

# Entrepreneurship and Life-Skills Training: Using Centralized Assignment to Evaluate Subsidized Programs in Argentina

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## Abstract

We evaluate the short-term impact of an entrepreneurship training program and a life-skills training program offered by the municipal government of the city of Buenos Aires, Argentina. We implemented a centralized assignment mechanism to allocate seats in different schools accounting for people's preferences over schools. To fully exploit the random variation in treatment assignment generated by the centralized mechanism (and separate it from the one generated by non-random preferences), we use a propensity score stratification, as recently proposed by Abdulkadiroglu, Angrist, Narita and Pathak (2017). To compute the propensity score analytically we further rely on results by Che and Kojima (2010). Using survey-based information collected three months after the courses, we find a positive impact on course-related knowledge for both programs. Entrepreneurship training helps participants start a business from an initial idea, thus leading to more business ownership and self-employment. Life-skills training leads to higher job-search rates. There are no significant effects on soft-skills, such as locus of control, empathy or self-efficacy.

**JEL codes:** I28, J24, J68, L26

**Keywords:** entrepreneurship, job training, centralized assignment, random serial dictatorship, occupational choice, program evaluation.

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## Introduction.

Fast-changing and dynamic 21st-century economy imposes several challenges to workers and businesses, who need to frequently adapt to cope with the disruptive forces of globalization and automation. In response to this increasingly challenging environment, numerous governments and non-profit organizations around the world have launched entrepreneurship, job, and life-skills training programs, generally aimed at helping people enter and stay in the labor force, and promote overall value creation.

The proliferation of these initiatives led to an increasing number of studies that measure their impact using both experimental and non-experimental evidence. Card, Kluve and Weber (2015) conduct a meta-analysis of job-training programs (and other active labor market policies) evaluations. They find a positive effect of these programs in the probability of employment in the medium run, an effect that is moderated by gender and pre-treatment unemployment duration of recipients. McKenzie and Woodruff (2013) review the experimental evidence on business training programs in developing countries, and conclude that most programs lead to some, although small, improvement in business practices. They also find a modest increase in the survivorship of existing firms, and a larger and more consistent effect on short-term business ownership among prospective owners. Despite these and other efforts to organize existing evidence, there is not much agreement in the literature and in the policy arena regarding the effectiveness of these initiatives. Difficulty to reach a consensus is partly explained by the vast heterogeneity of programs offered (in terms of content, length, treated population and context) and by usual limitations in the evaluation phase, such as high attrition rates and small samples (McKenzie and Woodruff, 2014). In Latin America, the situation is more acute since, despite some recent contributions (Atanasio, Kugler, Meghir, 2011; Card et al, 2011; Karlan and Valdivia, 2011; Alzúa, Cruces and Lopez, 2016), many programs are still not being evaluated (Gonzalez-Velosa, Ripani and Rosas-Shady, 2012).

In this study, we evaluate the short-term impact of an entrepreneurship training course and a life-skills training course offered by the municipal government of the city of Buenos Aires, Argentina. Since 2014, the city of Buenos Aires has offered four free courses teaching life, entrepreneurial and business tools, designed to meet needs of people at different stages of their professional life. We focus on two of them, for which over-subscription allowed for the existence of a control group. The first one is a life-skills training course aimed to promote “self-knowledge and empowerment to build a personal project and an entrepreneurial mindset”. The course consists of 7 lessons where a tutor discusses and proposes activities to exercise self-knowledge, communication, conflict resolution, leadership, and creativity. The second is a more traditional entrepreneurship training course designed for people who want to validate business ideas and start their own business. The course consists also of 7 lessons aimed at providing tools to develop, and assess the sustainability and viability of

business ideas (Design Thinking, Canvas business models, Lean StartUp, among others).

Both courses are offered in different schools distributed in the city of Buenos Aires. In the first editions, seats in each of the schools were assigned in a “first come, first served” basis through a common online application opened a few weeks before the beginning of the course. Given that people who register promptly for the course are likely to be a selected subsample of the population, the assignment mechanism hindered an evaluation of the program. To the extent that drivers of quick registration (e.g. motivation, connectedness, time availability, etc.) were correlated to the outcomes of interest, any comparison with other subpopulation (even those showing interest in the course) would have been subject to selection bias. Furthermore, the “first come, first served” basis benefited those who, for any reason, got informed first about the opening of the application process, raising potential fairness considerations regarding the allocation of seats.

To overcome these difficulties, we followed the recent literature on matching and school choices (Abdulkadiroglu and Sonmez, 2003) and implemented a serial random dictatorship mechanism to allocate seats in different schools among enrollees (Abdulkadiroglu and Sonmez, 1998). In the application process, enrollees were asked to indicate their preference over schools, listing only schools they were willing to attend (that is, options that were preferred to not doing the course). We then ordered enrollees randomly and assigned the first enrollee to her most preferred school, the second enrollee to her most preferred school among those with available seats, and so on, until all seats were allocated or we got to the last enrollee. This simple mechanism is Pareto efficient, strategy-proof, can accommodate any preference ordering, and, also crucial to the evaluation strategy, it guarantees that enrollees with equal preferences have the same probability to enter the course (a property called “equal treatment of equals”).

Under this assignment mechanism, the probability of being treated (that is, getting into the training program) depends on preferences: participants who want to attend less-demanded schools are more likely to get a seat than those who only want to attend the most popular schools. If these preferences are correlated to outcomes of interest, a comparison of the treated and non-treated enrollees would again suffer from selection bias. The “equal treatment of equals” property helps to overcome this, as it insures that, conditional on preferences, treatment assignment is independent of potential outcomes. Therefore, stratification on preferences allows to retrieve the average treatment effect of the course. In our application, however, conditioning on preferences would considerably reduce degrees of freedom and eliminate many individuals from the sample. To avoid this and fully exploit the random variation in assignment generated by the centralized assignment (separating it from the one generated by non-random preferences), we use the propensity score analysis recently proposed by Abdulkadiroglu, Angrist, Narita and Pathak (2017). As in their paper, propensity score stratification results in important sample size gains relative to stratification

on preferences: sample increases from 196 to 237 individuals (20.9%) in the life-skills training course, and from 377 to 499 individuals (48.1%) in the entrepreneurship training course.

To compute the propensity score analytically without relying on simulations, we complement their results with the results by Che and Kojima (2010). This formulation allows to better understand the determinants of the propensity score value for individuals with different preference orderings. Furthermore, this could also allow to understand how, given a distribution of preferences, the vector of school capacities could be manipulated to boost statistical power, crucial for program evaluations (topic to be developed in subsequent versions of the paper).

We evaluate the September 2016 edition of the courses.<sup>1</sup> Using survey-based information collected three months after the courses, we measure the courses' short-term impact on 4 different sets of variables: knowledge, employment status, entrepreneurship, and socio-emotional skills. We find a positive impact on course-related knowledge for both programs, indicating that, on average, participants assimilate part of the theoretical content taught in class. We also observe effects on employment situation and entrepreneurial activity largely consistent with the objectives of the different courses. Entrepreneurship training helps transition from the idea to the start-up phase, leading to more business ownership and self-employment. Life-skills training leads to higher job-search rates. We do not find significant effects on socio-emotional skills, such as locus of control, empathy or self-efficacy.

This paper has two main contributions. First, it provides one of the first independent applications of the propensity score analysis proposed by Abdulkadiroglu, Angrist, Narita and Pathak (2017) to exploit random variation generated by centralized assignment mechanisms with equal treatment of equals. It shows significant sample size gains of such approach in a totally unrelated context to the one originally studied, supporting its relevance and generality. It also contributes to this literature by providing a formulation of the propensity score for random serial dictatorship as a function of enrollees' preferences and school capacities (that is, the primitives of the matching problem).

Second, it contributes to the growing literature on program evaluation in Latin America. In one of the closest studies to this paper, Alzúa, Cruces and Lopez (2016) examine the effect of a youth training program in Cordoba, Argentina, finding some positive short-term effects on employment and income, which dissipate in the medium and long term. The intervention included more than 100 hours of technical classroom training and 64 hours of life-skills training distributed over 3 months, plus an internship phase of up to 4 months.

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<sup>1</sup>Courses are taught twice every year: in April and September. October 2016 was the first edition of the course using the random serial dictatorship mechanism to assign seats. After this edition, the mechanism was used for the April 2017 and September 2017 editions. Evaluation of these editions will be added to the study.

Karlan and Valdivia (2011) study the effects of business training lessons directed to microentrepreneurs in Lima, Perú. They find no robust evidence of changes in main business outcomes, such as revenue, profits or employment. Our paper provides empirical evidence on the short-term effect of a large-scale subsidized training program, which is currently in place and has attracted more than 20 thousand enrollees in the last three years. The study will be complemented with the evaluation of subsequent editions of the program, and the use of administrative data (still not available).

The remainder of this paper is organized as follows. In section 2, we describe the training programs. In Section 3, we describe the centralized assignment mechanism and the empirical strategy. In section 4, we present the empirical results on the different sets of outcomes. In section 5, we provide some concluding remarks and discuss the next steps of the project.

## Courses Description.

We evaluate two courses offered by Academia BA Emprende, a program of the municipal government of the city of Buenos Aires created in 2014 to provide free training on life, entrepreneurial and business tools.

The main goal of the program is to teach tools to help people adapt to the needs of today's labor markets, where "jobs are not found, but created".<sup>2</sup> Academia BA Emprende offers 4 different courses, all consisting of 7 weekly meetings of 3 hours each (21 hours in total). Each of these courses is designed to meet the needs of people at a certain stage of their professional life, from those who are seeking to better understand their strengths and improve basic skills to those who want to expand already existing businesses.<sup>3</sup> In all cases, classes are led by tutors who have experience in entrepreneurship, and are responsible for transmitting the main theoretical content of the course, proposing case-studies and exercises, and encouraging exchange of ideas among participants. In its four years of existence, Academia BA Emprende has attracted more than 20 thousand enrollees and provided training to 10 thousand people. Different to other programs in Latin America studied in recent years (see, for example, Alzúa, Cruces and Lopez (2016) and Karlan and Valdivia (2011)), Academia BA Emprende does not target any specific subpopulation, and therefore courses' participants are generally diverse in terms of age, gender, education, and

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<sup>2</sup>A description of Academia BA Emprende program can be found in the website of the municipal government: <http://www.buenosaires.gob.ar/innovacion/emprendedores/capacitacion-e-incubadoras/academia-ba-emprende> (checked: September 8th, 2017).

<sup>3</sup>Information on the courses is available on the official website of the Academia BA Emprende: <http://academia.buenosaires.gob.ar/informacion> (checked: September 8th, 2017).

other socio-demographic characteristics.

The first course is a life-skills training program, called “Professional Growth”, designed for people seeking to improve their working and/or personal life. The objective of the course is to promote “self-knowledge and empowerment to build a personal project and an entrepreneurial mindset”. Meetings are focused on different skills: self-knowledge, communication, conflict resolution, leadership, and creative process. In each meeting, tutors provide basic concepts and information on the importance of these skills for professional and personal development, and conduct exercises along with participants to enhance these skills and help them discover their own strengths and limitations. The course is taught in eight different venues and nine shifts (one venue offers two different shifts), with an average of almost 60 seats each (530 seats in total). Venues are located in different parts of the city of Buenos Aires.

The second course, called “Ideation”, is a more traditional entrepreneurship training program designed for people who want to start their own business. The goal of the course is to strengthen creativity and provide tools to assess the sustainability and viability of business ideas. Meetings focus on different techniques: Design Thinking, Canvas business models, and Lean StartUp, among others. Every meeting, the tutor exposes the basics of a given technique, and proposes exercises for participants to implement them in groups and individually. As homework, participants are asked to apply the different techniques to their own business ideas, and bring conclusions and questions to the following meeting. The course is taught in fourteen different venues and eighteen shifts (some venues offer more than one shift), with an average of almost 60 seats each (1059 seats in total). Like in the life-skills course, there are venues in different parts of the city of Buenos Aires.

In the September 2016 edition, the number of enrollees largely exceeded the number of seats available for these two courses, allowing for existence of a control group and feasibility of impact evaluation. Academia BA Emprende offers two other courses, “StartUp Companies” and “Expansion”. These two courses are smaller in size (865 seats available in total), as they are targeted to people who own a business and want to either consolidate it or expand it. They provide basic business training, and aim at improving business practices and, ultimately, enhancing sales, profits and stability of the firms.

