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MICROLINKS SEMINAR SERIES

Exploring Frontiers in Inclusive Market Development

SHOW ME THE DATA: EVIDENCE & EXPERIENCE ON SMES

AUDIO TRANSCRIPT

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PRESENTERS

Joao Montalvao, World Bank

Caio Piza, World Bank

PRESENTATION

Anastasia de Santos:

Good morning, everyone! If we can get settled... Welcome to our seminar this morning on “Evidence and Experience on Small and Medium Enterprises” – everyone’s favorite size firm. My name is Anastasia de Santos; I am an economist in the Trade and Regulatory Reform Office in the E3 Bureau at USAID here in Washington.

I’m very glad today to invite our two speakers who happen to both be from the World Bank. First is our colleague Caio Piza, who is with DIME, the Development Impact Evaluation unit at the World Bank. He manages the Brazilian portfolio on impact evaluations, currently focuses on finance and private sector development. Before the World Bank, Caio also worked at the American Development Bank here and at the University of Brazil. He has two master’s degrees in economics, and is currently pursuing a Ph.D. in economics.

And our second speaker is Joao Montalvao. He is also an economist, but at the World Bank’s Africa Gender Innovation Lab. He researches questions on private sector, agriculture, education, and household behavior. And Joao has a Ph.D. in econ from the University College London.

Before we jump into the presentation, we actually had a quick poll for our webinar participants, and I just want to give a shout-out to them. We have folks joining us from around the world virtually on the webinar, and we asked them two questions while they were kind of waiting for us to get started. And I would encourage you to also consider right now – before Caio gives you the right answer – what you would expect? What do you think is the most studied intervention for SME support? That’s the first question. And the second question is: What is the most effective intervention to improve firm performance, including employment and labor productivity. So – I mean, I hope you can think of the various popular and very common interventions that we do to support SMEs.

So, we won’t have it on the slides but I’ll just let you know that by far the most – the folks on the webinar, they think that the most studied intervention is tax simplification: 48% of the vote. Is that right? No, it’s credit lines. Am I reading it wrong? Actually, nobody voted for tax simplification, right? *[Laughter]* Yes, of course, it’s credit lines. I’m like, “That doesn’t make sense...” Forty-eight percent said it’s credit lines. And then, the next – a close second is 30% for value chain linkages. Everything else – matching grants, training... not so much. Interesting.

Okay. And then, the most effective intervention that our webinar participants expected – they thought it was actually training: 29%. And then, a very close second is value chain linkages. And then, the credit lines. So, that’s interesting to – and maybe you have some conception of whether you have the same expectation as our webinar colleagues. But without further ado, I’m going to hand it over to Caio.

Caio Piza:

Can you hear me? Yep? All right. So, good morning, everybody. It’s a pleasure for me to be here. So, I would like to thank Joy and Anastasia for the invitation and for organizing this great event. I hope you enjoy this in the end. I’m sure that some of you are going to leave here – this place – very disappointed because probably you are going to – you came here expecting to get an answer, like “Okay, today I’m going to see

what type of intervention I should put my money in.” And unfortunately, you won’t get the answer.

And also, I’m going to disappoint you since the beginning – because the idea is: Okay, I’ll make you sad in the beginning, and hopefully afterwards you’re going to get more excited. *[Laughter]* So, I’m not going to focus on microenterprises: self-employed people, microfinance, or out of this systematic review. Why is that? Because first, we know already a lot about those interventions. So, quite a few people already did some systematic review or some survey about those interventions. So, it would be a bit redundant for us to include those here. And also, the idea is: Okay, what do we know about SMEs? SMEs means firms with five to 250 employees. You know, firms that can create jobs. What do we know about interventions that target those firms? The answer is: not much. And you’re going to see that.

So, this is – it’s work I did with many other people. Here we have Lauro Gonzalez, a Brazilian economist with the Getulio Vargas Foundation in Sao Paolo. He’s a more finance guy. We have Tulio Cravo from the WIDER Institute in Helsinki. We have Linnet Taylor and Samer Abdelnour from Amsterdam, the University of Amsterdam. We have Isabel Musse from the University of Illinois; she is doing a Ph.D. there. We have Ana Cristina Sierra; she is a Colombian lady who is a consultant for IDB. And we have Isabela Furtado, who is a consultant for DIME – you know, the Development Impact Evaluation unit of the bank – and also a Ph.D. student in Brazil.

So, we would like to thank the sponsors: 3ie and Foreign Affairs, Trade and Development Canada. They used to be call CIDA – or, C-I-D-A. They changed their name, so for those of you who didn’t know that, something already – this is adding something already! So, it’s a...

This is just a brief background – brief outline of what I’m going to discuss today. I will try to be brief and not boring. The topic can be boring, so I’ll try to make it nice and interesting.

So, I’m going to start with some background – just, okay, what is the motivation for us to do this systematic review? Then, I’ll speak a little bit about the logical framework – it’s not actually a theory of change; it’s more a logical framework that underlies those interventions – and explain to you our search strategy, how we actually search for studies, our decision tree to include/exclude studies and so on. And then, finally, talk about the evidence.

So, here is the background. So, everybody know the fact that SMEs create a lot of jobs, not only in developed countries, but in developing countries. So, the question is: Can we use SMEs to support employment in Africa, for example, or some other developing countries? Well, maybe we can. So, let’s spend a lot of money in those programs, then. So, just the World Bank, to give you a sense, spent \$35 billion between 2006 and 2012. That’s a lot of money. If you add to that what governments have spent on this program, what African Development Bank, Asia Development Bank, Inter-American Development Bank are spending on those programs, this number would be probably around \$100 billion. Okay?

