes this difference to credit constraints suffered by smaller firms, making subsidised worker training a good option for improving productivity more cheaply.

The background information provided here suggests, however, that the picture is more complicated. Although Sekkat's reasoning appears to be both sound and supported by his findings, the highly diverse landscape for vocational training and continuing education in Morocco suggests that it matters a lot which type of training firms access, which of their workers receive the training, and what sector they are in, since some sectors are better connected to training institutes than others – and thus the training will reflect real sectoral priorities better in some cases than others. Moreover, issues of geography will come into play in a system which serves some regions and levels better than others: firms in one location may have more options for certain types of training (for example management as opposed to new recruits) than others.

Sekkat's study covers firms of all sizes, across a range of sectors, and is agnostic with regard to the firms' location. This means that although he has clearly uncovered the underlying dynamic of training benefiting smaller firms more than larger ones, there remains work to be done to understand how different sectors may benefit more from public or private provision, which levels of training are most effective in increasing productivity (management vs. workers, for example), and especially whether all firms can benefit, or only those in regions with better training institutions. If the results apply only to the capital and other economic centres, for example, this would be an important consideration for funders interested in general rather than geographically specific benefits.

Egypt

Atkin et al. (2014) conducted a randomized controlled trial that generated exogenous variation in access to foreign markets for small firms producing Egyptian rugs. The researchers worked with a US-based NGO, Aid to Artisans, to create export opportunities for some firms and not others, and found that the treated firms reported 15-25 per cent higher profits and showed large improvements in quality as well as reductions in output per hour relative to control firms. The findings suggest that the firms boosted quality, working more slowly, to satisfy international standards – a change that may have occurred in a process of learning-by-exporting.

Background and context: Egypt was responsible for 1 per cent of global textile exports in 2011 (WTO 2011). The country has the largest (by export value) and most productive textile clusters in Africa, and textiles are the third-largest Egyptian export by value, constituting 17 per cent of manufacturing employment (Abdallah et al. 2012). Egypt is the fourth-largest economy in the Middle East, and previous to its revolution in 2011 economic performance was positive, at 4.75 per cent annual GDP growth from 2001 to 2010, though per-capita GDP is relatively low compared to others in the region. Egypt's main exports are tourism, transport and logistics, and petroleum products. The country has seen a shifting export product mix over the 20 years to 2012 as part of a broader economic change from a natural resource-focused economy to one that is less factor-driven (Abdallah et al. 2012). The

government has kept Egypt's status as a trading hub by investing in physical infrastructure, so that the country has air transport and railroad infrastructure rated in the top 50 internationally (WEF 2011). The country was also noted in 2011, however, as having problems with contract enforcement and with institutional challenges to establishing businesses (WEF 2011).

Egypt's larger textile firms manage exports themselves. In 2012, Egypt had 51 registered export agents, seven of them publicly owned (CATGO, 2012). Export agents are mainly situated in Alexandria, a port close to most processing firms. Exporters dominate the cluster's Institutes for Collaboration, since they have access to foreign buyers. The Alexandria Cotton Exporters Association (ALCOTEXA) is a leader of cluster activities, but textile and finished goods producers such as those that are the focus of Atkin et al.'s study are usually affiliated with the Egyptian Exporters Association (ExpoLink), a more general trade association with the mission of developing trade in all Egypt's manufactured goods (Abdallah et al. 2012).

Egyptian textile exports have increased since 2000, with a particular rise in yarn and fabric exports since 2007 when the Multi-Fibre Arrangement (MFA) ended (a global quota system for the international trade of textiles and garments). Tariff cuts in 2004 exposed the sector to increased international competition, but the sector has not performed as well as expected. Despite national real manufacturing output growing at 4.8 per cent per year from 2002-2012, the textile cluster's output declined by an average of 2.9 per cent per year (Abdallah et al. 2012), and despite fairly low labour costs, manufacturers are not able to compete with Chinese or Bangladeshi producers on that basis alone (Werner, 2005). According to Abdallah et al.'s analysis (2012), the textile cluster's export boom is due to stand-alone exogenous changes in the global textile trade and not inherent competitiveness, while structural barriers to firm flexibility may cause serious problems in the short and medium term.

Policy: Starting in 2007 Egypt established Free Economic Zones, including for SME's and textiles. In an attempt to create a cluster-based economic strategy, the government also passed laws regarding intellectual property (2002), labour (2003) and anti-trust (2005), and a consumer product policy (2006). The government also, in combination with the EU, established an Industrial Modernization Centre (IMC) to help build 'specialized industrial clusters', with a textiles subgroup that so far has mainly channelled foreign technical assistance and training to smaller textile firms. The firms do not play a governance role in the IMC's cluster development programme, but the organisation has effectively drawn foreign aid to producers (Abdallah et al. 2012).

Challenges: The textile cluster faces a number of obstacles to cluster development, including inflexible labour markets, an absence of skilled workers, and the competition-limiting impact of massive, weak State Owned Enterprises. Furthermore, although the textile cluster has strong support from other industries and infrastructure, government policy has not supported it effectively. Alexandria has a strong shipping and logistics cluster to serve traffic through the Suez Canal, air transport and railways are strong; and industry councils provide support to the sector. However, the quality of materials is not aligned with developed-nation standards, and although tariffs were reduced on capital goods from around 40 per cent to 5 per cent in 2004, import tariffs on materials necessary for the cluster are still high, for example duty on mid-sized trucks is 32 per cent (OTEXA, 2011).

The study: The authors ask in their paper whether the $48 billion spent annually on Aid for Trade programmes to improve the capacity of developing countries to integrate more effectively into the multilateral trade organization is cost effective.