## **Centralized Assignment and Evaluation Strategy.**

In the first five editions of Academia BA Emprende program, launched between April 2014 and April 2016, seats in each of the schools were assigned in a “first come, first served” basis through a common online application process opened a few weeks before the begin-

ning of the courses. In those editions, 18 thousand people registered to the program, and 14 thousand got a seat.<sup>4</sup> Given that people who registered promptly for the course were likely to be a selected subsample of the population, the assignment mechanism hindered an evaluation of the program. To the extent that drivers of quick registration (e.g. motivation, time availability, etc.) were correlated to the outcomes of interest, any comparison with other subpopulation (even those showing interest in the course) would have been subject to selection bias.<sup>5</sup> Furthermore, the “first come, first served” basis benefited those who, for any reason, got informed first about the opening of the application process, raising potential fairness considerations regarding the allocation of seats.

To overcome these difficulties, for the September 2016 edition of the program, we implemented a serial random dictatorship mechanism to allocate seats in different schools to enrollees, following the literature on matching and school choices (Abdulkadiroglu and Sonmez, 1998, 2003).<sup>6</sup> In the application form, enrollees were now asked to indicate their preferences over schools, listing only schools they were willing to attend (that is, options that were preferred to not doing the course). Then, once the application period ended, we ordered enrollees randomly and assigned the first enrollee to her most preferred school, the second enrollee to her most preferred school among those with available seats, and so on, until all seats were allocated (or we got to the last enrollee).

This serial random dictatorship mechanism has nice efficiency and fairness properties (Abdulkadiroglu and Sonmez, 1998). It is Pareto efficient, as resulting seat allocations cannot be modified without harming someone or leaving everyone indifferent; it is strategy-proof, since an enrollee cannot improve her chances of entering the treatment (or getting a seat in a more preferred school) by misreporting her preferences; it can accommodate any set of preference orderings; and, crucial to the evaluation strategy, it guarantees that enrollees with equal preferences have the same probability to enter the course (a property called “equal treatment of equals”).

Under this assignment mechanism, enrollees’ probability of being treated (that is, getting into the training program) depends on their preferences: participants who want to attend less-demanded schools are more likely to get a seat than those who only want to attend the most popular schools. If these preferences are correlated to outcomes of interest, an unconditional comparison of the treated and non-treated enrollees would again suffer

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<sup>4</sup>Most of the people who enrolled in those editions got a seat because organizers were closing the application soon after all seats were allocated.

<sup>5</sup>An evaluation could have been done exploiting variation in access to the course coming from people submitting the application just before and just after all seats were assigned (see, for example, Pinotti, 2017). This strategy would have resulted in a small sample and a limited external validity.

<sup>6</sup>This centralized assignment mechanism is still being used by Academia BA Empreende program to allocate seats for the different courses.

from selection bias. The “equal treatment of equals” property helps to overcome this, as it insures that, conditional on preferences, treatment assignment is independent of potential outcomes (Abdulkadiroglu, Angrist, Narita and Pathak, 2017). Therefore, stratification on preferences allows to retrieve the average treatment effect of the course.

In our application, however, conditioning on preferences would considerably reduce degrees of freedom and eliminate many individuals from the sample. In the September 2016 edition of Academia BA Empreende program, 806 people enrolled for the life-skills course and reported their preferences over the 9 different school/shifts available. There were 211 different preference orderings, and 140 individuals reported a unique preference ordering. In the entrepreneurship course, 1649 people enrolled and indicated their preferences over 18 different school/shifts. Among these, there were 550 different preference orderings, 437 of which were reported by only one enrollee.<sup>7</sup>

Given a vector of school capacities, the serial random dictatorship assignment mechanism maps each preference ordering to a probability of being treated (or propensity score). As shown by Rosenbaum and Rubin (1983), propensity score is the coarsest function of preferences (type) that warrants conditional independence of potential outcomes, allowing to eliminate the potential omitted variable bias arising from the dependence of treatment probability on preferences. Therefore, to fully exploit the random variation in assignment generated by the centralized assignment (separating it from the one generated by non-random preferences), we use a propensity score stratification, as proposed by Abdulkadiroglu, Angrist, Narita and Pathak (2017).

#### *Computing Propensity Scores for Random Serial Dictatorship*

Abdulkadiroglu, Angrist, Narita and Pathak (2017) use a continuum economy approximation to derive an analytical formula of propensity scores in general deferred acceptance (DA) assignment mechanisms. For random serial dictatorship, their formulation shows that the propensity score of an individual with a given preference type is determined by the probability of accessing to the school that is easiest to get access among her listed ones. For example, in a setting with two schools, A and B, where it is easier to get a seat in school A, individuals with preference orderings  $\{A \succ B, B \succ A, A\}$  have all the same propensity score. The relative ease to get into different schools can be characterized by the relative school cutoffs, that is, the rank of the enrollee who gets the last seat in the school (or the highest rank among all enrollees if some seat in the school is not allocated). Schools with lower cutoffs are harder to get in. While in a discrete economy a school’s cutoff might depend on the lottery realization, in a continuum economy each school’s cutoff is a

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<sup>7</sup>There were 26 other enrollees in the life-skills course and 59 in the entrepreneurship course for whom baseline information is not available. They are excluded from the analysis.



deterministic function of the vectors of school capacities and preference orderings. Consider an economy, with a unit mass continuum of individuals and lottery numbers drawn from a standard uniform distribution ( $U \sim [0, 1]$ ), the propensity score of a person with preference type  $\theta$  ( $p(\theta)$ ) is the probability of obtaining a rank lower than the highest cutoff among all schools in her list:

$$p(\theta) = P(U \leq c_\theta) = c_\theta, \quad \text{with } c_\theta \equiv \max_{s \in S_\theta} \{c_s\} \quad (1)$$

where  $S_\theta$  is the set of schools listed by an enrollee with preference type  $\theta$ , and  $c_s$  is the cutoff for school  $s$ . The fact that propensity scores do not depend on the number and on the relative order of schools listed (but just on the set of schools in the list) reveals the potential benefits of propensity score stratification relative to full preference stratification: while in a setting with  $N$  different schools, the number of possible preference orderings is in the order of  $N$  factorial, the number of propensity score values is at most  $N$ . Propensity score stratification allows for less and larger strata, leading to potentially important sample size gains.

The cutoff for each school can be easily computed by simulation: repeating the random assignment several times and obtaining the average rank of the enrollee obtaining the last seat in the school. Propensity scores can then be approximated by:

$$\hat{p}(\theta) = \max_{s \in S_\theta} \{\hat{c}_s\} \quad (2)$$

$$\hat{c}_s \equiv \frac{1}{T} \sum_{t=1}^T \frac{r_{st}}{N} \quad (3)$$

$$r_{st} \equiv \begin{cases} r_{st}^{last}, & \text{if all seats in } s \text{ are allocated} \\ N, & \text{if some seat in } s \text{ is not allocated} \end{cases} \quad (4)$$

where  $T$  is the number of iterations,  $N$  is the total number of enrollees, and  $r_{st}^{last}$  is the rank of the enrollee obtaining the last seat in school  $s$  in iteration  $t$ .

To compute the propensity score without resorting to simulation, we build on results by Che and Kojima (2010), who characterize cutoff values (expiration dates) in a continuum economy with equally-sized schools (objects). Consider an economy with a unit mass continuum of individuals. There is a mass of seats to be allocated among these people, distributed in a set of schools ( $S_1$ ). Each school has a mass  $n_s$  of seats available. Individuals have strict preferences over elements in  $\bar{S}_1 = S_1 \cup \{H\}$ , where  $H$  stands for the alternative of staying at home and not taking the course. For each school  $s$  and set of schools  $L \subseteq S_1$ ,  $\pi_s(L) \in [0, 1]$  is the fraction of individuals who prefer school  $s$  to all other schools in  $L$  and to staying at home. Individuals are assigned a random rank ( $r$ ) from a standard uniform distribution ( $U \sim [0, 1]$ ). The fraction of individuals with rank lower than  $r$  is therefore  $P(U \leq r) = r$ . The intuition for obtaining the lowest cutoff (that is, the hardest school to get in) is simple: while all schools have seats available, all enrollees with low ranks get a

seat in their most preferred school. This simple allocation rule finishes when there are no more seats available in some school. To compute the first cutoff ( $c_1$ ), we obtain for each school  $s \in S_1$  a value  $c_1^s$  such that the fraction of people who prefer  $s$  ( $\pi_s(S_1)$ ) multiplied by the mass of enrollees with rank lower than  $c_1^s$  is equal to the mass of seats in  $s$  ( $n_s$ ). The “hardest schools to get in” ( $k_1$ ) are the ones with the lowest value  $c_1^s$ . Formally:

$$c_1^s = \{c \mid \pi_s(S_1) \cdot c = n_s\} \quad (5)$$

$$c_1 \equiv \min_{s \in S_1} \{c_1^s\} \quad (6)$$

$$k_1 \equiv \{s \in S_1 \mid c_1^s = c_1\} \quad (7)$$

If  $c_1 > 1$ , all enrollees are assigned to their first choice. Otherwise, once the first school(s) is full, enrollees are allocated among the set of schools with open seats. This procedure continues until all individuals are allocated to some school ( $c_n > 1$ ) or there are no more seats available. To compute the following cutoffs we define the set of schools with open seats after the  $n$ -th cutoff:  $S_{n+1} \equiv S_n \setminus k_n$ . We also define the values  $A_1^n \equiv 0$  and  $c_0 \equiv 0$ . The cutoffs and the sets of schools with open seats can then be obtained iteratively:

$$c_n = \min_{s \in S_n} \{c_n^s\} \quad \text{for } n \geq 2 \quad (8)$$

$$c_n^s = \{c \mid A_n^s + \pi_s(S_n) \cdot (c_n^s - c_{n-1}) = n_s\} \quad \text{for } n \geq 2 \quad (9)$$

$$A_n^s = A_{n-1}^s + \pi_s(S_{n-1}) \cdot (c_{n-1} - c_{n-2}) \quad \text{for } n \geq 2 \quad (10)$$

$$k_n = \{s \in S_n \mid c_n^s = c_n\} \quad \text{for } n \geq 2 \quad (11)$$

The above expressions show, for example, that to compute the second cutoff we need to consider that those who listed the hardest school as their first choice and didn't get in are now allocated to their second choice (hence, we need to compute  $\pi_s(S_2)$ ), and that some school seats are allocated before the first cutoff ( $\pi_s(S_1) \cdot c_1$ ).

In our discrete economy application, we approximate each of the values with the observed frequencies. Let  $P_s(S_n)$  be the number of enrollees who prefer school  $s$  among schools in set  $S_n$ , and  $N_s$  the number of seats in school  $s$ . Cutoffs can be iteratively approximated:

$$\hat{c}_n = \min_{s \in S_n} \left\{ \frac{num_n}{denom_n} \right\} \quad (12)$$

$$num_n \equiv \begin{cases} N_s & \text{for } n = 1 \\ num_{n-1} + P_s(S_n) \cdot \hat{c}_{n-1} & \text{for } n \geq 2 \end{cases} \quad (13)$$

$$denom_n \equiv \begin{cases} P_s(S_1) & \text{for } n = 1 \\ denom_{n-1} + P_s(S_n) & \text{for } n \geq 2 \end{cases} \quad (14)$$

For example, to compute the first cutoff, we calculate for each school the ratio between the number of available seats and the number of people who chose that school as a first

option. The school with the lowest ratio is the hardest school to get in. Its cutoff value is given by the value of this ratio. Once all cutoffs are computed, propensity scores can be retrieved from equation (2). Computing the propensity score analytically and relating them to fundamentals of the matching problem helps to better understand the determinants of propensity scores for individuals with different preference orderings. This allows, for example, to compute how, given a distribution of preferences, the vector of school capacities can be manipulated to boost statistical power, crucial for program evaluations (topic to be developed in subsequent versions of the paper).

*Academia BA Empreende: Enrollees and Propensity Scores.*

The above formulas allow to approximate cutoff values for schools, and propensity scores for enrollees. As reported above, 806 people enrolled for the September 2016 edition of Academia BA Empreende life-skills course, representing 211 different preference orderings. Given the distribution of preference orderings and school capacities, cutoff values for schools ranged from 0.38 (hardest school to get in) to 1 (an under-subscribed school). These cutoff values mapped into 9 different propensity score values, also ranging from 0.38 to 1. Relative to full preference stratification, using these propensity score values leads to an increase in the sample in consideration from 576 to 716. In the empirical analysis, these numbers fall to 196 and 237, respectively, due to survey attrition.

In the entrepreneurship course, there were 1649 enrollees and a total of 550 preference orderings over 18 different school/shifts. Cutoffs and propensity score values ranged from 0.125 to 1. Propensity score stratification allows to increase the sample in consideration from 1041 to 1390 individuals (or from 377 to 499 people when accounting for survey non-response).