Okay, so we're spending a lot of money. What should we expect from those investments? Do you think that they are creating jobs? Do you think they are helping firms to grow? Do you think they are helping countries to grow? Do you think they are helping countries to become – you know, private sectors to become more productive? Or labor is more productive? These are questions we usually make.

And one caveat we have: Okay, you're spending a lot in Africa, but in Africa there are very few SMEs. Most of the firms are micro. So, it's very unlikely that those programs are going to create jobs because they are informal and they are micro. So, there is the problem. If those programs are likely to work, I don't think they're going to work necessarily in Africa – or, in some African countries. They may work, for instance, in South Africa, but not necessarily in Zimbabwe. Right? So, you have to put that in context.

Okay. So, interventions in low and middle-income countries are often based on some assumptions. Assumptions that, okay, these are more medium-sized enterprises; they face market failures or missing markets for credit or insurance, for example. And also, they can actually create some spillovers in the economy, and this would justify some government intervention, for example. In the case of, okay, you have a small firm, this is a small firm who would like to train people to become more productive in the firm, but then this guy who gets trained moves to a different firm. And the firm has spent a lot of money training this and cannot, like "Okay, how can I charge the guy for the investment I put in him? I cannot do it." So, there is a problem of moral hazard. There is the problem of the free rider.

So, there are all these market failure issues going on here that prevent firms to provide the optimum on the training or the optimum of investment in some clean technology and so on. So, this will justify the government to kick in.

And also, the institution environment: Some countries – for example, Brazil – bureaucracy is crazy. To open a firm can take six months. To close, one year. So, who is going to open a firm in Brazil? Nobody, right? So, what do you have to do? You have to be a colleague of the government. These candidates going on in Brazil right now is exactly that. So, firms that actually invest in Brazil get some contracts with the government because the government – their life is easier. So, you need to change this environment. That's – I'm sure that's not for Brazil, you know, that's Latin America; it's a big problem. So, you have to simplify. You have to make the business environment more friendly to firms to grow. Right? There's a lot of interventions – tax simplification programs, business registry – to increase business registration for modernization of firms. And the assumption is: Okay, if you change the environment, firms will take better decisions. They will become more formal and access credit, and once they do all of this, they will grow. Okay? So, you don't need to do anything. Just change the environment, you change the incentives, and firms will take the best decisions for them.

So, in this systematic review, we are going to focus on what we call *direct interventions* – okay, the government or multilateral organizations through governments. They go straight to the firm and they say, "Here's the money. Here's the subsidy to you to update your technology. And do it." Right? Or, we are going to look at *indirect interventions*, where the government doesn't work directly with firms, but they change

the environment. But the target group are the firms. “Okay, I’m changing this environment because I want to affect a firm’s decision in formalizing and growing and so on.” We have these two types of intervention covered in this systematic review.

So, we know: First, we have a lot of interventions. Second, we have a lot of money. And then, the question of course is: Are these interventions working? That’s the question we tried to answer in this – not to answer, but kind of understand and cover in this systematic review. We are going to focus only on low and median-income countries. The sponsors asked us to focus on African countries only, but – so, we realized immediately that that would render just five studies – okay, five, six studies, 10 studies, no more than that. So, we asked them to – “Okay, can we look at low and median-income countries in general? Africa is going to be included for sure, but maybe we can draw some lessons from those countries to African countries.” But that’s a little bit risky, and we’re going to talk about this in the end. And they said, “Yes, go ahead.”

So, here is some idea to give us hints of what’s the – what’s the logical framework underlying those interventions. Okay, you have formalization/tax simplification. What you want to do is, you know, deal with red tape. Okay? So, make the business environment and investment climate more friendly to firms. In the case of credit or matching grant programs – you’re always going to more about this program in particular – some could say, “Okay, there’s some missing credit markets for firms, and also some positive spillover or positive externalities so the government could actually subsidize firms to take better decisions.”

So, lack of skills, we’re talking about firms – all of you have some background in economics or... raise your hands. Okay, great. So, most of you have heard about production function? Production function labor capital? We have to – in order to shift the production function, we have to have more productive labor and more productive capital. So, this is one type of intervention that actually tries to help firms to be more efficient on the labor side.

So, I have different types of interventions, different sets of assumptions. What these interventions are trying to do is make the firm’s life easier. Okay? Overcome those barriers. That’s it; that’s the main...

And the main objective here is, okay, increase employment or create jobs. Hopefully, increase labor productivity, which is a big challenge. And also, affect a firm’s performance. A firm’s performance means profits, revenues, assets – there’s also a factor of productivity. This is what I’m calling here *firm performance*. Okay. Any questions?

So, we decided to look at all papers out there that did some impact evaluation of those interventions. And we looked at electronic platforms; we looked at some papers – you know, seminal papers – to look for the reference in those papers. And we also talked to some experts. So, let’s say we have a World Bank book published in 2011; for sure, you’re going to find it lists a dozen of those references about those topics. So, read the book, look at the references, select some papers. Then, this is how it goes. It takes a lot of time.

So, it took a couple of months to come up with a sample of studies. Just to give a sense, here we decided to focus on the studies that gave us a very good idea of the impact of the program. What's the causal impact of the particular intervention? So, this means we are going to focus only on experimental and quasi-experimental methods. Let me explain this quickly, but hopefully in a way that you – all of you can understand.

When you're doing fact evaluation, some people have in mind monitoring and evaluation. So, you look at some numbers, some key outcomes for the project – for example, employment. How is the employment today when the project is starting? Oh, the employment is 30%. Okay. At the end of the program, after two or three years, you're going to look at employment again. Okay, employment increased 35%. It worked! Great!

But, you know, we are unable to know what would have happened in the absence of the program, so we don't have a control group. So, we need a control group to answer the question properly. So, this means that we are going to focus here only on studies that use methods with treatment, those who actually participate in the program, and control groups – those that didn't participate in the program. So, we can have a very good treatment comparison group or control group when we use experimental methods. We use – you know, you randomly assign individuals or firms to treatment control groups. There are different ways of doing that; I'm not going to talk about this today.

