Participating or not?

Characteristics of Female Entrepreneurs Participating and Completing Entrepreneurial Training Program

Leonardo Iacovone[1], Gabriela Calderón[2], Cristina Mac Gregor[3]

If you can empower them with the right things, the right tools, they can lift up their family. And that ultimately lifts up their community and their society.
Melinda Gates

A growing body of literature suggests that "managerial capital" or "entrepreneurial skills" are a crucial driver of firms' performance (Bruhn et al. 2010 McKenzie and Woodruff, 2017, Bloom et al. 2010, Bloom et al. 2013). However, despite some recent promising approaches (Campos et al. 2017, Anderson et al. 2014), finding an effective and efficient manner to transfer these skills is unclear as shown by the mixed results of various business training programs, especially for female entrepreneurs (Woodruff and Mckenzie, 2014). Mixed results of these training programs usually are explained either by the typical low take-up or poor attendance which significantly reduces the power of the evaluations, and limits importantly the effectiveness of these programs.

McKenzie and Woodruff (2014) show that the average participation rate among different experiments that evaluate business training programs around the world is about 65 percent. Although this is a generalized problem, there is relatively little literature analyzing the low take-up rates of business literacy programs. Bruhn et al. (2013) analyzed low take-up rates for financial education courses in Mexico and found that one of the reasons is low perceived benefits. However, these type of analysis for entrepreneurial training programs have not been done yet. Therefore, identifying the characteristics associated with take-up and completion of these type of programs is

[1] The World Bank, Washington D.C. 20433, liacovone@worldbank.org (Corresponding Author)
[2] Ministry of Finance and FAB! Learning Mexico, gabriela_calderong@hacienda.gob.mx
[3] University of Chicago, cmacg@uchicago.edu

of upmost importance for designing effective policies to improve business performance, as well as allow their evaluation. In this paper, we analyze how those women entrepreneurs that did complete the training differ from those that got an offer to receive training but decided not to participate, or dropped off before completing it.

While it is possible that individuals with higher performance or human capital are less likely to take up and complete these programs because they have higher opportunity costs of attending (Ariga and Brunello 2006), at the same time it is possible that these individuals are more likely to attend because are able to better assess the importance of the training and their needs, or are characterized by higher motivation and desire to improve. Our finding suggest that that women entrepreneurs with higher performance and non-cognitive skills are more likely to complete the program, while we find no difference in terms of their cognitive skills nor in terms of their input usage.

The rest of the paper is organized as follows. First, we briefly describe the sample, then we explain the empirical strategy used. In the third section we compare the different entrepreneurs according to their take-up status based on a series of observable traits of the entrepreneur and finally we provide comparisons according to inputs used and business performance.

I. Experiment's Context and Sample

A randomized control trial in Mexico was conducted where, building on Campos et al. (2017) and Calderon et al (2013), we offered to female entrepreneurs a training program consisting of both traditional business literacy training[4] (42-hour intervention) and personal initiative training (18-hour intervention). The latter is a psychology-based mindset training to build self-starting

[4] The business literacy training covered the following topics: 1) cost calculation, 2) determination of prices, 3) legal and fiscal concepts, 4) organization and production strategies, 5) marketing, 6) sales strategies, and 7) creation of business plan.

behavior, innovation, identifying and exploiting new opportunities, goal-setting, planning and feedback cycles, and overcoming obstacles. The program was offered in five different states of Mexico[5], it was funded by INADEM (Mexican National Institute of Entrepreneurs) and it was implemented by a Mexican NGO, CREA, specialized in providing support services to female entrepreneurs. After an information campaign through official governmental channels of communication and direct invitations made by local allies of CREA, 3955 female entrepreneurs applied to the program and 2030 were offered the program after a random selection. The random selection was done within batches after at least 40 entrepreneurs had shown interest to one of the CREA's center,[6] and for each batch we stratified the applicants based on a "skills" index built using the level of education of the entrepreneur, the education of her parents, and the results of the Raven and Digit-span recall test.