For each of the two courses, we compared the propensity score values obtained using cutoffs derived from expression (12) with the ones obtained from (i) simulating the random assignment 500 times and computing the fraction of times each enrollee gets a seat (rounding to the nearest hundredth and to the nearest thousandth), and (ii) obtaining each school's cutoff by simulation and then computing propensity scores (expression (2)). Different ways of computing propensity scores lead to almost the same results, as it can be seen by the correlations reported in table (1). However, the analytical formulation proposed by Abdulkadiroglu, Angrist, Narita and Pathak (2017) smooths estimated scores and leads to less and larger strata. The further contribution of computing propensity scores using expression (12) is to relate scores to the fundamentals of the matching problem. This helps to better understand where their values come from and how they would be affected by changes in school capacities or enrollees' preferences.

Table 1: Propensity Score Stratification and Sample Sizes

<b>Life-Skills Training</b>						
<b>Method</b>	<b>Strata</b>	<b>Sample</b>	<b>Correlation with:</b>			
			Simul. (000)	Simul. (00)	AANP	AANP/CK
Full preferences	211	576				
Simulated (000)	105	635	1.0000			
Simulated (00)	33	708	0.9999	1.0000		
AANP	9	716	0.9987	0.9986	1.0000	
AANP + CK	9	716	0.9970	0.9971	0.9975	1.0000

  

<b>Entrepreneurship Training</b>						
<b>Method</b>	<b>Strata</b>	<b>Sample</b>	<b>Correlation with:</b>			
			Simul. (000)	Simul. (00)	AANP	AANP/CK
Full preferences	550	1041				
Simulated (000)	203	1236	1.0000			
Simulated (00)	55	1378	0.9999	1.0000		
AANP	13	1390	0.9993	0.9993	1.0000	
AANP + CK	13	1390	0.9959	0.9958	0.9963	1.0000

<sup>+</sup> Full preference: full preferences type stratification. Simulated (000): propensity score stratification, using scores obtained from simulating the assignment 500 times (rounded to the nearest 1000-th). Simulated (00): propensity score stratification, using scores obtained from simulating the assignment 500 times (rounded to the nearest 100-th). AANP: propensity score stratification, using scores based on Abdulkadiroglu et al (2017) and school cutoffs obtained from simulating the assignment 500 times. AANP + CK: propensity score stratification, using scores based on Abdulkadiroglu et al (2017) and school cutoffs obtained analytically using results based on Che and Kojima (2010).

## Balance Tests

To assess the success of propensity score stratification in eliminating selection bias, we check for conditional balance in a set of individual characteristics. Enrollees' personal and socio-demographic information was obtained from their responses to the online registration survey, which was completed a few weeks before the beginning of the course. Information includes: gender, age, the way they found out about the course, educational attainment, employment status, income level, and previous assistance to similar training courses, among other things.

Tables 2 (life-skills course) and 3 (entrepreneurship course) report the mean of each variable for the treatment and control groups, and the p-value of their difference after partialling out fixed effects for propensity scores strata. Columns (1) to (3) report values for all enrollees with propensity scores strictly between 0 and 1. Columns (4) to (6) consider only those who responded to the follow-up survey, carried out 3 months after the end of the course. The follow-up survey was administered by email, and answered by 237 life-skills course enrollees (33.1%) and by 499 entrepreneurship course enrollees (35.9%).<sup>8</sup> Given that the assessment of the impact of the course is based on responses to this survey, we verify that respondents in the control and treatment groups are conditionally comparable, and that there are no patterns of differential non-response across groups.<sup>9</sup>

In the life-skills course, table 2 shows that, both for the whole sample in consideration as for those who answered the follow-up survey, individual characteristics are conditionally balanced across treatment and control groups, with the only exception of recent income change. In the entrepreneurship course, results reported in table 3 show a few significant conditional differences between control and treatment groups. Among those who answered the follow-up survey, people in the control group are (conditionally) more likely to have a graduate degree and to be unwilling to report their income. These few differences are expected given that differences in means for many characteristics are tested. Still, in the regression analysis, we report estimates when controlling for these variables. In both courses, the p-values of the joint significance tests indicate that, when controlling for the propensity score strata of enrollees, personal characteristics are not informative on the result of the assignment mechanism.

Tables A2 and A3 (included in the appendix) report p-values for the unconditional differences. In the life-skills course (table A2), the unconditional comparison shows a very

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<sup>8</sup>These numbers consider only those who responded the survey completely, and do not exhibit patterns of automatic response (for example, answering always the first option of the question throughout the entire survey) or inconsistencies (that is, giving contradictory answers to questions in the survey).

<sup>9</sup>We expect to obtain administrative data that would cover the whole sample in consideration. The data request is currently being processed by the Evaluation Unit of the municipal government of the City of Buenos Aires.

Table 2: Life-Skills Course: Covariate Balance

Variable	Baseline			Follow-Up		
	(1) Treatment Group	(2) Control Group	(3) Diff. [p-value]	(4) Treatment Group	(5) Control Group	(6) Diff. [p-value]
Age	34.65	34.79	0.87	36.57	36.72	0.85
Age [Squared]	1 304	1 315	0.91	1 446	1 469	0.91
Gender [Female]	0.69	0.66	0.56	0.77	0.76	0.74
Entrepreneur [Yes]	0.31	0.33	0.15	0.29	0.33	0.46
Informed [Facebook]	0.51	0.55	0.15	0.49	0.52	0.55
Informed [Friend]	0.24	0.24	0.89	0.26	0.23	0.73
Lab. [Self-employed]	0.34	0.31	0.90	0.29	0.30	0.40
Lab. [Homemaker]	0.04	0.04	0.75	0.05	0.07	0.69
Lab. [Unemployed]	0.27	0.26	0.56	0.25	0.26	0.45
Educ. [Post-Second.]	0.23	0.24	0.40	0.24	0.22	0.91
Educ. [Undergrad.]	0.32	0.34	0.49	0.35	0.38	0.68
Educ. [Graduate]	0.08	0.09	0.85	0.08	0.06	0.57
Var. Inc. [ $< 0$ ]	0.24	0.26	0.21	0.21	0.34	0.01
Var. Inc. [ $<$ Inflation]	0.38	0.37	0.30	0.43	0.33	0.08
Var. Inc. [ $>$ Inflation]	0.26	0.24	0.64	0.26	0.23	0.50
Income	10 413	10 983	0.49	11 106	10 807	0.44
Income [No reply]	0.15	0.19	0.11	0.16	0.17	0.77
Training [1 course]	0.21	0.20	0.63	0.21	0.23	0.88
Training [2+ courses]	0.12	0.13	0.90	0.10	0.16	0.39
Objectives [Yes]	2.69	2.72	0.53	2.63	2.65	0.90
Organize [Yes]	0.74	0.72	0.62	0.72	0.72	0.67
Solutions [Yes]	0.70	0.69	0.75	0.70	0.68	0.72
F-Test (p-value)			0.7			0.89
Sample size	400	316		128	109	
P-Score FE			Si			Si

<sup>a</sup> Columns (1) to (3) refer to all enrollees with propensity score strictly between 0 and 1. Columns (4) to (6) refer only those who answered the follow-up survey (sent three months after the end of the course).

<sup>b</sup> P-values (columns (3) and (6)) are obtained from regressions relating treatment status and the corresponding variable, including fixed effects for propensity score strata. The hypothesis tested is whether that personal trait is associated with a greater (or smaller) likelihood of being assigned to the treatment group, when comparing people with the same propensity score.

Table 3: Entrepreneurship Course: Covariate Balance

Variable	Baseline			Follow-Up		
	(1) Treatment Group	(2) Control Group	(3) Diff. [p-value]	(4) Treatment Group	(5) Control Group	(6) Diff. [p-value]
Age	35.49	35.04	0.7	37.22	36.52	0.5
Age [Squared]	1 371	1 323	0.56	1 499	1 433	0.50
Gender [Female]	0.64	0.62	0.71	0.69	0.64	0.7
Entrepreneur [Yes]	0.27	0.22	0.34	0.3	0.24	0.5
Informed [Facebook]	0.48	0.45	0.83	0.51	0.45	0.34
Informed [Friend]	0.28	0.3	0.76	0.25	0.27	0.97
Lab. [Self-employed]	0.34	0.28	0.99	0.32	0.29	0.2
Lab. [Homemaker]	0.05	0.04	0.83	0.08	0.04	0.39
Lab. [Unemployed]	0.26	0.21	0.5	0.29	0.18	0.33
Educ. [Post-Second.]	0.21	0.23	0.28	0.22	0.25	0.46
Educ. [Undergrad.]	0.4	0.4	0.6	0.35	0.39	0.78
Educ. [Graduate]	0.09	0.09	0.64	0.05	0.1	0.03
Var. Inc. [< 0]	0.25	0.21	0.79	0.29	0.23	0.87
Var. Inc. [< Inflation]	0.41	0.45	0.92	0.39	0.44	0.71
Var. Inc. [> Inflation]	0.22	0.25	0.69	0.19	0.25	0.31
Income	11 278	12 288	0.98	10 927	12 236	0.64
Income [No reply]	0.18	0.16	0.25	0.17	0.11	0.08
Training [Yes]	0.27	0.26	0.77	0.27	0.26	0.89
Entrepreneur [Yes]	0.46	0.43	0.63	0.47	0.43	0.4
Start [Yes]	0.98	0.98	0.43	0.97	0.98	0.34
Capital [Yes]	0.5	0.47	0.06	0.49	0.43	0.29
Motiv. [Solutions]	0.26	0.24	0.65	0.29	0.25	0.57
Motiv. [Income]	0.12	0.15	0.12	0.12	0.15	0.34
F-Test (p-value)			0.85			0.3
Sample size	540	850		207	292	
P-Score FE			Si			Si

<sup>a</sup> Columns (1) to (3) refer to all enrollees with propensity score strictly between 0 and 1. Columns (4) to (6) refer only those who answered the follow-up survey (sent three months after the end of the course).

<sup>b</sup> P-values (columns (3) and (6)) are obtained from regressions relating treatment status and the corresponding variable, including fixed effects for propensity score strata. The hypothesis tested is whether that personal trait is associated with a greater (or smaller) likelihood of being assigned to the treatment group, when comparing people with the same propensity score.

similar picture to that of the conditional comparison, as preference types (and propensity score strata) are not strongly related to specific individual characteristics. In the entrepreneurship course (Table A3), the unconditional comparison shows some important differences between treatment and control groups (in occupation, income and previous entrepreneurial experience) that disappear once we compare within propensity score strata, validating the empirical strategy.

To check the existence of differential attrition between treatment and control individuals in a formal way, we regress an indicator variable of survey response on (a) enrollees' personal characteristics, (b) a treatment dummy, and (c) the interaction between personal characteristics and treatment status. The F-statistic of the interaction terms (c) indicates that there is no evidence of differential attrition in any of the two courses (see tables A5 and A6 reported in the Appendix).

## Empirical Strategy.

We estimate the impact of *attending* each of the two courses using an instrumental variables (IV) approach (Angrist, Imbens and Rubin, 1996). We use the *assignment* to the treatment to instrument attendance, exploiting that (i) conditional on propensity score strata, assignment is random (that is, all enrollees have the same conditional probability to get a seat in the course and therefore assignment is independent of potential attendance); (ii) assignment is highly correlated to attendance as enrollees who do not get a seat are not allowed to participate in the courses; and (iii) assignment is likely to affect outcomes of interest only through attendance to the course (exclusion restriction). This set of conditions allows us to credibly identify a causal effect of the courses for each propensity score stratum.<sup>10</sup> We use a regression model, and estimate an average treatment effect using information from all the different strata. Formally, for each of the courses and each of the outcomes of interest, we estimate the following two-stage linear model:

$$C_{ip} = \alpha_p + \beta \mathbf{X}_{ip} + \gamma T_{ip} + \epsilon_{ip} \quad (15)$$

$$y_{ip} = \omega_p + \Theta \mathbf{X}_{ip} + \delta C_{ip} + u_{ip} \quad (16)$$

where  $y_{ip}$  is the post-course value of outcome  $y$  for enrollee  $i$  (with propensity score  $p$ );  $T_{ip}$  is a dummy variable indicating if enrollee  $i$  got a seat in the course;  $C_{ip}$  is a dummy variable indicating if enrollee  $i$  attended at least one class of the course;  $\alpha_p$  and  $\omega_p$  are propensity score fixed effects associated to attendance and outcome  $y$ , respectively. Finally,  $\mathbf{X}_i$  includes a number of individual baseline characteristics that help augment precision, and

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<sup>10</sup>Actually, we need to further assume (i) SUTVA (an enrollee's course attendance and outcomes of interest are not affected by other enrollees' assignment), and (ii) monotonicity (no enrollee does the opposite of her assignment) (Angrist, Imbens and Rubin, 1996).



account for chance imbalances between the characteristics of the members of the treatment and control groups (we report estimates with and without the inclusion of these covariates).

