

Can arts-based interventions enhance labor market earnings among youth? Evidence from a randomized trial[#]

Carla Calero, Veronica Gonzales, Yuri Soares
Inter-American Development Bank (IADB)

Jochen Kluve
Humboldt-Universität zu Berlin

Carlos Henrique Corseuil
Instituto de Pesquisa Econômica Aplicada (IPEA)

This draft: 31 January 2014

[#] The authors wish to thank the Multilateral Investment Fund (MIF) of the Inter-American Development Bank (IADB) for providing funding and support for this research. The authors also wish to thank the program administrators at *Galpão Aplauso* for graciously volunteering their time and effort in order to implement the randomized trial required for this study to be conducted, and in particular the enthusiasm and dedication of the founder of *Galpão*, Ivonette Albuquerque. We also thank the dedication of Luis Eduardo Guedes and his team at Overview Pesquisa for the excellent work in data collection. The authors would also like to thank the participants of the seminar held in Rio de Janeiro in April of 2013 and Washington in July of 2013. Comments by Suzanne Duryea and Laura Ripani are also greatly appreciated. This paper does not represent the views of the Inter-American Bank or its Board of Directors or Governors. The paper is the sole responsibility of the authors, who are responsible for any errors or omissions.

Abstract

This paper provides findings of a small-scale, innovative labor training program that uses expressive arts and theatre as a pedagogical tool. To our knowledge this is the first paper to rigorously evaluate the effectiveness of a training programs constructed around expressive arts. Using a randomized assignment of youth into program and control groups, we look at the short-run impacts of program components on measures of personality traits, risk behaviors, and employment and earning. We find short-run impacts of program components on employment five months after the program finalized; no impacts are found for shorter periods. These short-run impacts are economically very large, compared to those typically found in the literature: a 24 percentage point estimate of treatment on the treated. We find no evidence of significant program impacts on other variables, including personality-related traits, providing evidence that these traits may not malleable for young adults in the short-run. We argue that the program employment impacts documented may be due to both skills formation and to program signaling of higher quality workers.

1 INTRODUCTION

Brazil has seen remarkable progress in labor market outcomes over the last decade. Due to years of favorable growth, the country experienced broad-based increase in wages, falling unemployment, increased formality and improved job quality, and a generally more efficient labor market. In addition, this job creation and wage growth has been particularly equitable, and has been the main contributor to decreases in income inequality (Barros et al, 2007; Hoffman, 2009).

This progress notwithstanding, labor market outcomes of youth—particularly those from disadvantaged socio-economic contexts—continues to be markedly worse than almost any other demographic group. These youth face lower wages, higher levels of informality and more frequent unemployment spells. Their attachment to the labor market is also tenuous and punctuated, characterized by a higher frequency of dismissals than is found for adults.

Labor economists identify several possible culprits for the poor performance of disadvantage youth, including low quality schooling (Quintini, Martin, and Martin, 2007) and poor family and neighborhood environments, which result in accumulated deficits in different types of human capital. These limited starting conditions also result in deficits in acquired skills, both cognitive and socio-emotional (“non-cognitive”). As a result, these disadvantage youth face significant headwinds entering and being successful in the formal labor market. This problem is typically addressed through a wide array of policies and programs, with focuses ranging from flexible youth contracts, wage subsidies, public employment schemes, remedial education programs, vocational and technical training, to programs focusing on the development of different types of soft skills.

This paper discusses one of the more innovative approaches at dealing with youth unemployment among disadvantaged youth in Rio de Janeiro (Brazil) pioneered by a small NGO, *Galpão Aplauso*. The novel dimension of this program is the use of expressive arts and theatre as a pedagogical and skills building tool. This tool is used in tandem with other more orthodox vocational and academic components. Although expressive arts have long been used as a vehicle for teaching—including for at risk youth—its use in a labor training program is uncommon.