And when that is not possible, you can come up with some alternative methods – and Joao is going to talk a little bit about this in his talk. Alternative methods to try to come up with the number that's very likely to be the causal impact of the program.

So, that's the idea. So, it means qualitative studies – qualitative study is out, right? And the studies that just use simple regressions or different methods – out. If this study has a comparison group or control group or treatment group – in. Okay? So, this means that the final sample of studies is not going to be very large. It's going to be only 40 studies. But look, if you search for low and median-income countries, impact studies, SMEs, et cetera – you know, provide some key words for these electronic platforms – you can come up with a crazy number of studies. Almost 10,000!

Then, what we had – okay, let's duplicate the – let's drop the duplicates. Still, 5,000 – almost 6,000 studies. So, what we did: We hired some RAs to read all abstracts. *[Laughter]* Okay? So, here it's: "You're going to get \$500.00 if you read 300 abstracts. That's a great deal! Do it! For tomorrow!" Okay? And we had these guys – Ph.D. students and master's students reading all those abstracts too. "Okay, this out... this in... this out... this in..." And in the end, 45, 43 studies and we decided to keep only 40 for the reasons we discussed in this systematic review.

From those, we have 34 papers: 23 peer reviewed, 17 working papers, and six book chapters. It's not bad. It's not bad. But we are far away from, for example, psychology or medicine. Medicine has *hundreds*. Or, in some cases, you have – even in psychology, you have 50, 60... and here we have 40. But still, it was much more than I expected at the beginning. At the beginning, I said, "Well, 20. It's going to be 20. It's

impossible you're going to find more than 20 studies." Because you're splitting microenterprises. If you're splitting micro, I was sure it was going to be less. But surprisingly, it's 40 studies.

Here, just to give a sense of – the first study we found: 2003. Just one. But you can see that people were doing more and more in those areas. By 2014, we got 40. And you can see here it's a big jump between 2010 and 2011 because two books were published in this period. Okay? So, one book by – both books by World Bank pretty much. That's why you observe that. And also, David...started producing a lot during this period. If you look at his CV, you see that in 2008 to '09 he was producing quite well. But in 2011, *boom*. I don't know what happened, but the guy became crazy and was producing quite a lot.

So, yeah. That's the picture to give a sense of where those studies are. Okay. We have one for Vietnam. One for Turkey. Okay, we don't have many studies for one country. We have – okay, in Mexico we have quite a lot because Mexico has very good administrative data, so people who have access to that data can do a good job. In Chile as well – Chile, very good data. In Brazil, we have good data too. And we have fair data in Argentina, but it's very difficult to get. Okay?

But this gives you a sense about how much we know about those interventions in Vietnam. Well, hmm, just one study. What about Peru? One. Sri Lanka? Two. Wow, we don't have much evidence. We have very few evidence for each country in particular. So, that's why the systematic review is interesting, because you somehow come up in the end with a number that summarizes interventions across these studies. How convenient is that? We're going to discuss.

To get a sense of interventions – well, maybe this is the first answer for the question Anastasia raised at the beginning. The most frequent one is matching grants. But let me explain: You didn't get it all wrong. We put together matching grants and grant subsidies, so our – we are defining here matching grants and a type of private subsidies and – you know, typical matching grants. So, those who said "credit lines" – yeah, you got it right. But we put it together; otherwise, we would have so many interventions we wouldn't be able to say anything about it. So, we had to do some – we had to take some decisions here, some arbitrary. Training, for example: We have technical assistance; we sometimes put them together with training. Some of you say, "Well, it's not the same." Yeah, well, that's life. *[Laughter]* Right?

So, outcomes. Outcomes: The most frequent one is a firm's performance. But some studies, for example, are able to look at profits – but very few do it. It's very difficult to measure costs. Very difficult. So, they – most of them look at revenues. But, you know, you can increase revenue and cost the same amount and the profit doesn't change. So, if you just look at revenue, it's a bit tricky. Okay? But most of the studies do it. Revenues, assets, profits, sales, and so on.

Here, we have job creation, exports, access to external markets, and labor productivity. These are the most frequent outcomes. Okay? So, in terms of the average size of firms in those studies, the average size is 58. Fifty percent of studies look at sample firms with less than 50 employees, and more than 50% of studies look at firms with more than 50 employees – which is not bad. We have some outliers there you can see.

You know? But most of them are concentrated here. So, zero – it's of course between five and 200, the number of employees.

Results. So, this is going to be a challenge for some of you. In order to compare different studies done in different years in different countries, et cetera, we had to standardize the effects. We cannot say, "Okay, here the increase was 30%, here it was 20%..." Okay, but 20% here is completely different than 30% here, because the base of comparisons is different. So, we have to standardize these measures.

Okay, we can do it. For outcomes that are binary outcomes, for example: exports or not. Did you export more because of this program or you didn't? Like, binary or dummy variables, we create – we compute as risk ratio measures. And for continuous variables, we compute what's called *standardized mean difference*. We pretty much take the beta coefficient, which is the impact on the...standard deviation – just descriptive under the deviation of baseline.

So, this gives a number that doesn't have a unit because the units act as standard deviation. Well, but I would like to see 50%, 30%, or... you won't get there – that here. Okay? So, when the number is positive and below 0.1, the effect is very low. When the number is positive and between 0.10 and 0.20, the effect is okay. And above 0.25 is quite promising. It's a rule of thumb for you guys to go through this. At the end of the day, you just need to get a sense of what works or what's more likely to work and what doesn't seem to be working. I'm going to go through this quickly so we can...