The authors worked with an NGO, Aid to Artisans, which was beginning a new internationally funded programme (by USAID) to increase market access for local producers, and offered to evaluate their programme. ATA worked with rug producers from Fowa, two hours south of Alexandria. The available materials do not indicate whether the producers were part of the Alexandria cluster referred to above, but given the good transport links available it is likely they were.

ATA identified capacity amongst the Fowa firms to produce rugs at the top of the range internationally, and exploited this to attract foreign buyers. They then identified a local intermediary, in this case a carpet firm, and trained them. Over a two-year period, ATA and the intermediary firm built up contacts to generate sustained orders from OECD clients. The researchers note that only one in seven contacts led to a sustained exporting relationship. They worked closely with the producers and design consultants to create appealing products for the international market, and then displayed the products at international trade fairs in the US.

The researchers also influenced the intermediary's willingness to participate, however, since they funded a trip for representatives of the firm to the US for a training and a trip to a New York trade fair; they provided capital for a sample order for the intermediary firm, and provided US$500 per month to offset the cost of the extra work of coordinating local firms' exports.

The authors find evidence in their data for this process on four counts: First, quality and productivity both rose after adjusting for product specifications, whereas if firms were not learning-by-exporting, their products would not differ from those of control firms. Second, when all firms were asked by the researchers to make an identical rug using the same inputs under controlled conditions, the treatment firms produced rugs of higher quality. Third, the firms' quality and productivity rose over time in a learning curve, and finally, the foreign buyers and the intermediary NGO were able to demonstrate from their communications with the firms that the increase in quality came from discussions where the firms gained knowledge from the buyers.

The results confirmed the researchers' hypothesis: the intervention did increase profits and productivity amongst the small firms in question. However, there are certain caveats in terms of the scaleability and replicability of their intervention. First, the researchers and ATA chose a product where the producers in question had a comparative advantage. Second, the cost, time investment and labour-intensiveness of the work done with the intermediary and the firms in the study was high. There is no indication that these type of exporting opportunities could be built up without two years of sustained work, or without the payments to the intermediary which enabled it to spend time and attention on the project. Overall, the intervention was clearly successful, but this study demonstrates that such programmes should be undertaken with industry-specific expertise and understanding, with carefully selected intermediaries, and with readiness to commit for the longer term.

Discussion

In order to understand the characteristics of each intervention that took place in an African country, this review also included an extensive qualitative analysis of the programmes assessed econometrically though most of the information gathered from each intervention came from the studies themselves. In very few cases we managed to find background material for the programmes as discussed in detail above.[64]

The results do not allow us to draw any firm conclusions for the evidence from Africa. However, it provides insights that must be discussed by following studies. Some insights that can be drawn from the analysis of evidence from African contexts are as follows. Firm size and context appears to matter greatly in determining the effectiveness of African interventions. According to the evidence we have found, smaller firms are, apparently, less able to make use of interventions due to financial constraints. In turn, firm size and capacity constraints are related – small-scale businesses appear to have a shorter-term vision than larger ones, making it harder for smaller firms to benefit from interventions with longer-term vision. Broader national context (such as whether there is a recession) matters, and programmes may not be replicable across contexts. The evidence on the use of intermediary organisations is mixed and somewhat contradictory, also potentially due to differences in national contexts.

One other lesson that seems to hold across the African programmes is that innovation by SMEs is possible and can be stimulated, but that amongst smaller firms there are high risks attached to changing business practices. Interventions aiming to stimulate innovation may therefore destabilise smaller businesses that are less robust, but work well with larger, more stable SMEs.

Even though the source search and selection were conducted in the most rigorous way possible, given that direct project documents were not found about these specific programmes, there is still a missing link in the qualitative investigation that it was not possible to fill. Therefore, this gap must be taken into account when relating these findings to the meta-analysis. We cannot claim that our evidence regarding these programmes is comprehensive, and thus the results should be addressed with caution.

Concluding remarks

The overarching conclusions that can be drawn from our qualitative analysis are these. First, firm size appears to matter greatly in determining the effectiveness of interventions of various kinds. This is because, according to the evidence we have found, smaller firms are less able to make use of interventions, for example relating to technological improvement and managerial knowhow due to financial constraints. In turn, firm size and capacity constraints are related – small-scale businesses appear to have a shorter-term vision than larger ones, and will therefore engage with interventions differently, making it harder for those programmes (such as training and access to capital) which operate with a longer-term vision to take hold. Another lesson from the evidence presented here is that the broader national context matters: for example, if a recession is in process, firms may respond more strongly to the relaxing of capital constraints than training programmes. Equally, programmes may not be replicable across contexts: for example from an enabling policy

[64] The reason to do the analysis only for the five studies was because the institution sponsoring this review has a direct interest in knowing the actual status of business support programmemes for SMEs in African and whether or not they are helping the private sector development in the region.

context that prioritises SME growth to a less enabling one where SMEs are being undercut by competitors at home or abroad.

The evidence on the use of intermediary organisations is mixed and somewhat contradictory: one programme which used local intermediaries and offered training ended up decreasing SME profits and being ultimately unsuccessful, whereas another had significant success in causing SME managers and workers to learn new skills and operate at a higher level. The difference may have been the national context: the first programme operated in a country where trade policy exposed MSMEs to extremely competitive conditions, whereas the second operated in a sector singled out by the government for priority status.

One other lesson that seems to hold across the studies is that innovation by SMEs is possible and can be stimulated, but that amongst smaller firms there are high risks attached to changing business practices. Interventions aiming to stimulate innovation may therefore destabilise smaller businesses that are less robust, but work well with larger, more stable SMEs.

The definition of an SME is very broad, and the same intervention seems to have very different effects when applied to neighbourhood businesses employing fewer workers versus concerns that are more outward-looking and have a longer-term vision. Therefore if policymakers are interested in scaling interventions or replicating them across national contexts, it is worth taking a more nuanced approach to eligibility, particularly in terms of firm size, in order to minimise the risk of funding ineffective programmes.