The characteristics of those offered the programs are the following. On average the entrepreneurs are 41 years old, have 10 years of schooling,[7] and have been running their current firm for 5.5 years average. Most of the businesses (41%) are in retail, their weekly average (median) revenues are 3782.16 (1800.00) MXN and their average (median) weekly profits are 1421.71 (700.00) MXN, respectively equivalent to 242.28 (115.30) and 91.07 (44.84) US dollars.[8] These are micro entrepreneurs as on average they employ one worker. Moreover, around 60% don't employ any workers. The Table A1 in the Online Appendix shows the detailed baseline characteristics.

Empirical analysis

[5] Mexico City, Mexico State, Querétaro, Guanajuato and Aguascalientes.

[6] Given logistic constraints to fill larger groups, in a limited number of cases (around 20% of the cases), the groups that composed the strata were of smaller size than 40.

[7] Corresponding to the first year of high-school.

[8] We use the exchange rate of 1USD = 15.6 Mexican Pesos, which is the average of the exchange rate during the period when the baseline survey was conducted (Nov 2014 – Dec 2015), for all currency conversions in this paper.

We estimate a simple model using key characteristics and outcomes of women entrepreneurs, and their take-up status. The sample includes only women entrepreneurs assigned to treatment — those who first came to the CREA's center, inquired about the program, asked to participate to the program, responded to the baseline survey, and were randomly selected to participate- are classified into three groups. Among these entrepreneurs we distinguish three groups. First, entrepreneurs who did not take-up any class after being invited. Second, entrepreneurs with partial take-up who started but did not complete the training program. Third, entrepreneurs who completed the training program. Accordingly, we estimate the following equation:

(1)

Where is either a characteristic or a measure of business performance (See Section II and III for a detailed description), and and are dummy variables equal to 1 respectively for those entrepreneurs who started the training but did not complete it and for those who started it and completed it, are state fixed effects, and are the standard error terms.

II. Comparing characteristics

To start we focus our analysis by comparing characteristics among the three types entrepreneurs such as education, skills (both cognitive and non-cognitive), poverty level and hours allocated to household chores, as well as business characteristics such as proprietorship structure (i.e. the women is the sole owner), and age of business. The results are shown in Table 1.

Among the most notable differences regarding cognitive skills and education (Columns 1-5 of Table 1), women entrepreneur who completed the training program present a significant difference in years of education (approximately 9 months). We do not detect any significant difference between those who start without completing the program and those who don't take up at all the training regarding cognitive skills and education, except that the former score about 5 percent lower in their Raven test.

However, we observe a number of significant differences between the three groups when focusing on non-cognitive skills (Columns 6-13 in Table 1). Those entrepreneurs who completed the training appear to have a significantly higher level of trust, self-confidence and higher propensity to take risks. Similarly, those entrepreneurs who started but did not complete it appear to also have higher self-confidence and risk propensity than those who did not attend at all.

Finally, some differences were detected on variables related to household and business characteristics (Columns 14-19 in Table 1). Those entrepreneurs who completed the training live with smaller families, dedicate a significantly lower amount of time to child rearing, and at the same time are less likely to be sole proprietor, which probably free them to dedicate more time to their business or training programs. Instead, those entrepreneurs with incomplete take-up do not present significant differences compared to those with no take-up at all in terms of household size, time allocated to kids and household chores. Those with incomplete take-up are significantly more likely to live in a poorer household than the rest of entrepreneurs – highlighting a possible reason for them to be unable to complete the training when facing competing demands from their households.

III. Comparing performance

In order to compare performance among the three types of entrepreneurs, we begin analyzing the inputs used in their businesses, such as: number of days worked, number of paid and unpaid workers, salaries paid, input expenditures, and an index aggregating inputs and salaries variables (Columns 1-6 in Table 2). Under all these dimensions but one we do not see any significant difference between those entrepreneurs who did not have any attendance and the others two groups, those that started without completing the training and those that started and completed it. The only significant difference, which is significant even if just marginally so, it is in the monthly

amount of salary paid being 30 percent higher for those entrepreneurs who completed the training relatively to those who did not take up.

However, while no significant differences are identified in terms of inputs and labor, large and significant differences emerge in terms of most of our collected measures of performance.

First, we focus on formalization, access to credit and management (Columns 7-10 in Table 2). Under all these dimensions those entrepreneurs who started and completed the training are superior to those who did not take up, and in most these dimensions they are also significantly superior to those entrepreneurs who just started without completing the training.