So, we put all interventions together. This is a nice forest plot. You have one estimate per study. So, you can see here this is the coefficient for the impact of the study. The standardized is 0.20 standardized deviation for this study. Here we have the confidence interval: The solid line is zero effect, zero impact. This is the null hypothesis. Okay? The solid line. And the dashed line is the average across different impacts. It's a weighted impact based on the sample size of each study and so forth.

So, at the end of the day, you just need to look at this diamond, which is the average of the averages – the weighted average. It says, "Okay, the program was – if you pull all these interventions together, you see they are impacting positively for improved performance by 0.13 standard deviation." It's not huge, but it's positive and statistically significant. Okay?

So, let's look at only matching grants. Because we have a lot of studies here that look at matching grants, we are able to look only at matching grants. Only for matching grants, we can do it. Okay? So, the effect is also positive – and slightly larger: 0.15. Well, that's good news. That's good news because, for example, all these multilateral organizations, they spend a lot and they invest a lot in matching grant programs. Frankly, they are doing some good job.

If you look at employment – so, you have here 0.15 standard deviation. That's not bad either, so apparently those interventions are helping to create jobs. And look, in some cases, the results are pretty much zero, or close to zero. On average, if you average across these studies, the effect is possible. Okay?

All right. Does it mean that if I do matching grants in this particular country, the effect is going to be 0.15? No. It doesn't mean that. It means that it is very likely to

help create jobs. But you need to understand all the constraints. If you look at this figure here, you're going to see that in some cases you didn't succeed to create jobs, so you need to understand if in that particular scenario this program is going to produce what you want. So, it's not tricky. It doesn't mean that you can just leap and do it. If you look at matching grants, the impact is pretty much the same. So, we had here for all interventions 0.15, for matching grants 0.14. It's a good number.

Labor productivity. The result is 0.11 – smaller. I don't get surprised with that number; it's very difficult to increase labor productivity. So, if you're doing it, it's a good job. Actually, it's a surprising number for it. If you look at matching grants, okay, so the effect is positive. Very small. Very small. And not significant anymore, because the confidence interval includes zero. Okay? So, if you want to increase labor productivity with matching grants, this is telling you, "Well, you have to do a better job than all these programs did, otherwise it will not make it." Okay?

We look at secondary outcomes – for example, exports, innovation investment. We found some positive results, but the impact is very, very small. Okay? So, we have all these discussions, detailed discussions in the systematic review that's coming out in a couple of months.

So, we did also meta-regressions. So, forget about this table for a while; I'm just going to understand here what we did. So, we have all those numbers and the figures, and we are going to run regressions, including some controls. Because we have a very small sample size, or a very small number of studies, we are able to include dummy variables. We cannot include all of them together; you have to do one each time. So, one we did – okay, let's create a dummy variable for the Latin America region. We did that. What happened? Well, the coefficient drops a bit. So, if you include Latin America, the coefficient drops from 0.13 to 0.10. It means that Latin America, the effect is smaller or bigger than the real effect. The real effect, if you include Latin America, is 0.10. So, Latin America was kind of inflating the effect. Once we control for Latin America, you get this smaller effect. Does it make sense?

But for the Africa region, you get a larger effect. Right? And firm size, if you control for firm size, look: Firm performance is larger; firms are more likely to have better performance. Makes sense, right? And here, *risk of bias*: Let me explain this quickly. This...collaboration, 3ie, they have a very strict way of classifying these things, according to what they say risk applies. If you use a non-experimental method, like difference/inference, they want to know, "Okay, you did a control for all confounding variables: yes or no? Did you look at the spillover effects? Could you do something to control for your study?" Very few studies do it. Outcome reporting, for example: The study said I'm going to look at 10 outcomes, then you look at a table – just three outcomes with stars in front of coefficients. They're fishing. Okay? Analysis reporting? Do these studies have analysis reporting? Okay.

So, all the risks. They have all these categories. They rank these studies based on this and in the end they come up with low risk of bias, medium risk of bias, high risk of bias. In our case, only two studies classified with low risk of bias. Most of these studies had high risk of bias. So, what we did here: dummy variable. If the study has a high risk of bias – or, in other words, it means it didn't employ the method properly. That is the same. And it says, okay, if you control for that, the coefficient drops a lot.

You see? All those cases. It means that the big results are for studies that have a very high risk of bias. Once you exclude those studies, the numbers go down. Okay? The best studies have a much lower impact, show a much lower impact. That's a...

Okay. So, meta-regression. We also found some indication of publication bias in some cases. So, it means that if you found a positive result, it's more likely that you're going to have your paper published or a chapter in a book and so on. If you don't find any effects, you have to look for a working paper.

Concluding remarks. This is very important. This is the takeaway for you guys. At the end of the day, we got a bit frustrated because, okay, we spent almost two years on the systematic review, and we spent a lot of money, we hired a bunch of people, and we didn't sleep a few days to finish this, and a deadline... What we got in the end, I don't know the answer. Right? So, in the end we say, "Okay, we have 40 studies – that's great – but done in different places. We have different types of interventions, we have different projects... all different." Right? So, can we learn something? Well, maybe you can, but you have to make an effort to summarize those evidence.

So, it means that you should interpret these results with a lot of care. Okay? It doesn't mean that you found some positive effect of matching grants and you should say, "Okay, let's lobby for matching grants!" No, you shouldn't do it. It's tricky. Okay? We have some indication of publication bias. We also have problems with statistical power; it means that we have an insufficient number of studies to say if that particular intervention worked or not. Okay?

So, the main message here: What should I do, then? You should evaluate your program and help us to build the knowledge. Right? If you have a program, if you're putting a lot of money in some particular program, please do an impact evaluation. It doesn't need to be experimental. It can be experimental – great. But if you can do it non-experimental, please do it. Otherwise, you can be just wasting your money and your time. Okay?