The coefficient of interest is  $\delta$ , which gives the average impact of the course on enrollees to whom the assignment to the treatment group induces to take the course, also known as *compliers* (Angrist, Imbens and Rubin, 1996). In our application, this *local average treatment effect* (LATE) is equal to the *average treatment on the treated* (TOT), since only those assigned to the treatment group can take the course.<sup>11</sup>

### **Attendance to the Courses.**

Attendance to the course has been steadily low in the first years of Academia BA Em-prende program: in spite of being offered for free, only 50% of those enrollees who get a seat actually show up to the course. This number is lower than the 65% average participation rate in similar courses in developing countries reported by McKenzie and Woodruff (2013). The introduction of the centralized assignment mechanism didn't change this pattern: in the September 2016 edition of the program, attendance rates were 47.9% in the life-skills course, and 56% in the entrepreneurship course. Still, in spite of the relatively low attendance rate, course assignment remains a strong instrument for attendance, as participation in the course is only permitted to those who obtain a seat.<sup>12</sup> To formally estimate the average *intention-to-treat* effect of course assignment on course attendance, we estimate the first-stage equation (15). Results are reported in table A4, included in the appendix.

## **Evaluation Results.**

We measure the courses' short-term impact (three months) on 4 different sets of outcomes of interest: (a) course-related knowledge; (b) employment status; (c) entrepreneurial activity; and (d) socio-emotional skills. Results show that participants assimilate part of the content taught in the course. There are also effects on the employment situation and entrepreneurial activity largely consistent with the objectives of the different courses. On the contrary, we do not observe any significant effect on socio-emotional skills.

### **Course-Related Knowledge.**

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<sup>11</sup>Under the monotonicity assumption, in the absence of *always-takers* (enrollees who take the course regardless of the assignment), only *compliers* attend the course.

<sup>12</sup>The first stage F-statistics is greater than 200 in the life-skills course, and greater than 400 in the entrepreneurship course. Exact values are reported in table A4.

Table 4: Life-Skills Course: Impact on Knowledge

	Life-Skills		
	(1) No Covars.	(2) Covars.	(3) CC Mean
Self-Know.	0.15** (0.069)	0.10 (0.070)	0.85
Communic.	0.19** (0.092)	0.19** (0.092)	0.61
Conflict	0.063 (0.10)	0.089 (0.10)	0.45
Leadership	0.099** (0.050)	0.099** (0.048)	0.64
Creativity	0.100** (0.046)	0.11** (0.049)	0.57
All	0.11*** (0.034)	0.11*** (0.036)	0.61
N	237	237	
F - 1st Stage	218.4	207.0	
Indiv. Controls	No	Yes	
P-Score FE	Yes	Yes	

<sup>a</sup> Coefficients indicate the effect of *attending* the course among *compliers* (that is, people who is both willing and able to attend the course when offered a slot). The *treatment effect on the treated* (TOT) is estimated via 2SLS, using the outcome of the random assignment as excluded instrument. Coefficients reported in column (1) are estimated without including other covariates than propensity score dummies. Coefficients reported in column (2) are estimated including additional individual covariates. Column (3) reports the *control complier mean* (CCM).

<sup>b</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>c</sup> Dependent variables are the average of correct answers to questions designed to assess incorporation of content relating to various sections of the course. For Segment 1, topics are: Self-knowledge (1 question), Communication (1), Conflict Resolution (1), Leadership (3), and Creativity (4), and All Sections (10). For each question, it is required to indicate the degree of agreement/disagreement (1 to 7) with a statement. Responses are coded equal to 1 if the statement is true (false) and the answer is strictly greater (less) than 4.

<sup>d</sup> Individual controls include (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on the preferences on venues expressed in the baseline survey.

Table 5: Entrepreneurship Course: Impact on Knowledge

	Entrepreneurship		
	(1) No Covars.	(2) Covars.	(3) CC Mean
Design	0.13*** (0.042)	0.13*** (0.041)	0.22
Canvas	0.35*** (0.049)	0.35*** (0.047)	0.087
Value	0.17*** (0.049)	0.19*** (0.048)	0.57
Lean Start.	0.19*** (0.070)	0.21*** (0.069)	0.47
All	0.21*** (0.034)	0.22*** (0.033)	0.32
N	499	499	
F - 1st Stage	408.1	453.5	
Indiv. Controls	No	Yes	
P-Score FE	Yes	Yes	

<sup>a</sup> Coefficients indicate the effect of *attending* the course among *compliers* (that is, people who is both willing and able to attend the course when offered a slot). The *treatment effect on the treated* (TOT) is estimated via 2SLS, using the outcome of the random assignment as excluded instrument. Coefficients reported in column (1) are estimated without including other covariates than propensity score dummies. Coefficients reported in column (2) are estimated including additional individual covariates. Column (3) reports the *control complier mean* (CCM).

<sup>b</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>c</sup> Dependent variables are the average of correct answers to questions designed to assess incorporation of content relating to various sections of the course. For Segment 2, topics are: Design Thinking (2 questions), Canvas (2), Value proposition (2), Lean Start-up (1), and All sections (7).

<sup>d</sup> Individual controls include (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on the preferences on venues expressed in the baseline survey.

To understand if the courses help attendees to acquire specific knowledge that could be then used in their personal and professional lives, we built two different short questionnaires (one for each course), which included questions on the most important topics discussed in class.

In the life-skills course, the questionnaire consisted of 10 questions on the five main topics covered in the course: self-knowledge, communication, conflict resolution, leadership, and creativity. For each topic, respondents were given one or more sentences stating concepts or ideas discussed in class, and were asked to indicate their level of agreement or disagreement on a scale of 1 (completely disagree) to 7 (completely agree). Answers are considered *correct* if respondents partially agree (values strictly greater than 4) with concepts that are true according to the course's contents, or if they disagree (values strictly smaller than 4) with false concepts.<sup>13</sup> Results, reported in table 4, show that attendees incorporate part of the contents taught in the course: coefficients are positive in all sections, and statistically significant in the topics of communication, leadership, and creative process. Attending the course raises the average number of correct answers in 11 percentage points, from 61 percent to 72 percent, an effect that is statistically significant at the 1-percent level (result reported in row *All* in table 4). To understand the magnitude of this impact it is useful to compare the percentages of correct answers against the percentage that would be obtained if choosing randomly -and in a uniform way- between the different answers. The percentage of random correct answers would be 42 percent (3 out of 7 numbers). Respondents who attended the course show a percentage of responses 75 percent higher. In the control group, the percentage of correct answers is also higher than that of a population that responds in a random manner (40 percent higher), which may indicate that concepts taught in the course are also incorporated -though with less effectiveness- through alternative sources.

In the entrepreneurship course, the questionnaire included 7 questions covering the topics of Design Thinking, Canvas, Value Proposition, and Lean Start-Up. Some questions had the same format of the ones in the life-skills course questionnaire (where a concept discussed in the course was presented, and respondents were asked to indicate their degree of agreement or disagreement) and others were multiple choice (with only one correct answer). Table 5 shows that attendees of the course obtained a higher percentage of correct answers on all topics. Coefficients are positive and statistically significant for the different sections. Entrepreneurship training increases the average of correct answers in 22 percentage points, from 32 percent to 54 percent (see last row of table 5, *All*). In this case, opposed to the life-skills course, we observe that the average of the control group is very low (especially in the questions related to Canvas business models and Design Thinking), reflecting that concepts taught are unknown to the majority of respondents and are difficult to acquire

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<sup>13</sup>Results do not change qualitatively (or in terms of statistical significance) when the intensity of responses is considered and original values (1 to 7) are kept.

through alternative sources (even after taking the course the percentage of correct answers is not extremely high).

Results in both segments show that, on average, attendees incorporate -at least in the short term- some of concepts taught in class. This impact on course-related knowledge validates tutors' work, and it is a relatively important pre-condition to find further changes in attendees' attitudes and decisions.

### **Employment Status.**

Academia BA Emprende program seeks to provide tools to help attendees adapt to the requirements of nowadays' labor market and allow them to "create" their own jobs. To assess the short term impact on employment status, we asked enrollees to indicate which of the following best described their work situation: (a) Unemployed, (b) Homemaker, (c) In an employer-employee relationship, (d) Self-employed, and (e) Never had a job. To further assess their attitude towards the labor market and their current income level, we asked them if they were looking to find or change their jobs (either in an active or passive way), and to indicate their monthly income (choosing between 5 different categories, from "I have no income" up to "more than \$20.000").<sup>14</sup>

Table 6 reports the courses' impact on employment status. Life-skills training reduces employer-employee relationships, and increases job-search. Magnitudes of both effects are sizable: attending the course decreases the fraction of people in employer-employee relationships by 21 percentage points (with a control complier mean of 63 percent), and raises job-search by approximately one-third (22 percentage points vs. control complier mean of 0.63).<sup>15</sup> These effects are consistent with different explanations. Looking at heterogeneity in the impact according to initial employment status (Tables A7 and A8 in the appendix), we observe a positive effect in unemployment concentrated among those respondents who were already not employed before the course (Table A7). The course seems to lengthen the unemployment spell, which might be driven, among other things, by participants deciding to postpone job-search during its duration. Among those initially employed (Table A8), the course induces a shift from employee to self-employed, and increases job search. The impact of the course on employment status, especially among this last group, is in line with the objective of the course, which proposes a more proactive stance in the development of one's own professional career, with certain emphasis on an entrepreneurial spirit. However, the short-term increase in unemployment spell among those initially unemployed might raise

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<sup>14</sup>The exchange rate at the moment of the follow-up survey was approximately \$13 per dollar.

<sup>15</sup>The inclusion of covariates is important for the precision (and size) of estimates: pre-course employment status captures a sizable portion of the variation in post-course status, which reduces estimates' standard errors.

Table 6: Impact on Employment Status

	Life-Skills			Entrepreneurship		
	(1) No Covars.	(2) Covars.	(3) CC Mean	(4) No Covars.	(5) Covars.	(6) CC Mean
Employee	-0.062 (0.092)	-0.22*** (0.063)	0.63	-0.11* (0.061)	-0.090* (0.048)	0.38
Self-Employed	-0.019 (0.093)	0.083 (0.070)	0.29	0.11* (0.062)	0.15*** (0.046)	0.30
Unemployed	0.059 (0.076)	0.099 (0.067)	0.079	-0.018 (0.056)	-0.044 (0.050)	0.24
Income	554.5 (1514.3)	-1162.3 (1046.2)	12620.6	-259.8 (1094.1)	684.5 (815.8)	9432.2
Job-Search	0.23*** (0.079)	0.23*** (0.075)	0.63	-0.091* (0.052)	-0.12** (0.052)	0.86
N	237	237		499	499	
F - 1st Stage	218.4	207.0		408.1	453.5	
Indiv. Controls	No	Yes		No	Yes	
P-Score FE	Yes	Yes		Yes	Yes	

<sup>a</sup> Coefficients indicate the effect of *attending* the course among *compliers* (that is, people who is both willing and able to attend the course when offered a slot). The *treatment effect on the treated* (TOT) is estimated via 2SLS, using the outcome of the random assignment as excluded instrument. Coefficients reported in columns (1) and (4) are estimated without including other covariates than propensity score dummies. Coefficients reported in columns (2) and (5) are estimated including additional individual covariates. Columns (3) and (6) report the *control complier mean* (CCM).

<sup>b</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>c</sup> Dependent variables in first three rows are obtained from the answers to question: Which of the following best describes your employment status? (a) Unemployed. (b) Homemaker. (c) Employee. (d) Self-employed. (e) Never had a job. Dependent variable in fifth row (Job-Search) indicates who reported to be looking for a job, either in a passive or active way (regardless of their employment status).

<sup>d</sup> Individual covariates in regression models reported in columns (2) and (5) include: (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on preferences on course venues indicated in the baseline survey.

some concerns that need to be addressed by assessing if such impact persists over time.