APPENDIX D – Detailed characteristics of included studies

Table D.1 – Included Studies

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
Bruhn et al. (2012)	Matching grant	Mexico	Consulting services provided by the Institute for Competitive Productivity, a training institute set up by the Mexican Ministry of Labour in the state of Puebla. The study suggests some positive effect on various business outcomes. Strikingly, the paper suggests that business consulting increased in sales and profits of 80 and 120 per cent, respectively. The study did not show any impact of business consultancy on employment.	Among the 432 enterprises that expressed interest in joining the programme; 150 were randomly selected to participate.	RCT	Definition of the Mexican Ministry of the Economy, micro enterprises have up to 10 employees. Small enterprises have between 11 and 50 employees in the manufacturing and services sectors and between 11 and 30 employees in the commerce sector. Medium size enterprises have up to 100 employees in the service and commerce sectors and up to 250 employees in the manufacturing sector.	Manufacturing, Commerce and Services	Sales and profit
Weiss et al. (2011)	Export promotion	Chile	The study analysed the impact of firms' export promotion - Export Marketing Assistance (EMA) - Through marketing assistance on the performance of the firms in the Araucania region of Chile. The data for the study is from exporting firms between 2002 and 2005 suggests a non-robust positive effect of marketing assistance on export. The results are very sensitive to the bandwidth of the kernel matching, and the authors point out that the small number of observations in a specific geographic area is also a limitation of the study.	The treated group has 73 firms.	The study uses a difference-in-differences matching estimator.	The Export Marketing Assistance (EMA) focuses on SMEs according to Chilean size definition.	Mainly manufacturing, agriculture and forestry	Change in exports; Accumulated exports; Exports average:

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
De Giorgi and Rahman (2013)	Tax simplification	Bangladesh	The paper provides an assessment of an information campaign on SME registration in Bangladesh. Following a major business registration reform in Bangladesh, which substantially reduces the time, complexity, and hidden costs of registering a business, the intervention was designed to provide an experiment that provided face-to-face information to randomly chosen firms. The intervention consisted of one visit by a facilitator to informal firms. The results show that the information campaign had zero effect on business registration. As a result, the authors speculate that the main barrier to registration is not information, but indirect costs related to formalisation.	A sample of informal firms (3,000) was extracted from the IFCs quarterly Business Confidence Surveys (2009) and IFCs Informality Surveys (2010). 50 per cent of the sample was randomly selected to receive the treatment.	RCT	Small informal firms. Treated firms had on average 22 workers and control group firms had 26 workers.	All sectors	Indicator of formalization
Aivazian and Santor (2008)	Access to credit	Sri Lanka	Analysed two groups of small firms with different conditions for accessing credit. One group had access to subsidised loans from the World Bank and the other accessed loans without subsidies. The authors used the Small and Medium Industry Impact Evaluation (SMIIE) survey conducted in 1996 by the World Bank. The study indicates that the impact on value added is inconclusive.	304 firms, half of which received subsidised loans and the other half of which received regular loans.	The study used propensity score matching and OLS estimations.	The median of the number of employees is 16 for both the control and treatment group.	The study included SMEs from the following sectors: manufacturing, mining, construction, agriculture industries, fish processing, industrial services, horticulture, commercial transport and animal husbandry.	Value added

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
Arraiz et al. (2013)	Local productive systems	Chile	The study evaluates the impact of the Chilean Supplier Development Programme on the performance of SME suppliers to sponsor firms, using panel data between 1998 and 2008. The results suggest that SME suppliers in the agribusiness sector experienced increase in sales and employment and are more likely to survive after participation in the programme.	The final sample consists of 101 sponsor and 3,863 supplier firms and data spans from 1998 to 2008.	Propensity score matching combined with fixed effect estimations	The small firms that participated in the programme had annual sales that did not exceed 100,000 UF (Unidad de Fomento, an accounting unit that reflects the real value of the Chilean peso).	Agribusiness sector	Annual sales (in logs); Exporting firm; Employment (in logs); Salaries (in logs)
Lee and Cin (2010)	Innovation	Korea	The authors analyse whether R&D subsidies stimulate private R&D investment by SMEs in the manufacturing sector in Korea. The results show some positive impacts of government R&D subsidies on additional private R&D funding, and suggest subsidies can increase corporate R&D in manufacturing SMEs in Korea.	The data comprises 34, 782 firms for the period 2000-2007.	The study applies DID and two-stage least-squares estimators to panel data covering the period between 2000 and 2007.	Firm size as defined by the Korean Small and Medium Business Administration. SMEs treated have on average 80 workers.	Manufacturing sector	Corporate R&D investment
Mano et al. (2012)	Training	Ghana	The study is about the impact of business consulting in the form of basic managerial training. However, the authors measure the impact of this type of intervention in the context of industrial clusters. The intervention was made from November 2007 onwards and a follow-up survey was undertaken in November 2008. The results indicate that participation in a rudimentary management training programme improves the business practices and results of the firms that participated in the experiment.	The data comprised 167 firms, 60 in the control group.	RCT in Suame Magazine, an industrial area consisting of metal workshops and enterprises in Kumasi, the second largest city in Ghana.	The paper focuses on micro and small firms members of the Ghana National Association of Garages (GNAG).	Manufacturing sector	Visiting customers; record keeping; record analysis; sales revenue; value added; gross profit.
Atkin et al. (2014)	Export	Egypt	The study assesses the impact of market access initiatives on export activity by rug-making firms in Egypt. Results show that involvement with external market access	The study encompasses a total of 405 firms	RCT	Most of firms have between one and four employees.	Textile	Profits from rug business; Total product