Second, when we analyze their performance in terms of profits and sales (Columns 11-14 in Table 2), we observe that both groups, those who completed the training and those who just started without completing it, are significantly superior to those who did not take up the training, with differences ranging between 12 and 38 percent in terms of the different performance measures. Given we have multiple measures of performance we also compare these entrepreneurs in terms of an aggregate index of profits and sales (Column 15 in Table 2), and the differences just highlighted between both groups of those entrepreneurs who started without completing the training and those completing it versus those who did not take up the offered training are confirmed and range between 16 and 26 percent.

IV. Conclusions

In the last few years both researchers and policy makers in developing countries have started worrying about how to improve performance of entrepreneurs, with a special attention put on firms led by women which are often found lagging behind those led by male in terms of their business characteristics and performance. A typical approach that has been widely adopted focused on training to improve the way these firms are managed, unfortunately these attempts have been traditionally met by mixed results (Mckenzie and Woodruff, 2014), while newer promising

approaches seem to emphasize the importance of soft skills (Campos et al, 2017) and more focused training (Anderson et al, 2014). One of the issues which has so far got limited attention is the problem of low take up which, from the researchers point of view limits the power of these experiments, and from the policy makers perspective limit the effectiveness of their efforts. In this short paper, we try to shed some light on this selection issue relying on a large set of characteristics collected at the baseline for an experiment providing training to female entrepreneurs in Mexico. Our results can be grouped into three main findings. First, we find large performance differences, in terms of management, access to credit, sales and profits between those who complete the training and those who do not take up, coupled with large differences in terms of profits and sales between those that just started without completing and those who did not take up. Second, we find no differences in terms of inputs and labor usage between the groups. In terms of characteristics of the entrepreneurs, the differences are smaller and more subtle, mostly around non-cognitive of soft skills such as self confidence and risk attitude, characteristics that are harder to identify and target. In addition, we found that those entrepreneurs more likely to complete the training program tend to allocate less time to child rearing or live in smaller households. These results suggest that policy makers may potentially increase take up by targeting among the potential beneficiaries those that appear to perform better, i.e. those with higher profits, sales and better management.

References

Anderson Macdonald, Stephen, Rajesh Chandy and Bilal Zia. 2014. “The impact of marketing (versus finance) skills on firm performance: Evidence from a Randomized Controlled Trial in South Africa” Mimeo. London Business School

Ariga, Kenn and Giorgio Brunello (2006) “Are education and training always complements? Evidence from Thailand”, Industrial and Labor Relations Review 59(4): 613-629.

Bloom, Nicholas, Aprajit Mahajan, David McKenzie, and John Roberts. 2010. “Why Do Firms in Developing Countries Have Low Productivity?” American Economic Review Papers & Proceedings, 100(2): 619- 23

Bloom, Nicholas, Benn Eifert, Aprajit Mahajan, David McKenzie, and John Roberts. 2013. “Does management matter? Evidence from India” The Quarterly Journal of Economics, 128(1) 1–51.

Bruhn, Miriam, Dean S Karlan, and Antoinette Schoar. 2010. "What Capital Is Missing in Developing Countries?," American Economic Review, American Economic Association, vol 100(2), pages 629-33.

Calderon, Gabriela, Jesse Cunha, and Giacomo De Giorgi. 2013. “Business literacy and Development: Evidence from a Randomized Control Trial in Rural Mexico,” NBER working paper.

Campos, Francisco, Michael Frese, Markus Goldstein, Leonardo Iacovone, Hillary Johnson, David McKenzie and Mona Mensmann (2017) “Teaching personal initiative beats traditional business training in boosting small business in West Africa”, Science, 357(6357): 1287-90.

McKenzie, David and Christopher Woodruff, 2014. "What Are We Learning from Business Training and Entrepreneurship Evaluations around the Developing World?," World Bank Research Observer, World Bank Group, vol. 29(1), pages 48-82.