The entrepreneurship course induces self-employment, and leads to lower job-search rates. Impact on self-employment rates is sizable: attendance raises the incidence of self-employed workers by 12.5 percentage points (vs. a control complier mean of 31 percent). Entrepreneurship training motivate people to move to self-employment and we observe (non statistically significant) falls in the fraction of unemployed, homemakers, and workers in employer-employee relationships. The impact on employment situation seems to be in line with the goals of the training, which provides tools to validate business ideas and promotes entrepreneurship. The fall in the job-search rate is consistent both with individuals being more satisfied with their new employment status, as well as with them dedicating more time to their new occupation. The shift towards self-employment has no clear short-term impact on individuals' income.

### **Entrepreneurship.**

Fostering and sustaining entrepreneurial activity is one the main objectives of Academia BA Emprende program, especially in its three more advanced courses. To assess the impact of the life-skills course and the entrepreneurship course on entrepreneurial activity, we asked enrollees if they had a business of their own (and to indicate the stage of development) by choosing one of the following options: (a) Yes, I have a business of my own; (b) No, but I've already set in motion my business venture; (c) No, but I have an idea to start a business; or (d) I do not have a business venture. In a separate question, we also asked to indicate the approximate dollar value of their business' monthly sales (by choosing between 7 categories, from "I do not have a business venture" up to "more than US\$5.000").

Estimates of the courses' impact on entrepreneurial activity are reported in table 7. Life-skills training do not have a significant impact on entrepreneurship. Estimates' standard deviations are large, and the no-impact null hypothesis cannot be rejected. The absence of a significant impact is not surprising, since, as explained in the description of the different courses, in spite of promoting an entrepreneurial mindset, life-skills training does not provide specific tools or knowledge to set up a business venture.

Entrepreneurship training has a short-term impact on business ownership and entrepreneurial activity. Its impact aligns with its objectives: among attendees, more people declare to own a business or to be setting it in motion (coefficient is significant at 20-percent level), and less people indicate just having an idea to start one. These effects are all consistent with the course helping participants to start a business from an initial idea, one of its main goals. Magnitudes are sizable: attending the course reduces the fraction of people who declare just having an idea to start a business by 20 percentage points (vs. a control

Table 7: Impact on Entrepreneurship

	Life-Skills			Entrepreneurship		
	(1) No Covars.	(2) Covars.	(3) CC Mean	(4) No Covars.	(5) Covars.	(6) CC Mean
Own-Business[Yes]	-0.085 (0.095)	-0.031 (0.076)	0.32	0.14** (0.067)	0.12** (0.058)	0.33
Own-Business[Start]	-0.040 (0.067)	-0.045 (0.070)	0.16	0.061 (0.047)	0.060 (0.045)	0.11
Own-Business[Idea]	0.16* (0.095)	0.097 (0.092)	0.34	-0.22*** (0.067)	-0.20*** (0.063)	0.46
Own-Business[No]	-0.031 (0.081)	-0.022 (0.077)	0.18	0.020 (0.052)	0.017 (0.048)	0.11
Sales	-20.0 (144.5)	2.39 (141.3)	143.4	165.3** (81.5)	189.8** (77.9)	74.2
N	237	237		499	499	
F - 1st Stage	218.4	207.0		408.1	453.5	
Indiv. Controls	No	Yes		No	Yes	
P-Score FE	Yes	Yes		Yes	Yes	

<sup>a</sup> Coefficients indicate the effect of *attending* the course among *compliers* (that is, people who is both willing and able to attend the course when offered a slot). The *treatment effect on the treated* (TOT) is estimated via instrumental variables, using the outcome of the random assignment as excluded instrument. Columns (1) and (4) are estimated without including other covariates than the propensity score dummies. Columns (2) and (5) include additional individual controls. Columns (3) and (6) report the *control complier mean* (CCM).

<sup>b</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>c</sup> Dependent variables in the first four rows are obtained from answers to question: Do you have a business of your own? (a) Yes. (b) No, but I've already set in motion my business venture. (c) No, but I have an idea to start a business. (d) No. Dependent variable in the fifth row is obtained from answers to question: What is the approximate sales level of your business? [Categories, in USD per month] A value of 0 is assigned to respondents who do not have a business or report that the venture does not have significant sales. In all other cases, the average value of the chosen category is assigned.

<sup>d</sup> Individual covariates in regression models reported in columns (2) and (5) include: (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on the preferences on venues expressed by the registered persons in the baseline survey.



complier mean of 46 percent), while the fraction of business owners raises by 12 percentage points and of those who are setting up a business by 6 percentage points. The course has also a positive effect on business sales (although information is not precise and requires certain caution in the interpretation of the result), which is partially driven by the creation of new businesses (as individual who don't own a business report sales equal to zero).

### **Socio-Emotional Skills.**

In recent years, there has been an increased focus on the importance of socio-emotional skills for labor market outcomes (Dening, 2017). In response to these trends, Academia BA Emprende program seeks to help attendees of the different courses acquire a set of soft skills (from self-knowledge to leadership capabilities) to help them adapt and succeed in their personal and professional paths. Table 8 reports the courses impact on different socio-emotional skills. The follow-up survey included a series of questions to measure different skills among participants: locus of control, empathy, self-efficacy, and the ability to carry out projects, among others. The questions asked were obtained from psychometric tests designed to evaluate the different abilities and from the literature on *entrepreneurship* that studies the importance of these qualities on the entrepreneurial performance.<sup>16</sup>

We do not observe a significant impact in any of the socio-emotional skills evaluated in the survey for either of the two courses. Although it is not possible to discard that changes will arise in the medium run after participants process the contents of the courses, these results should increase awareness about the difficulty of changing these traits, often deeply rooted in people's personality. This is specially important for the life-skills course, which has a particular emphasis on these skills.

It is important to note that the way of measuring these skills, which must be done with short questionnaires used in survey contexts, can also decrease the precision of the measurements and hinder the detection of impacts. The fact that these socio-emotional skills are not measured before the start of the course does not contribute to the statistical power either. In addition to the variables reported in the tables, questions about personal well-being, creativity, trust in others, and attitude towards risk were included, and we did not observe significant effects of attending the courses.

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<sup>16</sup>The questions were obtained from the following studies: Locus of Control: a selection of questions from the "intrapersonal" and "employment" components of Rotter's Locus of Control Scale (Rotter, 1966). The Spanish version was obtained from the work of Brenlla and Vázquez (2010). Empathy: a selection of questions from the "perspective taking" component of the Interpersonal Reactivity Index (IRI) developed by Davis (1980, 1983). The Spanish version was obtained from the work of Mestre Escrivá et al (2004). Project and Self-efficacy: questions were obtained from the work by Brenlla (2014), used in previous evaluations by Corporación Andina de Fomento (CAF).

Table 8: Impact on Socio-Emotional Skills

	Life-Skills		Entrepreneurship	
	(1) No Covars.	(2) Covars.	(3) No Covars.	(4) Covars.
Locus	-0.021 (0.12)	0.039 (0.12)	0.12 (0.081)	0.14* (0.078)
Empathy	-0.016 (0.13)	-0.071 (0.13)	0.12 (0.083)	0.12 (0.080)
Project	0.018 (0.17)	0.014 (0.18)	0.044 (0.11)	0.042 (0.11)
Self-Efficacy	-0.085 (0.17)	-0.13 (0.19)	0.032 (0.13)	0.062 (0.13)
Index	-0.026 (0.11)	-0.036 (0.12)	0.078 (0.074)	0.091 (0.073)
N	237	237	499	499
F - 1st Stage	218.4	207.0	408.1	453.5
Indiv. Controls	No	Yes	No	Yes
P-Score FE	Yes	Yes	Yes	Yes

<sup>a</sup> Coefficients indicate the effect of *attending* the course among *compliers* (that is, people who is both willing and able to attend the course when offered a slot). The *treatment effect on the treated* (TOT) is estimated via 2SLS, using the outcome of the random assignment as excluded instrument. Coefficients reported in columns (1) and (3) are estimated without including other covariates than propensity score dummies. Coefficients reported in columns (2) and (4) are estimated including additional individual covariates.

<sup>b</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>c</sup> Dependent variables are standardized averages (*z-score*) of the responses to different questions designed to measure the level of each socio-emotional skill. Locus of Control: 4 questions. Empathy: 5 questions. Personal Project: 3 questions. Self-efficacy: 3 questions. Index: average of the 4 previous z-scores.

<sup>d</sup> Individual controls include (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on preferences on course venues indicated in the baseline survey.

## Accounting for Survey Attrition.

Even if there is no evidence of differential attrition and response rates are not statistically different between treatment and control groups, the high attrition rates may seem worrisome. To assess if our results might be affected by differential attrition, we re-estimate the regressions for all outcomes of interest using inverse probability of response as sample weights. We first use enrollees' baseline characteristics to estimate the probability of response, and then use the inverse of these probabilities as sample weights, attaching more importance to respondents who are similar to attriters. Results, reported in tables A9 to A13 included in the appendix, show that estimated impacts are not affected by the sample re-weighting.

## Conclusion.

This paper presents the short-term impact of a life-skills training course and an entrepreneurship training course offered by the municipal government of the city of Buenos Aires, Argentina. We introduced a centralized assignment mechanism to allocate seats in different schools to enrollees. We exploit the random variation in assignment generated by the centralized mechanism, using a propensity score stratification as recently proposed by Abdulkadiroglu, Angrist, Narita, and Pathak (2017). To compute propensity scores, we build on results by Che and Kojima (2010) and relate propensity score values to the fundamentals of the matching problem.

In terms of methodology, this study supports the relevance and generality of the results by Abdulkadiroglu, Angrist, Narita, and Pathak (2017): in our application, propensity score stratification leads to important sample size relative to full type stratification. Furthermore, our formulation of propensity scores as a function of enrollees' preferences and school capacities helps to better understand where propensity scores come from and how they would be affected by changes in those variables. This allows, for example, to compute how, given a distribution of preferences, the vector of school capacities could be manipulated to boost statistical power, a topic to be developed in subsequent versions of the paper.

We measured the impact of the courses on 4 different dimensions: (a) course-related knowledge; (b) employment status; (c) entrepreneurial activity; and (d) social-emotional skills. The results show that, on average, attendees incorporate content taught during the courses. This result is encouraging, since it validates the teaching quality of the tutors and is a key condition for subsequent changes in attitude and behavior.

Entrepreneurship training helps participants start a business from an initial idea, thus leading to more business ownership and self-employment. These results are consistent with

previous findings by McKenzie and Woodruff (2013) in developing countries, and by Fairlie, Karlan, and Zinman (2015) in United States. Medium and long run evaluations of the impact need to follow to understand if this impact is long-lasting, and to assess the effectiveness of the course in boosting entrepreneurial activity.

We find no effects of the training on socio-emotional skills, such as locus of control, empathy or self-efficacy. Given the growing importance of these skills in labor market outcomes and the emphasis given to them (especially in the life-skills course), these results should increase awareness about the difficulty of changing these traits, and should be taken into account when designing interventions targeting these traits. In terms of the evaluation, different measures of these skills and baseline levels should be collected to increase reliability.

New editions of the Academia BA Emprende program were launched in 2017, and we expect to include them in subsequent editions of the paper. We have also requested access to administrative data on labor and entrepreneurship outcomes of all enrollees.

## References

- [1] Abdulkadiroğlu, A., J. D. Angrist, Y. Narita, and P. A. Pathak (2017). Research design meets market design: Using centralized assignment for impact evaluation. *Cowles Foundation Discussion Paper No. 2080*.
- [2] Abdulkadiroğlu, A. and T. Sönmez (1998, May). Random serial dictatorship and the core from random endowments in house allocation problems. *Econometrica* 66(3), 689–701.
- [3] Abdulkadiroğlu, A. and T. Sönmez (2003, June). School choice: A mechanism design approach. *American Economic Review* 93(3), 729–747.
- [4] Alzúa, M. L., G. Cruces, and C. Lopez (2016, October). Long-run effects of youth training programs: Experimental evidence from argentina. *Economic Inquiry* 54(4), 1839–1859.
- [5] Angrist, J. D., G. W. Imbens, and D. B. Rubin (1996, June). Identification of causal effects using instrumental variables. *Journal of the American Statistical Association* 91(434), 444–455.
- [6] Attanasio, O., A. Kugler, and C. Meghir (2011, July). Subsidizing vocational training for disadvantaged youth in colombia: Evidence from a randomized trial. *American Economic Journal: Applied Economics* 3(3), 188–220.