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
			initiatives improved both quality of rugs, profit, and price increase. Accordingly, the number of rugs produced decreased.					last month (m2); Export indication.
Rijkers et al. (2010)	Matching grant	Ethiopia	The authors assess the impact of support to SMEs in the construction sector in terms of technology use, labour intensity, and earnings of participant firms in Addis Ababa, Ethiopia. The programme was designed as an active labour market policy through the use of matching grants to create labour intensive jobs and reduce unemployment. Results indicate that the programme was not successful in generating more jobs in treated firms than in the control group.	The study uses data of 240 firms	Instrumental variable regressions with cross section data.	Small firms in the construction sector employing fewer than 50 people and with a capital stock worth less than approximately 55,000 USD.	Construction sector	Log of input per worker; Log of annual revenue; Log of annual revenue per worker; Log of monthly earnings
Rand and Torm (2012)	Tax simplification	Vietnam	The study assesses the relationship between legal status and firm level outcomes in manufacturing micro- and SMEs in Vietnam. The results indicate that becoming a registered firm leads to an increase in profits and investments. On the other hand, there is evidence that formalizing does not lead to a higher share of wages in total value added (proxy for labour productivity), and that becoming a registered firm decreases use of casual labour.	The study encompasses 1,366 firms.	The study used a matched DID strategy.	A definition used by The World Bank was used in this study: Micro-enterprises have between one and 10 employees, small-scale enterprises between 11 and 50 employees, and medium-sized enterprises between 51 and 300 employees.	Manufacturing sector	Profit (log); Investment share; Credit access; Casual worker share.
Fajnzylber et al (2011)	Tax simplification	Brazil	The paper analyses the impact of the introduction of a business tax reduction and simplification scheme in Brazil called SIMPLES. The results suggest that SIMPLES led to a significant increase in formality and that led to higher revenues, employment and profits	The study used the Brazilian Survey of the Urban Informal Sector that has more than 40000 entrepreneurs.	The estimations are done using Weighted Two-Stage Least Squares (W2SLS) and regression	The paper defines firm size based on the 1996 simplified tax law system called SIMPLES. The definition is based on revenue level; for micro (up to R$120,000) and	All sectors	License to operate, Legal entity, Micro-firm registration, Registered with tax authorities, Paid taxes, Paid social security, Revenues, Profits, Employment, Paid employment, Paid

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
			among firms which registered as a result of the new law.		discontinuity design.	small firms (up to R$720,000).		employment/employment, Fixed capital, Access to credit, Fixed location, sales.
Lopez-Acevedo and Tan (2005)	Training	Mexico	The authors provide an evaluation of a training programme for SMEs in Mexico, the Comprehensive Quality and Modernization Programme. A panel data for the years of 1991, 1993 and 1995 was used. The results found suggest that participating firms experienced higher investments in worker training, higher rates of capacity utilization, and higher probability to adopt quality control practices when compared with firms in the control group. Furthermore, firms that participated in the training increased productivity growth, but only in the 1991 to 1993 period.	The study was based on information from 1233 firms (595 received treatment and 638 were the control group).	Propensity score matching combined with difference-in-difference estimations.	The definition of SME is based on the following category. Micro - fewer than 16 workers. Small – between 16-100 workers. Medium - enterprises between 101-250 workers.	Manufacturing sector	Productivity
Duque and Munoz (2011)	Innovation, export, training and LPS (clusters).	Colombia	This study for Colombia uses a panel data setting using data from 1999 to 2006. The evaluation focuses on the impact of the Colombian Fund for the Modernization and Technological Development of the Micro, Small and Medium Sized Firms (FOMIPYME). The empirical evidence suggests a positive effect on wages in the first year two years of treatment, on exports as a share of sales, and also on investment in R&D. Security issues might affect the effectiveness of these programmes, as participating in an SME programme positively affects productivity when crime is controlled for.	The study encompasses 1282 SMEs that were used to construct the treated and control group.	Propensity score matching combined with Difference-in-difference estimator.	The definition of SMEs used in the study follow the definition established by the Law 905 of 2004: i) Microenterprises <10 employees, or total assets worth less than 500 legal monthly minimum wages; ii) Small Enterprises: between 11 and 50 employees, or total assets worth between 501 and 5,000 legal monthly minimum wages; iii) Medium Enterprises: between 51 and 200 employees, or total assets worth between 5,001	All sectors, mostly manufacturing	Log of sales; Log of employment; Log of sales over employees; Log of staff expenses over employees, Log of exports over sales; Log of investment in R&D.

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
						and 30,000 legal monthly minimum wages.		
Tan (2011)	Innovation, LPS (cluster) , matching grants	Chile	The study used panel data for the period between 1992 and 2006, and evaluated the impact of eight different programmes on different outcomes. The authors used a propensity score matching combined with DID. Empirical results suggest that SME support led to higher sales, labour productivity, increased wages, and in addition a small effect on employment was observed. No significant effects were found with regards to credit and loans programmes, suggesting that access to finance by itself does not affect firm performance.	603 establishments from six manufacturing sectors provided information about the SME participation in different support programmes.	Propensity score matching combined with Difference-in-difference estimator.	Microenterprise with 1-15 workers, small with 16-100 workers and medium with 101-250 workers	Manufacturing sectors (food and beverages, chemicals, metal products (excluding machinery), machinery and equipment, wood products and paper products).	Log sales; Log output; Log labour; Log wage; Log labour productivity; Export as % of sales.
Jaramillo and Diaz (2011)	Innovation and training.	Peru	The study evaluates three important public programmes oriented towards SMEs (PROMPYME - Public Sector Purchase Programme: Small and Micro Enterprise Promotion Commission (Comision de Promocion de la Pequeña y Micro Empresa), BONOPYME (Voucher-based training programme for small and micro enterprises) and CITE-Calzado (Shoe manufacturing technological innovation programme)). Data from the beneficiaries of these programmes were linked to the Annual Economic Survey carried out by the National Statistics Institute to generate control groups. The results suggest a positive impact of participation in SME programmes, associated with a 26 per cent increase in profits and a 21 per cent increase in sales.	The treated group comprises 414 firms.	Propensity score matching combined with Difference-in-difference estimator.	According to Peruvian legislation (D.L Nº 1086), firms with a maximum of 50 workers and a minimum of two workers can participate in BONOPYME.	All sectors, mainly shoe manufacturing.	Log profits; log sales; log profits per worker; log sales per worker