Thank you very much. *[Applause]*

Joao Montalvo:

Okay. So, thank you for staying for the second half of this joint presentation, which I hope – it the sound okay? – which I hope is as engaging as the first half, delivered by my colleague Caio.

This is joint work with Francisco Campos and Leonardo Iacovone, both at the World Bank as well. And this work focuses on matching grant interventions. More specifically, it focuses on a very precise question, and the question is: What type of firms participate in matching grant schemes? So, what differentiates firms that do participate and firms that do not participate?

So, as you know, participation in matching grant schemes typically goes on two broad stages. First, firms become aware – conditionally, firms become aware of the program. They decide whether they want to apply, and then the government decides which firms receive the grants. So, you want to understand what part of the participation is driven by a firm's willingness to participate and which part is driven by screening on the part of the governments?

Let me try to convince you why this is an interesting question. I think it's an interesting question for at least the following three reasons. First, matching grants interventions are currently a very popular intervention. In the past twenty years, it is estimated that more than \$2 billion was spent on these interventions. For example, 40% of recent World Bank projects in private sector development include matching grants scheme components.

Second, government and donor funds are limited. So, we hope that it is – we expect that these programs are targeting the firms that are benefiting the most from these interventions. So, you want to know who actually ends up participating in these interventions.

And the third reason is that, as Caio pointed out, there is very limited rigorous evidence on whether these interventions work or do not work. And typically, these evaluations, what they do is they compare firms that receive the grants against firms that do not receive the grants. So, it's very important that we are able to understand which characteristics predict participation so that you can find a credible comparison group of firms, so that you can make the comparison.

Before I go on and describe the data and the methodology, I just want to quickly recap three key features of matching grant schemes that are relevant to our discussion about participation. The first one is that the funding channeled through these schemes is typically almost always restricted to so-called soft or intangible capital. So, think about employee training, investments in marketing, advertising, quality certification, software, et cetera. So – and the rationale for government intervention is that some firms would like or have benefitted from investing in this type of soft capital, but they are prevented to do so due to some market failure. For example, access to credit. As in any other investment, investment in soft capital requires an upfront payment today and an expected return later in the future, which is uncertain. So, firms that have liquidity constraints that cannot borrow against the future, even if they wanted they cannot invest in soft capital. So, ideally, we hope that these programs are targeting the most constrained firms, the firms that in the absence of the program are not able to invest in soft capital.

The second key feature is that these programs are typically on a cost-sharing basis. Okay? So, the government provides a subsidy and the firm has to match that subsidy. And the idea, the underlying assumption is that this – by keeping some of the firm's skin in the game, it helps attracting firms that value soft capital the most. But notice that this is a contentious issue, because if the failure that is inhibiting firms to investing in soft capital is access to credit, then by requiring that the firms enter with some money, you are probably basically screening out the most constrained firms.

And then, the third key issue is that the actual participation is the outcome of a sequential process. As I said, firms first become aware, then conditional awareness – they decide if they want to participate. And then, the government during the last stage decides which firms receive the grants. And each of these different stages have different implications on who participates. And this is what I'm going to talk about.

So, the first stage: awareness. Awareness can be driven by at least the following three factors, at least. First, program outreach efforts. It might be that the program is

trying to target a specific geographic area. It might be trying to target a specific industry, or it might be trying to target female-owned businesses. So, we expect that these enterprises are more aware of the program.

Third, social networks. Who I know. Do I know any firm owners that have heard about the project – the program and they tell me about it? Do I belong to a business association that was exposed to program outreach efforts? If yes, then I'm more likely to be aware.

Third, my own incentives to participate. This might be the opportunity that I have been looking for a while. I ought to invest in soft capital; I don't have the means to do so. I want to partner. So, if that's so, I might invest a small time and effort into seeking information about government subsidies of this.

The second stage is the application stage. So, once I know, I have to decide whether I apply or not. And this is driven by a cost-benefit analysis. I have to think whether it is worth for me or not to participate in this program. And this is for me where it is – the stage is more interesting. Because theoretically, we really don't – it is ambiguous which types of firms...selects. On the other hand, you might – many models would predict that the most constrained firms are the firms that benefit the most from participating in matching grant schemes.

On the other hand, you might think – and I think it's a fair assumption that – or hypothesis that the least constrained firms, that these firms that are on the trajectory of high growth, the so-called "gazelles," they might have the complementary resources that magnify, intensify the returns to investing in soft capital. And I'll be providing some insights on which type of firms actually apply.

And then, lastly, the last stage is the acceptance – which I actually combined with disbursement for simplicity. And in principle, this acceptance into the program should be based only on eligibility criteria. However, this is the stage where program staff has the most discretion – and unfortunately, sometimes, bias. And this is because the metrics that programs use to evaluate the performance of firms is flawed. It is typically based on a before-and-after analysis. But as Caio mentioned, we don't know what would have happened in the absence of the matching grants programs. It might be that the firms that these programs are supporting, they are on a high growth trajectory that has nothing to do with subsidies. They'd just be on that trajectory even in the absence of the intervention.

So, given that we don't know what would have happened, it is natural, it is understandable that program staff pick winners. This is what they call *cream-skimming* in program delivery. And it might come at the expense of the program adding any additionally on the firm's performance.

So, let's see how these different factors affect participation in a recent matching grant program in Mozambique that we studying. Okay? So, basically, the key features of this – it's a very standard matching grant program. It's called MESE, which is an acronym for a long Portuguese name that I will spare you. Basically, it's providing 70% cost sharing grants for micro-enterprises and 50% for small and medium enterprises. And

the maximum grant is about \$70,000.00, which is actually quite a large grant compared with others.