- [7] Brenlla, M. E. (2014). Módulo para la evaluación de habilidades cognitivas y no cognitivas en contextos de encuesta. *Corporación Andina de Fomento (CAF)*.
- [8] Brenlla, M. E. and N. Vázquez (2010). Análisis psicométrico de la adaptación argentina de la escala de locus de control de rotter. *Universidad Católica Argentina. Observatorio de la Deuda Social Argentina. Documento de Trabajo (2)*.
- [9] Card, D., P. Ibararán, F. Regalia, D. Rosas-Shady, and Y. Soares (2011). The labor market impacts of youth training in the dominican republic. *Journal of Labor Economics 29(2)*.
- [10] Card, D., J. Kluve, and A. Weber (2015, July). What works? a meta analysis of recent active labor market program evaluations. *Ruhr Economic Papers No. 572*.
- [11] Che, Y.-K. and F. Kojima (2010, September). Asymptotic equivalence of probabilistic serial and random priority mechanisms. *Econometrica 78(5)*, 1625–1672.
- [12] Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology (2)*, 85.
- [13] Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology 44(1)*, 113–126.
- [14] Deming, D. J. (2017). The growing importance of social skills in the labor market. *Quarterly Journal of Economics*, 1–48.
- [15] Diener, E., R. A. Emmons, R. J. Larsen, and S. Griffin (1985). The satisfaction with life scale. *Journal of Personality Assessment 49*, 71–75.
- [16] Dohmen, T., A. Falk, D. Huffman, U. Sunde, J. Schupp, and G. G. Wagner (2011). Individual risk attitudes: Measurement, determinants, and behavioral consequences. *Journal of the European Economic Association 9(3)*, 522–550.
- [17] Fairlie, R. W., D. Karlan, and J. Zinman (2015). Behind the gate experiment: Evidence on effects of and rationales for subsidized entrepreneurship training. *American Economic Journal: Economic Policy 7(2)*, 125–161.
- [18] Glaeser, E. L., D. I. Laibson, J. A. Scheinkman, and C. L. Soutter (2000). Measuring trust. *The Quarterly Journal of Economics*.
- [19] González-Velosa, C., L. Ripani, and D. Rosas-Shady (2012). How can job opportunities for young people in latin america be improved? *Inter-American Development Bank: Labor Markets and Social Security Unit (SCL/LMK). Technical Notes No. IDB-TN-345*.

- [20] Karlan, D. and M. Valdivia (2011, May). Teaching entrepreneurship: Impact of business training on microfinance clients and institutions. *Review of Economics and Statistics* 93(2), 510–527.
- [21] McKenzie, D. and C. Woodruff (2013, February). What are we learning from business training and entrepreneurship evaluations around the developing world? *World Bank Research Observer* 29(1), 48–82.
- [22] Mestre Escrivá, V., M. D. Frías Navarro, and P. Samper García (2004). La medida de la empatía: análisis del interpersonal reactivity index. *Psicothema* 16(2), 255–260.
- [23] Pinotti, P. (2017, January). Clicking on heaven’s door: The effect of immigrant legalization on crime. *American Economic Review* 107(1), 138–168.
- [24] Rosenbaum, P. R. and D. B. Rubin (1983, April). The central role of the propensity score in observational studies for causal effects. *Biometrika* 70(1), 41–55.
- [25] Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied* 80(1).
- [26] Sanguinetti, P. (2013). Emprendimientos en américa latina: Desde la subsistencia hacia la transformación productiva. *Dirección de Investigaciones Socioeconómicas de la Vicepresidencia de Estrategias de Desarrollo y Políticas Públicas. Corporación Andina de Fomento (CAF)*.
- [27] Tanguy, B., S. Dercon, K. Orkin, and A. Seyoum Taffesse (2014). The future in mind: Aspirations and forward-looking behaviour in rural ethiopia. *Mimeo*.
- [28] Vázquez, C., A. Duque, and G. Hervás (2012). Escala de satisfacción con la vida (swls) en una muestra representativa de españoles adultos: Validación y datos normativos. *Department of Clinical Psychology. Complutense University of Madrid*.

## Appendix

Table A1: Schools and Number of Seats by Course

<b>Life-Skills Course</b>		
<b>Address</b>	<b>Shifts</b>	<b>Seats</b>
Av. Corrientes 1723	1	50
Bogota 115	1	50
Delgado 769	1	35
Leandro N. Alem 518	1	50
Pasteur 663	1	45
Saraza 470	1	80
Uriburu 1022	1	60
Zapiola 50	2	160
<b>Total</b>	<b>9</b>	<b>530</b>

  

<b>Entrepreneurship Course</b>		
<b>Address</b>	<b>Shifts</b>	<b>Seats</b>
Algarrobo 1041	3	240
Alicia Moreau de Justo 1300	1	60
Av. Cordoba 1558	1	60
Av. Cordoba 374	1	50
Av. Corrientes 1723	1	50
Av. Dellepiane Sur 5700 y Martiniano Leguizamon	1	100
Boedo 870	1	59
Bogota 115	2	100
Lavalleja 1343	2	80
Lima 775	1	50
Montiel 153	1	35
Pasteur 663	1	45
Uriburu 1022	1	60
Zapiola 50	1	80
<b>Total</b>	<b>18</b>	<b>1069</b>

Table A2: Life-Skills Course: (Unconditional) Covariate Balance

Variable	Baseline			Follow-Up		
	(1)	(2)	(3)	(4)	(5)	(6)
	Treatment Group	Control Group	Diff. [p-value]	Treatment Group	Control Group	Diff. [p-value]
Age	34.65	34.79	0.85	36.57	36.72	0.92
Age [Squared]	1 304	1 315	0.86	1 446	1 469	0.84
Gender [Female]	0.69	0.66	0.29	0.77	0.76	0.94
Entrepreneur [Yes]	0.31	0.33	0.44	0.29	0.33	0.50
Informed [Facebook]	0.51	0.55	0.22	0.49	0.52	0.64
Informed [Friend]	0.24	0.24	0.87	0.26	0.23	0.61
Lab. [Self-employed]	0.34	0.31	0.49	0.29	0.30	0.82
Lab. [Homemaker]	0.04	0.04	0.65	0.05	0.07	0.56
Lab. [Unemployed]	0.27	0.26	0.88	0.25	0.26	0.90
Educ. [Post-Second.]	0.23	0.24	0.82	0.24	0.22	0.69
Educ. [Undergrad.]	0.32	0.34	0.44	0.35	0.38	0.70
Educ. [Graduate]	0.08	0.09	0.70	0.08	0.06	0.68
Var. Inc. [ $< 0$ ]	0.24	0.26	0.50	0.21	0.34	0.03
Var. Inc. [ $<$ Inflation]	0.38	0.37	0.67	0.43	0.33	0.12
Var. Inc. [ $>$ Inflation]	0.26	0.24	0.62	0.26	0.23	0.61
Income	10 413	10 983	0.25	11 106	10 807	0.72
Income [No reply]	0.15	0.19	0.14	0.16	0.17	0.83
Training [1 course]	0.21	0.20	0.67	0.21	0.23	0.73
Training [2+ courses]	0.12	0.13	0.54	0.10	0.16	0.22
Objectives [Yes]	2.69	2.72	0.67	2.63	2.65	0.89
Organize [Yes]	0.74	0.72	0.65	0.72	0.72	0.96
Solutions [Yes]	0.70	0.69	0.76	0.70	0.68	0.79
F-Test (p-value)			0.79			0.98
Sample size	400	316	.	128	109	.
P-Score FE			No			No

<sup>a</sup> Columns (1) to (3) refer to all enrollees with propensity score strictly between 0 and 1. Columns (4) to (6) refer only those who answered the follow-up survey (sent three months after the end of the course).

<sup>b</sup> P-values (columns (3) and (6)) are obtained from regressions relating treatment status and the corresponding variable, without including fixed effects for propensity score strata.



Table A3: Entrepreneurship Course: (Unconditional) Covariate Balance

Variable	Baseline			Follow-Up		
	(1)	(2)	(3)	(4)	(5)	(6)
	Treatment Group	Control Group	Diff. [p-value]	Treatment Group	Control Group	Diff. [p-value]
Age	35.49	35.04	0.43	37.22	36.52	0.46
Age [Squared]	1 371	1 323	0.29	1 499	1 433	0.39
Gender [Female]	0.64	0.62	0.66	0.69	0.64	0.33
Entrepreneur [Yes]	0.27	0.22	0.06	0.3	0.24	0.17
Informed [Facebook]	0.48	0.45	0.31	0.51	0.45	0.23
Informed [Friend]	0.28	0.3	0.52	0.25	0.27	0.63
Lab. [Self-employed]	0.34	0.28	0.01	0.32	0.29	0.51
Lab. [Homemaker]	0.05	0.04	0.29	0.08	0.04	0.1
Lab. [Unemployed]	0.26	0.21	0.03	0.29	0.18	0.01
Educ. [Post-Second.]	0.21	0.23	0.48	0.22	0.25	0.35
Educ. [Undergrad.]	0.4	0.4	0.86	0.35	0.39	0.43
Educ. [Graduate]	0.09	0.09	0.62	0.05	0.1	0.04
Var. Inc. [ $< 0$ ]	0.25	0.21	0.09	0.29	0.23	0.19
Var. Inc. [ $<$ Inflation]	0.41	0.45	0.2	0.39	0.44	0.29
Var. Inc. [ $>$ Inflation]	0.22	0.25	0.22	0.19	0.25	0.11
Income	11 278	12 288	0.01	10 927	12 236	0.03
Income [No reply]	0.18	0.16	0.28	0.17	0.11	0.06
Training [Yes]	0.27	0.26	0.55	0.27	0.26	0.8
Entrepreneur [Yes]	0.46	0.43	0.28	0.47	0.43	0.36
Start [Yes]	0.98	0.98	0.72	0.97	0.98	0.56
Capital [Yes]	0.5	0.47	0.21	0.49	0.43	0.24
Motiv. [Solutions]	0.26	0.24	0.42	0.29	0.25	0.44
Motiv. [Income]	0.12	0.15	0.15	0.12	0.15	0.39
F-Test (p-value)			0.01			0.01
Sample size	540	850		207	292	
P-Score FE			No			No

<sup>a</sup> Columns (1) to (3) refer to all enrollees with propensity score strictly between 0 and 1. Columns (4) to (6) refer only those who answered the follow-up survey (sent three months after the end of the course).

<sup>b</sup> P-values (columns (3) and (6)) are obtained from regressions relating treatment status and the corresponding variable, without including fixed effects for propensity score strata.

Table A4: First Stage: Impact of Assignment on Attendance

	Life-Skills		Entrepreneurship	
	(1) No Covars.	(2) Covars.	(3) No Covars.	(4) Covars.
Assignment	0.66*** (0.044)	0.63*** (0.044)	0.71*** (0.035)	0.72*** (0.034)
N	237	237	499	499
F - 1st Stage	218.4	207.0	408.1	453.5
Indiv. Controls	No	Yes	No	Yes
P-Score FE	Yes	Yes	Yes	Yes

<sup>a</sup> Coefficients indicate the effect of course assignment on course attendance.

<sup>b</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>c</sup> Dependent variables is a dummy variable indicating if the enrollee attended at least once to the course.

<sup>d</sup> Individual covariates in regression models reported in columns (2) and (4) include: (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on the preferences on schools expressed in the baseline survey.