McKenzie, David and Christopher Woodruff (2017) “Business practices in small firms in developing countries”, Management Science 63(9): 2967-81

Table 1: Comparing Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Years of schooling	Years of schooling - father	Years of schooling - mother	Total score of raven test (norm)	Total score digit span test (norm)	Self satisfaction =1 (above the median)	Optimism =1 (above the median)	Score1 trust (0-2)
Incomplete	-0.238	0.164	0.114	-0.0239*	-0.00851	0.0542*	0	0.0165
	(0.229)	(0.313)	(0.279)	(0.0136)	(0.0112)	(0.0303)	(.)	(0.0413)
Completed	0.756***	0.165	0.268	0.0170	0.00990	0.0165	0	0.0862**
	(0.198)	(0.271)	(0.241)	(0.0118)	(0.00967)	(0.0261)	(.)	(0.0356)
N	1966	1792	1887	1998	1994	2004	2004	2004
T-test	0.000002	0.998	0.548	0.00115	0.0763	0.178	.	0.0678
control	10.88	6.336	5.725	0.470	0.482	0.495	0	0.533

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Score self-efficacy (1-20)	Score locus of control (1-15)	Score impulsiveness (1-15)	Score self confidence (1-50)	Score risk attitude (1-10)	Extended definition of poverty	Household size	Hours allocated to kids
Incomplete	-0.0567	0.0487	-0.00501	0.882*	0.213*	0.0454**	-0.0507	-2.286
	(0.154)	(0.155)	(0.152)	(0.523)	(0.109)	(0.0227)	(0.119)	(1.664)
Completed	-0.106	-0.00779	-0.0406	1.134**	0.186**	-0.00816	-0.192*	-3.132**
	(0.133)	(0.133)	(0.131)	(0.452)	(0.0945)	(0.0196)	(0.103)	(1.435)
N	1995	1995	1996	1994	1981	2004	1963	1970
T-test	0.727	0.692	0.800	0.602	0.794	0.0108	0.197	0.582
control	6.213	6.083	6.308	35.34	8.376	0.174	4.117	17.47

	(17)	(18)	(19)
	Hours allocated house	Age of the business	Sole owner
Incomplete	0.569	2.430	-0.0729**
	(0.941)	(6.523)	(0.0300)
Completed	-0.684	5.388	-0.0686***
	(0.811)	(5.628)	(0.0258)
N	2000	1997	1988
T-test	0.149	0.623	0.878
control	19.25	68.52	0.589

Source: Author calculations. *** Significant at the 1 percent level..** Significant at the 5 percent level. * Significant at the 10 percent level.

Table 2: Comparing Performance

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Days worked per week	Paid workers	Unpaid workers	Monthly Salaries paid	Monthly Inputs expenditure	Monthly Inputs and salaries index	Firm registry	Access to credit
Incomplete	1.345	-0.206	-0.536	125.1	480.4	0.00609	0.0218	0.0161
	(1.070)	(0.231)	(0.551)	(234.8)	(1002.3)	(0.0138)	(0.0260)	(0.0267)
Completed	0.769	-0.172	-0.564	335.9*	42.01	0.0109	0.0572**	0.0736***
	(0.923)	(0.199)	(0.475)	(202.2)	(860.2)	(0.0119)	(0.0225)	(0.0230)
N	1998	1997	1994	1975	1813	1997	2000	2001
T-test	0.560	0.874	0.956	0.330	0.637	0.703	0.141	0.0199
control	6.219	0.485	0.185	1083.0	7503.6	0.103	0.281	0.277

	(9)	(10)	(11)	(12)	(13)	(14)
	Management index	Sales per day	Sales per week	Profits per day	Profits per week	Sales and profit index
Incomplete	0.239	626.3***	727.2*	202.3***	251.8*	0.0802***
	(0.462)	(195.9)	(394.1)	(72.62)	(144.8)	(0.0295)
Completed	1.308***	277.9*	580.3*	106.0*	181.5	0.0503**
	(0.399)	(168.8)	(338.9)	(62.34)	(124.9)	(0.0254)
N	2000	1933	1904	1864	1844	1970
T-test	0.0124	0.0538	0.687	0.150	0.599	0.273
control	15.40	1627.0	3989.0	623.9	1492.7	0.314

Source: Author calculations. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Online Appendix

Include Table A1 with all descriptives

Profits per week winsorized	1421.709	2274.228	1868
Extended definition of poverty: at least in one	0.1684729	0.3743779	2030