The program was advertised through the standard channels, and it prioritized women-owned businesses and enterprises operating in remote areas. And one unique feature of this program that other matching grant programs do not always share is that firms selected to participate received advice and mentoring on how to implement these grants and translate these grants into the desired outcomes: increased growth.

So, let's have a quick growth at the activities that were approved. Essentially, in a nutshell, basically you see that the most popular investments were in employee training, marketing, and quality certification. And about 90% of these investments, they came from micro-enterprises. Micro-enterprises, as we have defined, are firms that have less than 25 employees. They are not that...

And let me describe our data. We have – our data comes from 300 firms that did not apply to the program and 700 firms that did apply to the program. I apologize for the typo on “participation” – it’s “application.” Okay? And this survey was collected shortly after the application stage but before the grants were delivered. And it collected a rich set of characteristics on both the firm and owner level: things like basic demographics of the owner, management practices, financial literacy and intelligence, social capital, basic firm characteristics like the firm’s age, number of employees, physical capital, access to capital, et cetera.

A quick snapshot of the types of firms in our sample: About 20% of the firms, they are five years old or younger. The same number – about the same number have at least workers. And about 60%, like 64%, they are located in the urban areas.

What about the owners? About 30% - this is a full sample, both applicants and non-applicants, okay? About 30% are females. About half have at least medium education. And interestingly, you can see that despite – only 11% belong to a business – are members of a business association, yet about half know at least another 10 firm owners and interact on average 30% – one-fourth of the time, they interact at least once a month with other firm owners.

So, how do all these characteristics translate into participation across the different stages: awareness, application, and acceptance? So, this is the – these are the main results. We can come back to this table if you want, but basically, if you want to look at this table, the way to do it is the following: Each column corresponds to a separate regression. The first column looks at the determinants of awareness. The second column looks – restricts the sample to firms that are aware of the program and estimates the determinants of application. And then, the third column looks only at firms that have applied and estimates the determinants of entering the program. And in blue, you have the determinants of overall participation. We can come back to the table or I can just jump straight to the main takeaways of this table.

The first key takeaway is that awareness – the awareness stage is the key stage to explain participation. We see that the most dynamic firms managed by the best owners are the ones more likely to be aware. Specifically, younger and relatively larger firms owned by socially-connected and high-skill owners are the ones more likely to be

aware. So, it seems that it is possible that the program is targeting firms that are the best firms. It might be that these firms are not the ones that would benefit the most from the intervention. But what is important to notice is that this pattern is mostly driven by increased awareness and self-selection on the part of firms and not by screening on the part of governments. It seems that these are the firms that are more likely to be interested in these programs.

Nonetheless, we also find that the program – among those that have applied, the program favored socially-connected owners located in urban areas, which goes against its goal of targeting isolated firms in non-urban areas. So, potentially, we have some evidence here of cream-skimming as well on the part of governments.

And finally, in contrast to the previous findings, we find that among those owners that are aware, we find that it is precisely those who lack managerial capacity and have more credit constraints, these are the ones who are more attracted to the program – which indicates that if everyone were to be aware of the program, the program could probably attract the most constrained owners, which are the ones that, in principle, this program is going to.

So, what are the policy implications of these results? So, the first one seems to me that there is room for improving targeting. We should think about designing alternative information strategies that reach out both to gazelles – the best firms – and the “subsistence” firms, which seem not to be aware of the program and might be the ones that benefit the most. The second thing to improve targeting could be to provide better incentives for program staff to avoid cream-skimming. So, the metrics that they should use shouldn’t be based on the before and after. They should try to evaluate the causal – they should be based on a rigorous impact evaluation of the program. They need to know what is the additionality of this program. And so – and in particular, this evaluation of the causal impact should be done over the gazelle distribution, because in reality we really don’t know which firms benefit the most from these interventions. So, is it the case that the so-called gazelles benefit the most, and therefore we should target these ones? Or, is it the case that these programs – and many other programs that promote SMEs – are more effective among the less developed firms? And if yes, then we want to target, we want to develop strategies that attract these firms. Unless you know which firms are the ones that should be targeted by the projects, try different information campaigns, different incentive packages precisely to see which ones work better in attracting the firms that you should be attracting.

So, this is my presentation. Thank you very much. *[Laughter]*

Anastasia de Santos:

All right. Thank –

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QUESTIONS AND ANSWERS

USAID Microlinks: We have over a hundred online participants with a pretty active discussion. And so, I'll – this is the Q&A session, and I'll turn it over to the webinar participants first. But when we do – we'll alternate between webinar and in-room – and when I do pass you the mic, just state your name and organization so we know who you are. And then, ask your question. So, let's go to the web.

Anastasia de Santos: And I would just add, please keep – for those who are asking a question in the room, please keep your question concise if you can. So, starting with the webinar questions – and I think as a background for our speakers, I think some of our colleagues joined late, so they may need a reminder for some of these questions to understand the presentation. One question – or, a group of related questions for Caio: How is firm performance measured in your systematic review? And what outcomes were suitable for meta-analysis jobs or revenues? And I think maybe a related question is: Does your review include agriculture-based SMEs?

And I think – and then, a second question for both of you: Who should conduct evaluation of NGOs and government programs? I think they mean: If it's not a World Bank program, who should do the evaluation?

Caio Piza: Oh. Can you hear me? Okay. So, first, we didn't cover agriculture – just private sector firms in urban areas. No agribusiness – or “ag.” The decision for that was a bit arbitrary because we have a lot of stuff going on in agriculture, so quite a few people are already doing that, and very few people are doing what we did. So, we decided to – okay, so, this is our comparative advantage, so let's stick to it. And hopefully, you're going to get the answer for agricultural from different systematic reviews.