This paper contributes to the labor training literature in two important ways. First it is the first (to our knowledge) rigorous evidence on the effectiveness of an arts and theatre-based pedagogical instruments at impacting employment and earnings. Second, the paper also contributes to the literature on the role of both cognitive and socio-emotional skills in labor market outcomes. Our understanding of how these skills are jointly determined and how they impact labor market outcomes is limited, despite recent advances in research in this area (Almund et al, 2011; Heckman and Kautz, 2012), and the findings provide additional evidence in this regard.

The paper is organized as follows: Section 2 discusses the evidence we have on the effectiveness of the different modalities of youth training in general. It also presents how cognitive and socio-emotional skills are measured, and the causal relationship between socio-emotional skills, personality traits, and labor market outcomes. Section 3 discusses the labor market for disadvantage youth in Brazil and the constraints that limit their employment and earnings outcomes. Section 4 discusses the *Galpão Aplauso* program in the context of the labor youth labor market in Rio de Janeiro; it describes at the identification strategy used, data sources, and the implementation of the evaluation. Section 6 describes main results. Section 7 provides a discussion of the results and conclusions.

2 LITERATURE REVIEW

A. Evidence on youth training programs

Youth employment is one of the most persistent problems in public policy. Although employment is almost universally one of the most important social and economic concerns of policy-makers, the different nature of youth employment often calls for policies that are different than those of adults. Youth tend to have lower labor market attachment, and higher levels of job turnover. For example, administrative data on labor markets in Brazil show that the frequency of youth dismissals is much higher than those for adults (Corseuil et al, 2013a)¹. Youth employment is particularly cyclical (Verick, 2011; Choudhry et al, 2010), and since youth have had little time to accumulate assets, they are more vulnerable to the immediate consequences of unemployment spells. The impacts of negative labor market outcomes (e.g. unemployment spells) are

¹ A stylized fact observed in employment and earnings surveys in many countries (Cunningham and Salvagno, 2011).

particularly persistent in the case of low-educated youth (Burgess, Propper, Rees and Shearer, 2003). Research also suggests that both the duration and frequency of these spells may be higher for lower-schooled and otherwise economically disadvantaged youth (Quinten, Martin, and Martin, 2007).

In addition, lower-skilled workers are less capable of obtaining jobs through more formal mechanisms, and therefore rely to a greater degree on informal networks (Wahba and Zenou, 2005). As the quality, size and density of networks are important for obtaining jobs through informal connections, youth may be at a disadvantage, given they have not had time to acquire high-quality peer networks, having to rely to a larger degree on parental ties (Kramarz, Skans, 2011). This pattern may be more pronounced in the case of youth who lack credentials (high school drop-outs), or who have poor credentials (poor academic performance).

Youth from marginal communities also face disadvantages due to poorly developed cognitive and socio-emotional skills. As mentioned above, cognitive skills, such as academic knowledge, literacy, mathematical ability, as well as other traits related to intellect, and intelligence are usually considered to be important to labor market outcomes. Recent empirical evidence brings to light the importance of socio-emotional skills by shaping education and labor market choices, and by determining success, conditional on having made certain choices.²

The available set of policies and programs that are typically used to address youth employment and earnings is extensive. They are typically in the form of Active Labor Market Policies (ALMPs). ALMPs range from demand incentives in the form of targeted wage subsidies (either directly or through tax incentives); direct public employment, flexible employment modalities, which reduce transaction costs and avoid contingent labor liabilities (including internships); sponsored intermediation services; to various types of training and vocational programs. For the most part these programs are implemented, managed, or financed with public funds. However, non-public actors collaborate with publically-sponsored programs and provide an opportunity to experiment and implement novel solutions on a small scale.

Recent reviews of ALMPs in industrialized countries find that they are limited in their ability to actually enhance employment, even if they tend to have modest impacts on earnings. For instance, Card, Kluve and Weber (2010) look at 199 studies on ALMPs from 1995 to 2007.

² Cognitive and socio-emotional skills are also intrinsically linked, as they are jointly determined—with socio-emotional skills determining cognitive skills and vice-versa (see Almund et al. 2012 for an extensive literature review).