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
Lopez-Acevedo and Tinajero (2010)	Matching grants, export, innovation, local productive system and training.	Mexico	This study for Mexico includes data from 5 different institutions and 18 different programmes. The evaluation constructed a rich panel dataset by linking SMEs' participation in support programmes to a panel of annual industrial surveys for the period of 1994 to 2005. The results suggest that participation in the programmes of the Ministry of Economy and the National Science and Technology Council is associated with higher value added, sales, export, and employment. Nevertheless, the authors warn that the better results of these specific programmes might be related to the fact that they reach bigger and more structured SMEs.	The total number of observations for the panel is 30 199 (18 435 in the control group and 11764 in the treatment group).	Propensity score matching combined with Difference-in-difference estimator.	Firm size is defined as "micro" with 15 or fewer workers, "small" with 16 to 100 workers, "medium" with 101 to 250 workers, and "large" with over 250 workers.	All sectors.	Value added, gross production, technology transfers, hours worked, wages, fixed assets, sales, export, and employment.
Castillo et al. (2010)	Export	Argentina	This paper evaluates the impact of the SME support programme PRE on employment, real wages, and exports in Argentina. Using data from two different sources, i.e. the administrative records of the programme and a dataset constructed by the Observatorio de Empleo y Dinámica Empresarial OEDE, the authors construct a long panel of firms (12 years). Estimations show a positive and quantitatively important impact of the programme on employment and a positive although smaller impact on real wages and the probability of exporting. Also, the effect of the programme on wages and the probability of exporting take place one year after beneficiaries receive the programme.	The dataset is a panel of firms that includes all the firms declaring employment in Argentina after 1996. It covers firms in manufacturing, services, retail, and primary sectors. In 2008, the dataset included around six million workers and 570,000 firms.	Propensity score matching combined with Difference-in-difference estimator.	Firms are classified using the average employment of two consecutive years into micro firms (less than 4 employees), small firms (between 4 and 13 employees), medium-sized firms (between 14 and 50 employees)	Manufacturing, services, retail, and primary sectors.	Number of employees, wages and probability to export.

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
McKenzie and Sakho (2007)	Tax Simplification	Bolivia	The paper estimates the impact of registering for taxes on firm profits in Bolivia using the distance of a firm from the tax office where registration occurs, conditional on the distance to the city centre, as an instrument for registration. The results show that tax registration leads to significantly higher profits for the firms that the instrument affects. However, there is evidence of heterogeneous effects of tax formality on profits. Tax registration is found to increase profits for the mid-sized firms in the sample, but to lower profits for both the smaller and larger firms.	The study was based on a sample of 469 firms from the Bolivian Encuesta de Productividad de Empresas	RCT	Less than 20 workers.	Six industries were chosen for the survey: grocery stores, restaurants and food sales, manufacturing of clothing from wool and cloth, transportation of passengers and cargo, manufacturing of clothing from camelid wool (from llamas and alpacas), and manufacturing of furniture from wood.	Log Monthly Profits
De Negri et al. (2006)	Innovation (R&D)	Brazil	This study assesses the impact of the National Technological Development Support Programme during 1996 - 2003. The authors used data from the Annual Industrial Survey (PIA), the Technological Innovation Survey (PINTEC) and the Annual Social Information Report (RAIS). The results show evidence that ADTEN had a positive influence on companies' private R&D expenditures. Also, there is evidence that the programme has positively influenced the growth of firms and their productivity.	457 treated firms and the control group is constructed from a database with approximately 80,000 industrial firms	Difference-in-differences technique combined with Propensity Score Matching and a two-step selection mode	Definition of SME used by the innovation agency.	Manufacturing sectors	Total R&D expenditures

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
Oh et al. (2008)	Credit	Korea	Taking a sample of 44.013 firms from 2000 to 2003, This article evaluates the effect of the credit guarantee policy implemented during 2001 and 2002 in Korea on growth rates of different performance indicators, including productivity, sales, employment, investment, R&D, wage level, and the survival of firms in the post crisis period. The study focuses on two major public credit guarantee institutions in Korea: the Korea Credit Guarantee Fund (KCGF) and the Korea Technology Credit Guarantee Fund (KOTEC). Results estimated using Propensity Score Matching suggest that credit guarantees influenced significantly firms' ability to maintain their size and increased their survival rate, but did not improve their R&D and investment. However, some evidence was found that the adverse selection in terms of productivity occurred in selecting firms to receive guarantees, and the effect was more prominent for the firms receiving guarantees from both institutions.	The number of treated firms is 8714 and the control group is constructed from an unbalanced panel data with approximately 95,000 to 109,000 plants for each year from 2000 to 2003.	Propensity Score Matching combined with difference-in-differences	Korean official definition of SME (fewer than 300 employees for manufacturing).	Manufacturing industries	Growth in TFP, employment, sales, wage level, investment intensity, change in R&D status and survival of the firm.
Sanguinetti (2005)	Innovation (R&D)	Argentina	This study evaluates the impact of a public sector programme, FONTAR, aiming at fostering R&D activities in the private sector in Argentina, on innovation. The authors constructed a panel linking two surveys of annual data (Encuesta Nacional sobre la Conducta Tecnológica de las Empresas Industriales Argentinas) collected by CEPAL and INDEC on innovation expenditures by firm for periods 1992-1996 and 1998-2001. The results suggest that the FONTAR programme has had	The study comprises 639 firms	Propensity Score Matching combined with difference-in-differences	FONTAR programme focuses on SMEs according to official definition.	Manufacturing sector	R&D expenditures/ Employees; Total Innovation Expenditures / Employees