And how we did measure those outcomes? Well, we pretty much relied on how they were measured in the studies. So, in some cases, these studies reported outcomes for, let's say, revenues: a continuous outcome in dollars or in current local currencies. That's another reason for why we should standardize measures, because we cannot compare dollars against, for example, pesos or Brazilian reals or et cetera. So, we collected those information on profits, revenues, sales in some cases, assets... So, we looked at doing that. We put together some stock variables with...which is not very accurate, but we had to do it. Otherwise, we wouldn't have a sufficient number of cases to report here.

But we – first, we standardized each measure for each study. So, using the information provided in the study. And we pretty much defined a variable that's firm performance if the study reported information: profit, revenue, assets, and so on. Right? So, this is – this is not ideal, but in many cases, we have to take those decisions. Otherwise, we are not able to say anything about what's going on.

So, that said, I would say another thing about meta-analysis, meta-regression for those types of studies. So, meta-regression is very, very useful and inaccurate when you have, for example, medicine. You replicate the same intervention many, many times, and then – or, in some cases, in different scenarios, but you somehow have some control over the environment. Here we don't have that. Right? So, it's a battle. There are many people who don't trust and don't believe in meta-regression to this type –

applied to this type of work. But on the other hand, we have organizations pushing more and more and more for meta-regressions, so in the end it's pretty much what the sponsor or what the organization really wants to do, not necessarily what the researcher would do by himself or by herself.

So, in our case, we said, "Well, we were very honest from the beginning, so we have this quite heterogeneous set of studies. And we don't think we would gain much doing systematic – meta-analysis for those studies." But then, we said, "Well, yeah, it's true. But there are ways of trying to control for some other iterative factors, and you can try the best possible, and in the end you just flag that people should read this with some care." This is what we did. Okay?

I hope I answered the question.

Joao Montalvao:

Yeah. I can take the next one. Who should do evaluations? The World Bank Africa Gender Innovation Lab and I am. *[Laughter]* No, we don't do impact evaluations on World Bank projects; the impact evaluations are on NGO interventions. So, it's not restricted. But I think that the key consideration is that whoever does the impact evaluation, the team that does the impact evaluation should have researchers in the team. They are less constrained; they are able to put questions that perhaps don't come across immediately when our – when our activity is just to implement projects. And so – I think – yeah.

Caio Piza:

Yeah, I would like to add a couple of lines here. Our teams, they work – they collaborate on some impact evaluations, but they are very independent at the bank. But both of them work with field coordinators. And for example, we paid a very – we paid close attention to the implementation stage of the interventions to make sure that at the end of the day you have good data, you implemented the intervention very well – so, not only good data, but you actually managed to *get* data. Right? So, for example, if the take up is very, very low, it's impossible to do any evaluation. So, if you don't pay close attention, if you don't work with the government, if you don't collaborate during the whole process, it's very unlikely that you're going to get an impact evaluation at the end.

So, we have a lot of failed cases. Many, many, many. Okay? So, for each impact evaluation that goes really, really well, we have two or three that didn't work, and didn't work because of, in most of the cases, implementation issues. Even having somebody on the ground working with the government full-time on a daily basis, you're still not able to get the sample size needed, good data, and so on. So, for those who are willing to do impact evaluation, please pay very close attention to implementation. And if you hire somebody, make sure that this person is fully engaged and committed to do the evaluation. Right? If you hire a star in academia, the guy is so busy that it's very unlikely he's going to pay five minutes – spend five minutes of his time doing your impact evaluation. That's – that's –

Audience:

And I just wanted to add to their point, actually, just to emphasize for everyone here, that both of their teams do work on impact evaluations for completely external independent organizations like an NGO or – so long as you're doing interesting work related to kind of their topic areas. So, I guess the folks who are here physically have an advantage that you can even approach them afterwards to talk to them about it.

Caio Piza: A disclaimer here that's very important: This doesn't reflect the World Bank's opinion. Okay? This is my opinion. *[Laughter]* So, this is really, really important to say because, "Okay, a World Bank guy came here and said there's all these issues about Brazil!" No, no – I said that. World Bank doesn't have anything...

USAID Microlinks: So, we'll actually take two questions from the room. If you have a question, just raise your hand, say your name and organization.

Audience: Good morning. My name is Khalesh Ayer. And I am representing an impact investment agency called Liquid Investments. It is based out of the Netherlands and I am from India. My question is that we've made investments in certain SMEs and we've provided matching grants also, but my experience has been that the grants – the impacts get manifold only when we also invest in the complete value chain. So, there are specific instances in the value chain which are part of the whole SME value chain but not specific to the SME. But once you make investments in those parts of the value chain, the impact increases. So, I just wanted to understand your perspective on that.

Audience: Hi, my name is Kate Skafidas. I work with TechnoServe. Your messages about doing an impact evaluation on SMEs and interventions is loud and clear. And so, I was wondering if you guys could give an organization like my own, which is looking to an impact evaluation on our interventions, any advice. We do training to businesses. And any advice from the 9% – or, was it 9% or – 9% of the research that you saw that was doing training interventions on how we could replicate or improve upon those that we saw? And also, I'd love to hear more about the control group that you established for your intervention. Thank you.

Caio Piza: So, I can take the first. This is a very important point because every time you design an impact evaluation, you have to be very careful with what's called *theory of change* or *causal links*. Okay? So, in many cases, you have an intervention and you want to increase profits or a firm's growth. Okay, but you have to follow many steps to get there. And you – if you're not – if you don't make sure that you actually are addressing all of those constraints along the way, it's very unlikely that you're going to help firms to become more profitable and so on.

So, many people in the past used to do: "Okay, I have this intervention. My final outcome is this. It didn't change the final outcome: The program doesn't work! It's a big failure." Well, you know, you trained the teachers, but actually the students didn't show up. Right? So, of course they are not going to improve test scores. So, all of these issues, they are present in our evaluations as well, so it's very important to – "Okay, in order to change these final outcomes, I have to change 10 intermediary outcomes." Okay?