Table A5: Life-Skills Course: Individual Characteristics and Attrition

	(1)	(2)	(3)	(4)
	Uncond.	P-Score FE	Uncond.	P-Score FE
Age	0.002 (0.011)	0.001 (0.012)	-0.002 (0.017)	-0.002 (0.017)
Age [Squared]	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Gender [Female]	0.133*** (0.038)	0.127*** (0.038)	0.132** (0.058)	0.125** (0.058)
Entrepreneur [Yes]	0.007 (0.046)	0.015 (0.046)	0.001 (0.072)	0.013 (0.072)
Informed [Facebook]	-0.036 (0.044)	-0.038 (0.044)	-0.056 (0.069)	-0.050 (0.069)
Informed [Friend]	0.002 (0.052)	0.002 (0.051)	-0.018 (0.084)	-0.022 (0.085)
Lab. [Self-employed]	-0.068 (0.051)	-0.084 (0.053)	-0.040 (0.081)	-0.062 (0.081)
Lab. [Homemaker]	0.147 (0.106)	0.130 (0.104)	0.174 (0.145)	0.153 (0.148)
Lab. [Unemployed]	-0.005 (0.054)	-0.019 (0.055)	-0.014 (0.083)	-0.028 (0.084)
Educ. [Post-Second.]	-0.018 (0.047)	-0.027 (0.048)	-0.057 (0.072)	-0.065 (0.073)
Educ. [Undergrad.]	0.028 (0.045)	0.015 (0.045)	-0.003 (0.070)	-0.021 (0.070)
Educ. [Graduate]	-0.059 (0.069)	-0.081 (0.070)	-0.102 (0.102)	-0.128 (0.104)
$\Delta$ Inc. [ $< 0$ ]	0.101 (0.066)	0.105 (0.065)	0.197** (0.100)	0.202** (0.100)
$\Delta$ Inc. [ $<$ Inflation]	0.097 (0.067)	0.095 (0.066)	0.087 (0.100)	0.084 (0.102)
$\Delta$ Inc. [ $>$ Inflation]	0.104 (0.069)	0.112 (0.069)	0.120 (0.109)	0.137 (0.110)
Income	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Income [No reply]	-0.010 (0.048)	-0.009 (0.048)	-0.066 (0.072)	-0.063 (0.072)

Continued on next page

Table A5 – continued from previous page

	(1)	(2)	(3)	(4)
	Uncond.	P-Score FE	Uncond.	P-Score FE
Training [1 course]	0.028 (0.044)	0.037 (0.044)	0.070 (0.071)	0.087 (0.071)
Training [2+ courses]	0.007 (0.058)	0.016 (0.058)	0.070 (0.093)	0.067 (0.093)
Objectives [Yes]	-0.006 (0.020)	-0.007 (0.020)	-0.013 (0.030)	-0.011 (0.031)
Organize [Yes]	-0.039 (0.043)	-0.045 (0.043)	-0.023 (0.064)	-0.028 (0.065)
Solutions [Yes]	0.021 (0.039)	0.023 (0.039)	0.011 (0.059)	0.012 (0.060)
treat	-0.028 (0.036)	-0.025 (0.036)	-0.209 (0.451)	-0.162 (0.458)
Age $\times$ treat			0.003 (0.023)	0.002 (0.023)
Age [Squared] $\times$ treat			-0.000 (0.000)	-0.000 (0.000)
Gender [Female] $\times$ treat			-0.007 (0.077)	-0.007 (0.077)
Entrepreneur [Yes] $\times$ treat			-0.001 (0.095)	-0.011 (0.096)
Informed [Facebook] $\times$ treat			0.039 (0.091)	0.023 (0.091)
Informed [Friend] $\times$ treat			0.045 (0.109)	0.050 (0.109)
Lab. [Self-employed] $\times$ treat			-0.046 (0.106)	-0.031 (0.106)
Lab. [Homemaker] $\times$ treat			-0.057 (0.212)	-0.051 (0.208)
Lab. [Unemployed] $\times$ treat			0.014 (0.111)	0.012 (0.110)
Educ. [Post-Second.] $\times$ treat			0.074 (0.097)	0.072 (0.097)
Educ. [Undergrad.] $\times$ treat			0.050 (0.092)	0.059 (0.091)
Educ. [Graduate] $\times$ treat			0.079	0.087

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Table A5 – continued from previous page

	(1)	(2)	(3)	(4)
	Uncond.	P-Score FE	Uncond.	P-Score FE
			(0.141)	(0.142)
$\Delta$ Inc. [ $< 0$ ] $\times$ treat			-0.158	-0.160
			(0.135)	(0.135)
$\Delta$ Inc. [ $<$ Inflation] $\times$ treat			0.033	0.033
			(0.136)	(0.138)
$\Delta$ Inc. [ $>$ Inflation] $\times$ treat			-0.014	-0.032
			(0.144)	(0.145)
Income $\times$ treat			0.000	0.000
			(0.000)	(0.000)
Income [No reply] $\times$ treat			0.100	0.098
			(0.099)	(0.100)
Training [1 course] $\times$ treat			-0.073	-0.087
			(0.093)	(0.093)
Training [2+ courses] $\times$ treat			-0.125	-0.105
			(0.120)	(0.121)
Objectives [Yes] $\times$ treat			0.016	0.011
			(0.040)	(0.041)
Organize [Yes] $\times$ treat			-0.032	-0.032
			(0.087)	(0.088)
Solutions [Yes] $\times$ treat			0.018	0.019
			(0.080)	(0.080)
N	716	716	716	716
F-test (covs)	0.01	0.01	0.12	0.12
F-test (interactions)			0.97	0.98
F-test (covs + interactions)			0.06	0.09
EF Preferencias	No		No	Yes

<sup>a</sup> The dependent variable in all columns is a dummy indicating if the person responded the follow-up survey. All columns include personal information from the baseline survey as covariates. Columns (3) and (4) include the interaction between these personal characteristics and treatment status. Columns (2) and (4) include propensity strata fixed effects.

<sup>b</sup> F-statistics (interactions) is used to test the hypothesis of non-differential attrition between treatment and control groups.

Table A6: Entrepreneurship Course: Individual Characteristics and Attrition

	(1)	(2)	(3)	(4)
	Uncond.	P-Score FE	Uncond.	P-Score FE
Age	0.019** (0.008)	0.020** (0.008)	0.013 (0.011)	0.014 (0.011)
Age [Squared]	-0.000* (0.000)	-0.000* (0.000)	-0.000 (0.000)	-0.000 (0.000)
Gender [Female]	0.025 (0.028)	0.022 (0.028)	0.007 (0.036)	0.003 (0.036)
Entrepreneur [Yes]	0.044 (0.033)	0.046 (0.034)	0.018 (0.044)	0.021 (0.045)
Informed [Facebook]	-0.016 (0.033)	-0.017 (0.033)	-0.029 (0.042)	-0.035 (0.042)
Informed [Friend]	-0.044 (0.035)	-0.045 (0.035)	-0.046 (0.045)	-0.049 (0.045)
Lab. [Self-employed]	-0.027 (0.035)	-0.031 (0.037)	-0.012 (0.045)	-0.012 (0.046)
Lab. [Homemaker]	0.048 (0.069)	0.045 (0.071)	-0.028 (0.093)	-0.028 (0.094)
Lab. [Unemployed]	-0.007 (0.038)	-0.015 (0.040)	-0.052 (0.049)	-0.057 (0.051)
Educ. [Post-Second.]	-0.014 (0.038)	-0.019 (0.038)	0.045 (0.049)	0.040 (0.049)
Educ. [Undergrad.]	-0.051 (0.033)	-0.052 (0.033)	0.007 (0.044)	0.006 (0.043)
Educ. [Graduate]	-0.083 (0.052)	-0.088* (0.052)	0.035 (0.069)	0.030 (0.069)
$\Delta$ Inc. [ $< 0$ ]	0.017 (0.053)	0.015 (0.053)	0.030 (0.072)	0.029 (0.072)
$\Delta$ Inc. [ $<$ Inflation]	-0.009 (0.052)	-0.013 (0.052)	0.009 (0.069)	0.003 (0.069)
$\Delta$ Inc. [ $>$ Inflation]	0.005 (0.055)	0.000 (0.056)	0.036 (0.074)	0.031 (0.074)
Income	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Income [No reply]	-0.077** (0.033)	-0.077** (0.034)	-0.114*** (0.043)	-0.115*** (0.043)

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Table A6 – continued from previous page

	(1)	(2)	(3)	(4)
	Uncond.	P-Score FE	Uncond.	P-Score FE
Training [Yes]	-0.003 (0.029)	-0.005 (0.030)	0.005 (0.038)	0.002 (0.039)
Entrepreneur [Yes]	-0.006 (0.027)	-0.007 (0.027)	-0.017 (0.035)	-0.020 (0.035)
Start [Yes]	-0.103 (0.104)	-0.110 (0.103)	-0.059 (0.132)	-0.074 (0.133)
Capital [Yes]	-0.000 (0.027)	0.002 (0.027)	-0.021 (0.035)	-0.019 (0.035)
Motiv. [Solutions]	0.056* (0.032)	0.056* (0.032)	0.029 (0.041)	0.028 (0.041)
Motiv. [Income]	-0.021 (0.039)	-0.017 (0.039)	-0.013 (0.048)	-0.007 (0.048)
treat	0.036 (0.027)	0.031 (0.029)	-0.208 (0.367)	-0.240 (0.365)
Age $\times$ treat			0.014 (0.016)	0.014 (0.016)
Age [Squared] $\times$ treat			-0.000 (0.000)	-0.000 (0.000)
Gender [Female] $\times$ treat			0.031 (0.059)	0.035 (0.059)
Entrepreneur [Yes] $\times$ treat			0.063 (0.069)	0.062 (0.069)
Informed [Facebook] $\times$ treat			0.033 (0.068)	0.047 (0.068)
Informed [Friend] $\times$ treat			0.012 (0.073)	0.017 (0.073)
Lab. [Self-employed] $\times$ treat			-0.033 (0.072)	-0.043 (0.073)
Lab. [Homemaker] $\times$ treat			0.153 (0.138)	0.149 (0.139)
Lab. [Unemployed] $\times$ treat			0.105 (0.078)	0.100 (0.079)
Educ. [Post-Second.] $\times$ treat			-0.141* (0.079)	-0.141* (0.079)
Educ. [Undergrad.] $\times$ treat			-0.139**	-0.140**

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Table A6 – continued from previous page

	(1)	(2)	(3)	(4)
	Uncond.	P-Score FE	Uncond.	P-Score FE
Educ. [Graduate] × treat			(0.068) -0.280***	(0.069) -0.278***
Δ Inc. [ $< 0$ ] × treat			(0.104) -0.022	(0.104) -0.023
Δ Inc. [ $<$ Inflation] × treat			(0.106) -0.033	(0.106) -0.027
Δ Inc. [ $>$ Inflation] × treat			(0.105) -0.064	(0.105) -0.061
Income × treat			(0.112) 0.000	(0.112) 0.000
Income [No reply] × treat			(0.000) 0.099	(0.000) 0.104
Training [Yes] × treat			(0.069) -0.027	(0.070) -0.026
Entrepreneur [Yes] × treat			(0.061) 0.025	(0.061) 0.030
Start [Yes] × treat			(0.057) -0.063	(0.057) -0.036
Capital [Yes] × treat			(0.208) 0.047	(0.205) 0.044
Motiv. [Solutions] × treat			(0.056) 0.066	(0.056) 0.065
Motiv. [Income] × treat			(0.065) -0.014	(0.065) -0.017
N	1390	1390	(0.083) 1390	(0.083) 1390
F-test (covs)	0.00	0.00	0.23	0.19
F-test (interactions)			0.54	0.51
F-test (covs + interactions)			0.01	0.01
EF Preferencias	No		No	Yes

<sup>a</sup> The dependent variable in all columns is a dummy indicating if the person responded the follow-up survey. All columns include personal information from the baseline survey as covariates. Columns (3) and (4) include the interaction between these personal characteristics and treatment status. Columns (2) and (4) include propensity strata fixed effects.

<sup>b</sup> F-statistics (interactions) is used to test the hypothesis of non-differential attrition between treatment and control groups.



Table A7: Impact on Employment Status - Segment 1 - **Not Employed**

I. Impact of the assignment to the course (Intent-to-Treat, ITT)					
	(1)	(2)	(3)	(4)	(5)
	Employee	Self-Employed	Unemployed	Income	Job-Search
	b/se/p	b/se/p	b/se/p	b/se/p	b/se/p
Effect (ITT)	-0.147	-0.129	0.287***	-1771.861*	0.041
	(0.092)	(0.091)	(0.111)	(1000.373)	(0.057)
	[0.111]	[0.156]	[0.010]	[0.077]	[0.468]
Control Mean	0.21	0.33	0.33	4423.08	0.92
Indiv. Controls	Yes	Yes	Yes	Yes	Yes
P-Score FE	Yes	Yes	Yes	Yes	Yes
F - 1st Stage	.	.	.	.	.
N	81	81	81	81	81
II. Impact of the participation in the course (Treatment-on-the-Treated, TOT)					
	(1)	(2)	(3)	(4)	(5)
	Employee	Self-Employed	Unemployed	Income	Job-Search
	b/se/p	b/se/p	b/se/p	b/se/p	b/se/p
Effect (TOT)	-0.280	-0.246	0.548**	-3377.206	0.079
	(0.196)	(0.168)	(0.235)	(2064.662)	(0.107)
	[0.153]	[0.143]	[0.020]	[0.102]	[0.462]
Control Mean (CCM)	0.46	0.47	-0.05	8377.21	0.88
Indiv. Controls	Yes	Yes	Yes	Yes	Yes
P-Score FE	Yes	Yes	Yes	Yes	Yes
F - 1st Stage	39.6	39.6	39.6	39.6	39.6
N	81	81	81	81	81

<sup>a</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>b</sup> Dependent variables in columns (1) to (3) are obtained from the answers to question: Which of the following best describes your employment status? (a) Unemployed. (b) Homemaker. (c) Employee. (d) Self-employed. (e) Never had a job. Dependent variable in column (5) indicates who reported to be looking for a job, either in a passive or active way (regardless of their employment status).