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
			a positive effect on R&D expenditures and none on total innovation.					
Cassano et al. (2013)	Access to credit	Bulgaria, Georgia, Russia and Ukraine	This study assesses the effect of two types of loans–a new type based on cash flows and a traditional-style loan based on collateral–on SMEs performance in Bulgaria, Georgia, Russia and Ukraine. The authors used client data from banks participating in microfinance programmes of the European Bank for Reconstruction and Development (the EBRD) for 2001-2004. Results show that both types of loans are related positively to most performance indicators, enabling the SMEs to be more profitable and expand production. The cash flow loans also appear to be particularly attractive credit delivery schemes for micro and small enterprises. Finally, the effects of the smallest loans are often negative, suggesting that the minimum loan size is an important policy issue.	The study had 824 treated firms	Difference in logs method	Less than 250 employees.	All sectors	Fixed assets, revenues, employment and net profits
Benavente and Crespi (2003)	Local productive system	Chile	The main objective of this article is to determine if associative strategies (Programmes of Development, known as PROFOs) followed in Chile had any impact on the enhancement of productive performance of SMEs firms in 1992-1995. The authors use information from a survey applied to a random sample of 102 participating firms and a random sample provided by the Chilean National Institute of Statistics (INE) for control firms. The results suggest that these kinds of policies have been effective in increasing the productivity of the	The control group is comprised by 149 firms and the treated group by 102 participating firms.	Propensity Score Matching and difference-in-differences estimator.	Definition of SME used by CORFO	Manufacturing sectors	Average Growth in TFP

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
			participating firms, and have also been efficient since they have achieved high social profits.					
Benavente et al. (2007)	Innovation (matching grant)	Chile	This paper analyses the effectiveness of the Chilean Technology Development Fund (TDF), the FONTEC programme. Using a survey of beneficiary and control firms implemented by the Chilean Corporación de Fomento (CORFO), the authors adopted difference-in-differences and propensity score matching methods to estimate the programme's impacts. Results suggest that FONTEC's subsides partially crowded out private investments in innovation and they more effectively promoted technological upgrades and process innovations, rather than radical product innovations. Also, despite finding a positive impact on employment, sales and export, the results did not clearly support a significant result in terms of productivity.	During the first ten years of FONTEC (1991-2001), 6,000 firms participated. The survey, collected by the University of Chile, focused on firms funded by Line 1 between 1999 and 2002. The total sample included a group of 319 treated firms and an equal sample of non-treated firms.	Adopted difference-in-differences and propensity score matching methods to estimate the programme's impacts.	Definition of SME used by CORFO	In terms of sectors, 41 per cent of funds were allocated to firms in the manufacturing sector, 29 per cent to firms in the agricultural and fishery sectors and 8 per cent to Information and Communications Technologies (ICT) activities.	R&D investment; number of new production processes adopted by the firm; relevance of the process innovations adopted by the firm; relevance of the changes in human resource management practices adopted by the firm; Access to External Resources; Number of New Products; Number of Patents; sales; employment; labour productivity and export.
Chudnovsky et al. (2006)	Innovation (matching grant)	Argentina	This paper evaluates the impact of the Non-Reimbursable Funds (ANR) programme of the Argentinean Technological Fund (FONTAR) on the innovation activities of granted firms, their innovative outcomes and productivity performance. The database was constructed from a tailor-made survey conducted by INDEC (National Institute of Census and Statistics). difference-in-differences matching estimators show that the subsidies had a positive impact on the total level of innovation expenditures of treated firms but not on private innovation intensity. Nevertheless, for firms that already had innovation expenditures there is a crowding out effect of ANR funds, while for the other	The authors count with data from 414 firms for four successive years (2001-2004) and for 1998. From the total sample of 414 firms, 136 have been granted a non-reimbursable subsidy (ANR) from the FONTAR, 62 firms applied but did not	Propensity Score Matching and difference-in-differences estimator.	Average size of participants was 34 employees.	Manufacturing	Innovation intensity (total innovation expenditures/total sales), Private innovation intensity, Sales of new products and labour productivity (sales/employees)

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
			firms no crowding out is appreciated. Finally, both the estimation of the effect of subsidies on innovative outcomes and firms' performance did not result in statistically significant results.	receive the ANR, and 216 firms did not apply for the subsidy.				
Bruhn (2011)	Formalization	Mexico	This paper studies the effect of business registration regulation on economic activity using micro-level data. The authors use a quarterly panel data from the Mexican employment survey from the second quarter of 2000 to the fourth quarter of 2004. Results obtained by an occupational choice model show that the reform increased the number of registered businesses in eligible industries. This increase was due to former wage earners opening businesses. Moreover, employment in eligible industries grew. Finally, the results imply that the competition from new entrants lowered prices and decreased the income of incumbent businesses.	Micro-level data from the Mexican employment Survey with 1 636 225 observations	Panel data estimation	The programme focuses on small informal firms.	All sectors	Registration, employment, prices and income
Corseuil and de Moura (2011)	Tax simplification	Brazil	The paper uses regression discontinuity design to assess the effect of the introduction of the "SIMPLES" legislation on manufacturing employment generation. The new law establishes a clear criterion in terms of revenue to qualify for the simplification tax system. The results show that SIMPLES has a positive impact on the creation of new manufacturing jobs in Brazil	Subsamples of the Annual Manufacturing Survey close to the revenue threshold, approximately 3000 observations.	Discontinuity Fuzzy Regression Design	The threshold defined by the law to define eligibility. According to the Law, eligible firms exhibit an annual gross revenue of less than R$720.000	Manufacturing	Employment
Özçelik and Taymaz (2007)	Innovation (R&D)	Turkey	This study investigates the effect of public R&D support programmes on private R&D investment at the firm level in the Turkish manufacturing industry for 1993-2001. This study is based on the match of three panel	There are about 11,000 establishments in	Matching difference-in-differences estimation	The average firm size is 44 employees.	Manufacturing	R&D Intensity