So, okay, my program wants, for example, to develop – skills development. Training. Okay? So, first of all, I have to be sure that I have a curriculum. Second of all, I have to be sure that these guys are being taught properly. Then, they have a sufficient number of classes or hours. And then, I can evaluate if they learned or not in the end. So, I have to do it. Many training courses don't evaluate if a student has learned or not. Then, I need to make sure that there is some demand for those guys going to the labor markets with those stocks of capital you just helped to build. Is there demand?

No, there's no demand; the economy is actually shrinking. So, who is going to hire those guys? I don't know. So, you have to be careful if you're mapping labor and supply sides, if you're taking care of all those links, causal links that come up with your impact evaluation.

Joao Montalvao:

I'll answer the specific question on the control sample. So, basically, this is the reason we did this study, is that we are conducting an impact evaluation. So, the initial goal before it ended up in this paper was to find a credible comparison group of firms. So, what we did for the control group in this paper, we just followed the basic eligibility criteria to be part of the program, and they were essentially based on firm size. So, this program was only valid for micro and SME firms.

So, what we did, we asked the Institute of National Statistics to provide us with a listing of such types of firms in the country, and then we randomly sampled 700 firms in this case to be part of our study.

USAID Microlinks:

– webinar. I actually answered some of the webinar questions. So, I have my own as the USAID Microlinks. Question for Caio: Why do you think you found the regional effects that you mentioned where Latin America is boosting the number but it's different for Africa? If you could talk a bit more about that in the systematic review? And a question I have for Joao is: You mentioned this cream-skimming effect. Why do you think – just to draw a bit more – why do you think program staff may be pressured or have an incentive to cream-skim? And how do you think a manager can counter those incentives? How can we actually help them to avoid that and look for those firms who will just benefit the most?

Caio Piza:

I'm going to speak right here, because it's very difficult to say why, to answer the question. What I can tell you is... let me start with an observation. We put together a quite heterogeneous sample of countries in one dummy variable we call "the African region." Under that dummy variable, we have Tunisia and Ghana and countries that are not very comparable. So, some have larger firms; some work with smaller firms. In Latin America, I think the sample is more homogeneous. We have relatively larger firms compared to African countries. So, these firms are – if they are larger, the bigger scale, they have larger scale. So, if you believe that the increasing returns is to marginal returns, we would expect a smaller effect in those firms because they are bigger, so it's more difficult to increase 10% profits in larger firms than in very small firms.

So, in Africa, if you look at the composition in firms, you're probably talking about smaller, than they have a greater potential to grow. So, maybe if you look at – you know, that's the reason why we found a larger effect for the African region than for Latin America, because we have actually a different composition of firms. We have smaller probably in Africa that are more likely to grow faster in the beginning, and bigger ones in Latin America. That's it.

Joao Montalvao:

I think the problem with cream-skimming is the result of the way implementers measure the impact of their programs. And as I said, they typically rely on a before-and-after comparison, and so they have the tendency – because they assume that any difference between now and tomorrow is driven by the program, which might not be

the case. But these generate incentives for implementers to pick the winners – which might not be the ones that benefit most.

So, I think that the conclusion that comes out of this analysis is that we need more impact evaluations to understand what is the real causal impact of these programs across different types of firms. Unless you understand who are the firms that really benefit the most, we should then instruct our implementing partners on the ground to pick not necessarily the winners but the firms that this study demonstrated are the ones more likely to succeed.

USAID Microlinks: Great. We'll take two questions from the room.

Audience: Thanks. Bryan Stroube from the University of Maryland's Business School. So, this is a really interesting analysis of kind of first order issues, of whether these have an impact at all. But from a kind of higher level standpoint, I'm curious: Did you see any discussion or attempt to calculate the cost of the actual interventions in ratio to the benefits they generate? You know, coming from a business school, I think that's the final ratio that we care about in terms of implementing this in other places, et cetera.

Audience: Hi, Allison DeMaio from PYXERA Global. We do linkages and small business development in Mozambique and Ghana, and I have a question about sector-specific: Did you do any desegregation for goods versus services in Mozambique? And if so, was there higher participation among certain sectors?

Caio Piza: So, thanks a lot for your question. That's actually something we would love to do and we aim to do it. We'd love to do it. So, we are going to actually look at different interventions to actually be able to compute cost-effective – to do some cost-effective analysis. To our surprise, we didn't find much detailed information about cost. Right? *[Laughter]* And... yeah. So, we have an RA right now trying to collect those information. She's struggling quite a lot. Because first, it's difficult to find even documents, background documents for those interventions. "Okay, what's the market failure this program is trying to address? Let's look at the document." Well, there's no document. You know? Then, you e-mail the guys at the agency and you get no answer. And, you know, all these issues going on. If you don't get even the background document, I don't think you're going to get the costs of those interventions. But that's key.

We have one piece of the analysis here which is standardized measures of different interventions. If you are able to collect the costs, it's just – you just need to use those information to compute the cost-effective analysis. That would be awesome.

Joao Montalvao: So, on the sectors: By design, the program aimed at targeting firms in manufacturing. So, we – in those results that I showed, we do control for where the firms come from or they don't come from. The thing is that our sample is – we only have 1,000 firms, which from a statistical perspective is not that big of a number, so we're not able to desegregate those results that I showed across different sectors. But firms in the manufacturing sector were the ones that were more targeted.

USAID Microlinks: Thank you so much. And please join me in thanking our two wonderful presenters. *[Laughter]* Yeah, it's really a treat to have you both here! For the in-room participants, you'll see some surveys on your seat. We do care about your feedback in

sort of improving our seminars as we go, so please do take some time to fill those out. And the online webinar audience, you'll see some polls if you haven't seen those already. Thank you so much.

[End of Audio]