<sup>c</sup> Panel I (ITT) presents the results of the regressions of the above variables on course *assignment*. Panel II (TOT) presents the result of instrumental variables estimation of the effect of the *attendance* to the course on the same responses.

<sup>d</sup> Individual controls include (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on the preferences on venues expressed in the baseline survey.

Table A8: Impact on Employment Status - Segment 1 - **Employed**

I. Impact of the assignment to the course (Intent-to-Treat, ITT)					
	(1)	(2)	(3)	(4)	(5)
	Employee	Self-Employed	Unemployed	Income	Job-Search
	b/se/p	b/se/p	b/se/p	b/se/p	b/se/p
Effect (ITT)	-0.140*** (0.042) [0.001]	0.101** (0.045) [0.024]	0.027 (0.031) [0.388]	-743.338 (640.862) [0.246]	0.179*** (0.059) [0.002]
Control Mean	0.58	0.37	0.05	14111.84	0.68
Indiv. Controls	Yes	Yes	Yes	Yes	Yes
P-Score FE	Yes	Yes	Yes	Yes	Yes
F - 1st Stage	.	.	.	.	.
N	167	167	167	167	167
II. Impact of the participation in the course (Treatment-on-the-Treated, TOT)					
	(1)	(2)	(3)	(4)	(5)
	Employee	Self-Employed	Unemployed	Income	Job-Search
	b/se/p	b/se/p	b/se/p	b/se/p	b/se/p
Effect (TOT)	-0.210*** (0.064) [0.001]	0.153** (0.070) [0.030]	0.040 (0.046) [0.383]	-1119.455 (969.307) [0.248]	0.270*** (0.096) [0.005]
Control Mean (CCM)	0.70	0.26	0.04	14734.84	0.56
Indiv. Controls	Yes	Yes	Yes	Yes	Yes
P-Score FE	Yes	Yes	Yes	Yes	Yes
F - 1st Stage	152.5	152.5	152.5	152.5	152.5
N	167	167	167	167	167

<sup>a</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>b</sup> Dependent variables in columns (1) to (3) are obtained from the answers to question: Which of the following best describes your employment status? (a) Unemployed. (b) Homemaker. (c) Employee. (d) Self-employed. (e) Never had a job. Dependent variable in column (5) indicates who reported to be looking for a job, either in a passive or active way (regardless of their employment status).

<sup>c</sup> Panel I (ITT) presents the results of the regressions of the above variables on course *assignment*. Panel II (TOT) presents the result of instrumental variables estimation of the effect of the *attendance* to the course on the same responses.

<sup>d</sup> Individual controls include (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on the preferences on venues expressed in the baseline survey.

Table A9: Life-Skills Course: Impact on Knowledge (Attrition Weights)

	Life-Skills		
	(1) Covars.	(2) Att. Weights	(3) CC Mean
Self-Know.	0.15** (0.069)	0.15** (0.069)	0.80
Communic.	0.19** (0.092)	0.22** (0.093)	0.61
Conflict	0.063 (0.10)	-0.011 (0.11)	0.47
Leadership	0.099** (0.050)	0.12** (0.053)	0.64
Creativity	0.100** (0.046)	0.10** (0.049)	0.58
All	0.11*** (0.034)	0.11*** (0.036)	0.61
N	237	237	
F - 1st Stage	218.4	222.7	
Indiv. Controls	Yes	Yes	
P-Score FE	Yes	Yes	
IP Weights	No	Yes	

<sup>a</sup> Coefficients indicate the effect of *attending* the course among *compliers* (that is, people who is both willing and able to attend the course when offered a slot). The *treatment effect on the treated* (TOT) is estimated via 2SLS, using the outcome of the random assignment as excluded instrument. Coefficients reported in column (1) are estimated without including other covariates than propensity score dummies. Coefficients reported in column (2) are estimated including additional individual covariates. Column (3) reports the *control complier mean* (CCM).

<sup>b</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>c</sup> Dependent variables are the average of correct answers to questions designed to assess incorporation of content relating to various sections of the course. For Segment 1, topics are: Self-knowledge (1 question), Communication (1), Conflict Resolution (1), Leadership (3), and Creativity (4), and All Sections (10). For each question, it is required to indicate the degree of agreement/disagreement (1 to 7) with a statement. Responses are coded equal to 1 if the statement is true (false) and the answer is strictly greater (less) than 4.

<sup>d</sup> Individual controls include (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on the preferences on venues expressed in the baseline survey.

Table A10: Entrepreneurship Course: Impact on Knowledge (Attrition Weights)

	Entrepreneurship		
	(1) Covars.	(2) Att. Weights	(3) CC Mean
Design	0.13*** (0.042)	0.14*** (0.041)	0.22
Canvas	0.35*** (0.049)	0.35*** (0.048)	0.088
Value	0.17*** (0.049)	0.16*** (0.051)	0.59
Lean Start.	0.19*** (0.070)	0.21*** (0.068)	0.49
All	0.21*** (0.034)	0.22*** (0.034)	0.33
N	499	499	
F - 1st Stage	408.1	477.8	
Indiv. Controls	Yes	Yes	
P-Score FE	Yes	Yes	
IP Weights	No	Yes	

<sup>a</sup> Coefficients indicate the effect of *attending* the course among *compliers* (that is, people who is both willing and able to attend the course when offered a slot). The *treatment effect on the treated* (TOT) is estimated via 2SLS, using the outcome of the random assignment as excluded instrument. Coefficients reported in column (1) are estimated without including other covariates than propensity score dummies. Coefficients reported in column (2) are estimated including additional individual covariates. Column (3) reports the *control complier mean* (CCM).

<sup>b</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>c</sup> Dependent variables are the average of correct answers to questions designed to assess incorporation of content relating to various sections of the course. For Segment 2, topics are: Design Thinking (2 questions), Canvas (2), Value proposition (2), Lean Start-up (1), and All sections (7).

<sup>d</sup> Individual controls include (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on the preferences on venues expressed in the baseline survey.

Table A11: Impact on Employment Status (Attrition Weights)

	Life-Skills			Entrepreneurship		
	(1) Covars.	(2) Att. Weights	(3) CC Mean	(4) Covars.	(5) Att. Weights	(6) CC Mean
Employee	-0.062 (0.092)	-0.12 (0.084)	0.48	-0.11* (0.061)	-0.11* (0.061)	0.39
Self-Employed	-0.019 (0.093)	0.052 (0.098)	0.39	0.11* (0.062)	0.14** (0.058)	0.34
Unemployed	0.059 (0.076)	0.070 (0.079)	0.12	-0.018 (0.056)	-0.032 (0.053)	0.21
Income	554.5 (1514.3)	-21.8 (1461.6)	10903.9	-259.8 (1094.1)	763.3 (1077.6)	10376.4
Job-Search	0.23*** (0.079)	0.20** (0.094)	0.63	-0.091* (0.052)	-0.094* (0.052)	0.83
N	237	237		499	499	
F - 1st Stage	218.4	222.7		408.1	477.8	
Indiv. Controls	Yes	Yes		Yes	Yes	
P-Score FE	Yes	Yes		Yes	Yes	
IP Weights	No	Yes		No	Yes	

<sup>a</sup> Coefficients indicate the effect of *attending* the course among *compliers* (that is, people who is both willing and able to attend the course when offered a slot). The *treatment effect on the treated* (TOT) is estimated via 2SLS, using the outcome of the random assignment as excluded instrument. Coefficients reported in columns (1) and (4) are estimated without including other covariates than propensity score dummies. Coefficients reported in columns (2) and (5) are estimated including additional individual covariates. Columns (3) and (6) report the *control complier mean* (CCM).

<sup>b</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>c</sup> Dependent variables in first three rows are obtained from the answers to question: Which of the following best describes your employment status? (a) Unemployed. (b) Homemaker. (c) Employee. (d) Self-employed. (e) Never had a job. Dependent variable in fifth row (Job-Search) indicates who reported to be looking for a job, either in a passive or active way (regardless of their employment status).

<sup>d</sup> Individual covariates in regression models reported in columns (2) and (5) include: (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on preferences on course venues indicated in the baseline survey.

Table A12: Impact on Entrepreneurship (Attrition Weights)

	Life-Skills			Entrepreneurship		
	(1) Covars.	(2) Att. Weights	(3) CC Mean	(4) Covars.	(5) Att. Weights	(6) CC Mean
Own-Business[Yes]	-0.085 (0.095)	-0.024 (0.10)	0.37	0.14** (0.067)	0.15** (0.070)	0.32
Own-Business[Start]	-0.040 (0.067)	-0.016 (0.074)	0.16	0.061 (0.047)	0.062 (0.043)	0.11
Own-Business[Idea]	0.16* (0.095)	0.099 (0.098)	0.28	-0.22*** (0.067)	-0.23*** (0.067)	0.47
Own-Business[No]	-0.031 (0.081)	-0.059 (0.077)	0.19	0.020 (0.052)	0.012 (0.050)	0.11
Sales	-20.0 (144.5)	-59.3 (143.9)	165.9	165.3** (81.5)	244.4** (101.9)	98.7
N	237	237		499	499	
F - 1st Stage	218.4	222.7		408.1	477.8	
Indiv. Controls	Yes	Yes		Yes	Yes	
P-Score FE	Yes	Yes		Yes	Yes	
IP Weights	No	Yes		No	Yes	

<sup>a</sup> Coefficients indicate the effect of *attending* the course among *compliers* (that is, people who is both willing and able to attend the course when offered a slot). The *treatment effect on the treated* (TOT) is estimated via instrumental variables, using the outcome of the random assignment as excluded instrument. Columns (1) and (4) are estimated without including other covariates than the propensity score dummies. Columns (2) and (5) include additional individual controls. Columns (3) and (6) report the *control complier mean* (CCM).

<sup>b</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>c</sup> Dependent variables in the first four rows are obtained from answers to question: Do you have a business of your own? (a) Yes. (b) No, but I've already set in motion my business venture. (c) No, but I have an idea to start a business. (d) No. Dependent variable in the fifth row is obtained from answers to question: What is the approximate sales level of your business? [Categories, in USD per month] A value of 0 is assigned to respondents who do not have a business or report that the venture does not have significant sales. In all other cases, the average value of the chosen category is assigned.

<sup>d</sup> Individual covariates in regression models reported in columns (2) and (5) include: (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on the preferences on venues expressed by the registered persons in the baseline survey.

Table A13: Impact on Socio-Emotional Skills (Attrition Weights)

	Life-Skills		Entrepreneurship	
	(1) Covars.	(2) Att. Weights	(3) Covars.	(4) Att. Weights
Locus	-0.021 (0.12)	-0.030 (0.12)	0.12 (0.081)	0.11 (0.080)
Empathy	-0.016 (0.13)	-0.089 (0.13)	0.12 (0.083)	0.10 (0.080)
Project	0.018 (0.17)	-0.039 (0.16)	0.044 (0.11)	-0.013 (0.11)
Self-Efficacy	-0.085 (0.17)	-0.14 (0.16)	0.032 (0.13)	0.0044 (0.12)
Index	-0.026 (0.11)	-0.075 (0.11)	0.078 (0.074)	0.051 (0.070)
N	237	237	499	499
F - 1st Stage	218.4	222.7	408.1	477.8
Indiv. Controls	Yes	Yes	Yes	Yes
P-Score FE	Yes	Yes	Yes	Yes
IP Weights	No	Yes	No	Yes

<sup>a</sup> Coefficients indicate the effect of *attending* the course among *compliers* (that is, people who is both willing and able to attend the course when offered a slot). The *treatment effect on the treated* (TOT) is estimated via 2SLS, using the outcome of the random assignment as excluded instrument. Coefficients reported in columns (1) and (3) are estimated without including other covariates than propensity score dummies. Coefficients reported in columns (2) and (4) are estimated including additional individual covariates.

<sup>b</sup> Robust standard errors reported between parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$  y \*  $p < 0.1$ .

<sup>c</sup> Dependent variables are standardized averages (*z-score*) of the responses to different questions designed to measure the level of each socio-emotional skill. Locus of Control: 4 questions. Empathy: 5 questions. Personal Project: 3 questions. Self-efficacy: 3 questions. Index: average of the 4 previous z-scores.

<sup>d</sup> Individual controls include (i) demographic information (age and gender), (ii) employment status, (iii) educational level, (iv) level and recent evolution of income, (v) socio-emotional skills (ability to define objectives, organize and propose solutions). Information is self-reported and obtained from the baseline survey, completed prior to the drawing and allocation of course seats.

<sup>e</sup> Propensity Score FE: fixed effects for each propensity score value, which depends on preferences on course venues indicated in the baseline survey.