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
			databases: Annual Survey of Manufacturing Industries (ASMI), R&D Survey, and a database on the clients of R&D support programmes. The findings indicate that public R&D support significantly and positively affects private R&D investment. Smaller R&D performers benefit more from R&D support and perform more R&D. In addition, technology transfer from abroad and domestic R&D activity show up as complementary processes.	the database each year.				
Karlan et al. (2014)	Matching grant and training	Ghana	The study tests whether providing urban micro enterprises with capital, consulting services or both can help relax constraints and facilitate firm growth. The authors conducted a randomized evaluation in urban Ghana in which micro and small tailoring enterprises receive either treatment, both, or neither. Results suggest that all three treatments lead to their immediate intended effects: changed business practices and higher investment. However, implementing both treatments led to lower profits on average. Eventually, the entrepreneurs reverted back to their prior operations, and likewise there was no meaningful long run change in firm size. Furthermore, there was no additive effect (positive or negative) from providing both treatments at once.	Experiment in Accra, Ghana with 160 small urban tailors for 2008-2011.	Randomisation with OLS.	Less than five employees	Tailoring industry	Business literacy knowledge, adoption of Business practices, investment, savings, hours worked per month, total staff, apprentices, paid employees, income, revenue and expenses
Kalume et al. (2013)	Tax simplification	Brazil	This paper evaluates the impact of Simples Nacional (SN) on the probability of eligible firms located in Rio de Janeiro state of transiting between inactivity and activity. The authors rely on quarterly data from the Tax Secretary of Rio de Janeiro State (Sefaz-RJ) for 2005-2009.	Data from 46 742 eligible firms.	Difference-in-differences estimators	The paper defines firm size based on the 2006 simplified tax law system called SIMPLES. The definition is based on revenue level; for micro (up to R$240 000) and	All sectors	Formalization

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
			During the implementation quarter as well as the quarter in which the firm participates, results show no significant variation in total transactions nor in volatile transactions from inactivity to activity. Therefore, there is an average increase on this kind of permanent transactions, which means that SN contributed to the opening of new firms or the definitive resumption of activities for the inactive ones.			small firms (up to R$2 400 000).		
Sekkat (2010)	Training	Morocco	This study investigates the impact of training offered to workers in 1999 on their average productivity over the period 2000-2004 in Morocco. The author combines two datasets to perform the analysis. One set comes from the Annual Moroccan Census of Manufacturing conducted by the Moroccan government, while the second is the Firm Analysis and Competitiveness Survey, called FACS 2000. The estimations show that the intensity of training has a significant and positive impact on productivity in small and medium enterprises.	375 observations	Panel data with instrumental variables.	Less than 100 employees.	Manufacturing (mainly textiles, garments, processed food products, chemicals, leather and shoes products and plastic products.)	Productivity
Machado et al. (2011)	Access to credit	Brazil	The article evaluates the impact of Brazilian Cartão BNDES (BNDES Card) on employment growth rate of companies that used this instrument to finance investments and other inputs in 2008. The authors used data from BNDES, which provides information of firms with access to the card, and data from Labour and Employment of Brazil, which provides information on the stock of employees of formal firms over 2007-2009. The results show that at the end of the year following the card use, there is a positive impact on the mean employment of the supported firms. The impact occurs mainly	The sample used for the estimation contained 22.572 firms.	Propensity Score Matching and difference-in-differences estimator	Firms were sorted in three groups by the size classification of IBGE as follows: micro enterprises (zero to nine employees), small enterprises (10 to 49 employees) and medium and large enterprises (50 or more employees).	All sectors	Number of employees

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
			on micro and small enterprises, and is larger as the firm size declines.					
Crespi et al. (2011)	Innovation (matching grants and contingent loans for R&D)	Colombia	This paper aims at evaluating the impacts of innovation promotion programmes administrated by the Colombian Innovation Agency (COLCIENCIAS) on beneficiaries' economic performance. The authors create a panel database for the period 1995-2007. Results obtained show that COLCIENCIAS programmes have been very effective in increasing firm labour productivity and that the main channel behind this result is product diversification (product innovation). Nevertheless, impacts on employment and capital investments are more modest, suggesting that the main transmission channel is through total factor productivity.	The panel estimations using data in the common support had 10 470 observations.	Propensity Score Matching and LSDV.	Small firms that participated in COLCIENCIAS had on average 128 employees.	Manufacturing sector.	Labour productivity (value added/total employment), investment/capital, employment, number of products.
Kaplan et al. (2011)	Formalization	Mexico	The objective of this study is to estimate the magnitude of the effect of reducing registration procedures on firm start-ups by evaluating the implementation of a "deregulation" programme called "System of Fast Opening of Firms" (SARE) that took place in Mexico in different locations at different time periods. The authors create a database for 1998-2000 with information from three sources: (i) data from the Mexican Institute of Statistics, Geography and Informatics (INEGI); (ii) contracts of the Federal government with 31 of the 93 municipalities that implemented the programme; and (iii) proprietary data from the Mexican Social Security Institute (IMSS). The estimates obtained suggest that the programme generated an increase on monthly new firm	Data are from the Mexican Institute of Statistics, Geography and Informatics (INEGI); (ii) contracts of the Federal government with 31 of the 93 municipalities that implemented the program; and (iii)	Triple difference panel regressions.	Small firms. System of Fast Opening of Firms" (SARE) for small firms.	Eligible industries include: production of metal and wooden furniture, freezing of fruits and vegetables, production of clothes and textiles, drugstores and small supermarkets, video stores and DVD rentals,	New jobs in old firms, new firms