They find generally small point estimates of program effectiveness on employment and earnings, with public employment faring the worst and classroom and on-the-job training doing the best. Youth programs yield smaller results, according to the authors. In a similar meta-analysis Kluve (2010) reviews 137 different program evaluations from 19 industrialized countries, and finds little evidence for the effectiveness of most ALMPs. The study finds that effectiveness is driven much more by type of program than by contextual factors, with some programs such as direct employment producing negative employment effects, while wage subsidies produce relatively large impacts on employment.

Although ALMPs generally have small or negative short-run impacts, these tend to increase over time. In the case of a review of the US-based Workforce Investment Act (Heinrich et al, 2013), the authors find that beneficiaries actually see lower employment and earnings in the short-run, followed by modest gains, mostly in the form of higher earnings. Using administrative data from German programs, Caliendo et al. (2012) find the same pattern, in which initial results are negative, followed by an increase in employment and earning over time. In the Caliendo et al study, training programs tend to have initial negative impacts for about 10 months, followed by an increasing impact over time. Wage subsidies, on the other hand, do not produce negative impacts, although their impact peaks at 12 months, after which it fades away.

Evidence for the effectiveness of ALMPs for emerging economies -and Brazil in particular- is much less common. Urzua and Puentes (2010) report on the findings from LAC and find that the evidence is generally more positive than in the industrialized context, with consistent findings of positive (if modest) employment effects, particularly for women. However, the authors are quick to point out the relatively poor evidentiary basis of these studies.

Urzua and Puentes' caveats regarding evidence are well placed. There are surprisingly few rigorous evaluations of ALMPs in LAC, and even fewer in Brazil. In addition, the impacts documented in more rigorous program reviews tend to present more modest impacts. Card et al. (2011) provided the first rigorous evidence of the effectiveness of a youth training program, for Dominican Republic's *Juventud y Empleo (JE)*, a labor training program consisting of vocational and basic or life skills training with a subsequent program-sponsored internship. The authors find no impact on employment, although they do find impacts on both wages (10% treatment effect) and formality. The remaining studies find very much the same as Card et al. (2011). Ibarraran et al. (2012) look at the second phase of the program and essentially find the same

results: quality of employment and (to some degree) earnings, but no employment impacts. Attanasio et al. (2011) look at the case of Colombia's *Jovenes en Acción*, a program structured very much like *JE*: a mixture of training with internship. As was the case of *JE*, the authors find no employment impacts (except for women), although they do find impacts on both earnings and formality, but only for women (19% treatment effect on wages). In a similar vein, Alzua (2013), when looking at a smaller program run by an NGO, the International Youth Foundation (IYF) in Argentina, finds no employment effects, but some effects on labor earnings.

In the case of Brazil, there are two main studies that rigorously review the effectiveness of ALMPs: Oliveira and Rios-Neto (2007) and Corseuil et al (2013b). Oliveira and Rios-Neto evaluate the impact of a vocational training program conducted in Minas Gerais on employment, and on the duration of employment. They find both employment effects, and a stronger attachment to the labor market. Corseuil (2013b) use longitudinal administrative data on wages, hiring and unemployment spells to evaluate the effectiveness of the Brazilian *Jovem Aprendiz* program, a flexible employment modality. They take advantage of a discontinuity present in the eligibility rule for individuals' age, to estimate impacts on employment and wages, and find significant impacts on wages (roughly 50 percentage point increase) two years after the first participation in the program. The effects are mixed on employment outcomes. On one hand there is no effect on the likelihood of formal employment, but on the other, the program seems to reduce job turnover.