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
			start-ups. This increase in the flow of firm registration appears to be temporary and concentrated in the first ten months after implementation.	proprietary data from the Mexican Social Security Institute (IMSS)			real estate services,	
de Mel et al. (2012)	Formalization	Sri Lanka	The authors conducted a Randomised Control Trial to evaluate the impact of formalization on firms' outcomes. The experiment consisted in providing incentives for informal firms to formalize. Three follow-up surveys, at 15 to 31 months after the intervention, measured the impact of formalizing on these firms. Although mean profits increased, this appears largely due to the experiences of a few firms that grew rapidly, with most firms experiencing no increase in income as a result of formalizing. The authors also find little evidence for most of the channels through which formalization is hypothesized to benefit firms, although formalized firms do advertise more and are more likely to use receipt books. Nevertheless, the results suggest that although most informal firms do not want to formalize, policy efforts that lead to relatively modest increases in the net benefits of formalizing would induce a sizeable share of informal firms to formalize.	The baseline sample consists of 520 firms	Randomised Control Trial	Between 1 and 14 employees	The firms cover a range of industries, with 44 per cent in services (e.g. motor vehicle repair, restaurants), 32 per cent in manufacturing (e.g. manufacturing fabricated metal products and glass products)	Likelihood of registration, survival, report profits, monthly profits, monthly sales, number of paid workers, recruited a new worker, capital stock, paid taxes, amount of taxes paid, formal accounting, has a receipt book, business bank account, applied for business loan, applied for personal loan.
Martincus et al. (2012)	Export promotion	Argentina	The paper examines the effects of trade promotion programs on the export performance of firms within different size segments using s firm level dataset for Argentina over the period 2002 to 2006. The results indicate that export AR programme increased exports for small	In 2006, 312 small firms and 143 medium firms participated in the programme	Difference-in-differences estimator with matching	Firms are classified in terms of employment: up to 50 employees (small), between 51 and 200 employees (medium).	All sectors	Exports

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
			firms mainly through an expansion of the set of destination countries.					
Christian Volpe Martincus and Jerónimo Carballo (2008)	Export promotion	Peru	The study provides evidence on the impact of export promotion on export performance using a firm-level data for Peru over the period 2001–2005. The authors found that export support from PROMPEX had an impact on the number of products and destinations of exports.	In 2005, 709 firms received support from PROMPEX.	Difference-in-differences estimator with matching	The definition of the size categories follows the definition of the Peruvian National Statistics (INEI): up to 10 employees (micro), between 11 and 50 employees (small), between 51 and 200 employees (medium).	All sectors	Export, Number of products exported, Average export per country and product.
Christian Volpe Martincus and Jerónimo Carballo (2010)	Export promotion	Colombia	The study compares the effects of different export promotion activities undertaken by PROEXPORT in Colombia on the extensive and intensive margins of firms' exports against each other. The study also accounts for potential selection bias of firms into these activities. The authors use export data for the entire population of Colombian exporters over the period 2003–06 and the results suggest that firms that simultaneously receive counselling, participate in international trade missions and fairs, and get support in setting up an agenda of commercial meetings experienced higher growth of total exports than comparable firms that participated in only one of these activities.	In 2006, 2752 firms received support from PROEXPORT.	Difference-in-differences estimator with matching	The definition of the size categories follows the definition of the Colombian National Statistics (DANE): micro: 1–10 employees; small: 11–50 employees and medium-size: 51–200 employees;	All sectors	Exports

Authors	Type of intervention	Country	Brief Intervention Description	Sample Size	Study Design	Firm Size	Industry Sector	Outcomes
Christian Volpe Martincus and Jerónimo Carballo (2010)	Export promotion	Chile	The paper assesses the distributional impacts of trade promotion activities, PROCHILE, on export related measures by using semiparametric quantile treatment effect estimation based on the data of Chilean exporters between 2002 and 2006. The results indicate that export promotion have very heterogeneous effects over the distribution of export performance. Furthermore, smaller firms seem to benefit more from export promotion programs.	1796 firms received support from PROCHILE in 2006.	Semiparametric quantile treatment effect estimation	The paper defines size based on the distribution of total export to define the quantiles and thus different firm size based on this measure.	All sectors	Export, Number of products exported, Average export per country and product.
Gourdon et al. (2011)	Export promotion (matching grant)	Tunisia	This paper examines the impact of FAMEX II programme, which intends to provide Tunisian firms with export-development assistance on a cost-sharing basis, using firm-level data collected through a purposely designed survey. The results suggest that FAMEX II had positive impacts on export growth. The estimated average annual growth rate of export values during the programme period 2004–8 is higher for FAMEX II participants than for the control group. The estimates suggest that FAMEX II improved the extensive margin of export performance. Nevertheless, the estimated impacts of FAMEX II on total firm sales and employment are weak, suggesting some reallocation between exported and non-exported products within supported firms.	The survey performed by the authors covered a sample of 420 firms allocated evenly between FAMEX recipients and non-recipients.	Difference-in-differences estimator with matching	The minimum thresholds for eligibility were about US$140,000 and US$70,000 in sales, respectively, for manufacturing and services firms	Manufacturing and services	Change in log (sales), change in log (number of employees), Change in log(exports), Change in log (number of exported products), Change in log (number of export destinations)

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