B. The role of cognitive and socio-emotional skills in labor markets

Economics has long been interested in the role of cognitive skills on labor market performance, but until recently the profession has dismissed socio-emotional skills as unimportant for job performance. In the United States, the discussion of the role of cognitive skills was important in the context of estimating returns to schooling. Blackburn and Neumark (1993) and Camren and Heckman (1993) both find evidence that test scores (as proxies of cognitive ability) play a role in earnings, and that without them returns on education might be overstated. These findings were corroborated by several other early studies, although the relevance of cognitive skills was by no means unanimous. For example, Murnane et al (1995) found that they are not important conditional and schooling levels, particularly for women.

Evidence outside the United States has also shown a positive relationship between cognitive skills and earnings. Green and Riddell (2003) find a significant effect of literacy test scores on earnings, even when experience, education, and family characteristics are accounted for. Using the German Socio-Economic Panel Survey (SEOP), Anger and Heineck (2010) find that wages are positively related to “speed of cognition”, although word fluency does not seem to matter. In one of the very few studies to look at the role of cognitive skills in LAC, Diaz et al. (2012) find that verbal fluency, math problem solving, and memory are all strongly related to earnings in Peru. Measures of intelligence are usually less important in determining career success or earnings for most occupations. This is seen, for instance, in the Diaz et al. (2012) Peru study: although all cognitive measures are strongly related to earnings, once schooling levels are included in their regression, only math problem solving is significant at conventional levels. A previous study by Bassi and Galliani (2009) essentially find the same thing: cognitive ability—in this case measured by the Ravens’ test—impacts earning only through education.

Inquiry regarding the role of socio-emotional skills as determinants of outcomes in economic and social life has existed for decades outside the economics profession. Psychologists and Sociologists have long since studied the role of socio-emotional traits on subjective well-being (SWB), measures of health, quality of life, and longevity; the success and enjoyment of family, peer and intimate relationships, occupational choice and labor outcomes, among many other outcomes. Ozer et al. (2005) provide a good review of the correlations documented across many of these studies. In most cases these studies have utilized measures of personality traits—usually measured by self-reported psychological tests.

The most common framework of personality traits used in the literature is the Five Factor Model or Big Five Factors (Costa and Mcrae, 1988), in which all relevant personality traits are subsumed into five main traits—each with a series of sub-traits. The “Big Five” traits are (i) Conscientiousness, (ii) Openness to Experience, (iii) Extraversion, (iv) Agreeableness, and (v) Neuroticism/Emotional stability.³ This framework has become the conceptual workhorse of research on personality psychology, and over the years variants of the framework have emerged; and equally significant, innumerable instruments with which to measure each of the core and subordinate personality traits. However, most research into personality traits treated the traits

³ These dimensions and their subordinate sub-traits can be measured by self-reported psychological tests, direct inquiry by a professional psychologist, or by reporting by a lay third party, also though a structured questionnaire. In practice, they are typically estimated based on self-administered personality tests.

themselves as largely exogenous and fixed over the lifetime. Although this view has been (successfully) challenged by recent research, in practice there are few studies that attempt to model how these traits can themselves be impacted by public policies.⁴

More modern approaches look at skill formation from a unified perspective, in which cognitive endowments impact decision-making throughout the lifecycle, which in turn also impact both measures of cognitive and socio-emotional development. Heckman et al. (2006) provide one of the first attempts to model socio-emotional skills as an endowment. They show how the different distribution of trait endowments (both intelligence and socio-emotional endowments) can lead to different decisions, including differences in sorting into jobs, and different schooling decisions. Cunha and Heckman (2007, 2009) expand this model to take into account dynamic investment over the life-cycle. In effect, socio-emotional skills are not treated as stationary in a point in time, but rather shaped by different decisions by households and individuals.

Evidence also points to the importance of both cognitive and socio-emotional skills in labor market outcomes. Bowles, Gintis, and Osborne (2001) provide a review on early empirical evidence and conclude that both socio-emotional skills and cognitive skills explain a significant portion of variation in earnings. Osborne (2005) applies a Rotter scale of locus of control and finds that both locus of control and aggression (both aspects related to Neuroticism/Emotional Stability in the Big Five) are associated with higher wages of both men and women. They also find that these measures explain a larger share of variance in (log) wages than do measures of crystalized (such as IQ) or fluid intelligence. This is a similar finding to that of Heckman et al. (2006) and Mueller and Plug (2006). Using data from the Wisconsin Longitudinal Study (WLS), Mueller and Plug (2006) find that some aspects of the Big Five are related to earnings, but that the effects are different between men and women.⁵ They also find that, in some instances, “positive” psychological traits either are not related to earnings or actually are related with lower earnings; agreeableness seems to be related with *lower* earnings for men.

⁴ Costa and Mcrae (1994) argue that most personality traits are immutable after adolescence (a view that has since been systematically falsified by numerous studies). As such, Psychologists did not advance a framework by which the formation of socio-emotional skills over time would modeled based on an accumulation of life experiences.

⁵ High levels of conscientiousness seem to be related to higher wages for women, whereas openness (which is also related to IQ) seems to be related to higher wages for men.

More recently, Heineck and Anger (2010), using the German Socio-Economic Panel Study (GSOP), corroborate some of the findings above. They find that locus of control is important for earnings of both men and women, and the effect is twice as large as the measures of cognitive ability in the GSOP. On the other hand, Heckman et al. (2011) find personality traits play a relatively unimportant role in labor outcomes (or health outcomes), outside its role in shaping education decisions. Finally, a recent review of evidence by Almund et al. (2011) suggest that *conscientiousness* and *internal locus of control* (related to Neuroticism/Emotional Stability) seem to be particularly predictive of worker turnover (Gallo et al, 2003); sorting into professions (Barrick and Mount, 1991; Ham, Junankar and Wells, 2009; Heckman, Stixrud and Urzua, 2006); and earnings (Cattan, 2011).

The evidence for LAC on the relative importance of cognitive and socio-emotional skills is largely derived from the same two studies already mentioned: Diaz et al. (2012) and Bassi and Galiani (2009). Both studies find that socio-emotional skills are less important than cognitive skills, but cognitive skills are largely mediated through education. That is, cognitive skills impact earnings through higher educational attainment. However, both of these studies relied on large national surveys, and were not necessarily targeted to the youth population that is usually the subject of ALMPs. Ibarraran et al. (2012) collect experimental data from latter rounds of the Dominican Republic youth training program (JE), and measure both cognitive and socio-emotional skills. Although they find evidence that the program impacts the formation of non-cognitive skills⁶, curiously they found that these skills were unimportant in determining labor outcomes.

There are quite a few studies that look at the empirical relationship between measures of cognitive and socio-emotional attributes and consequential outcomes in cross-sections. In fact, the evidence reviewed above relies almost exclusively on cross-sectional and observational data to model processes governing the accumulation of both cognitive and socio-emotional skills, and their role in aspects such as education and occupation choice, and ultimately labor market outcomes. These findings are instructive for policies and programs, in explaining how they can shape the process by which these skills are acquired, or even how they can mediate the market mechanisms by which workers select into professions that best take advantage of a specific set of

⁶ The authors use three different scales to measure non-cognitive skills: Social and Personal Competencies Scale, Rosenberg test and Grit scale.

skills. However, they are almost all mired in problems of endogeneity and reverse causation. And although some of the authors attempt to deal with these problems, the credibility of these studies rest to some degree or another on identification assumptions—usually instrumental variables with at best questionable validity. Nonetheless, experiments can be fashioned in a limited scope; typically in the context of public policies that attempt to address limitations in skills of specific youth. In this context, specific evidence on the effectiveness of these policies or programs can be produced, and it may also be possible to explore the different pathways by which skill is formed, and their ultimate relevance for labor market outcomes.

C. Expressive arts and cognitive development

The importance of arts and music in the development of the brain and its consequences for intellectual and socio-emotional development is increasingly well documented in the medical and social sciences literature. And although music has generated much more interest and research in this area, recent research on the arts has advanced both the theoretic discussion and the empirical evidence base⁷. Developmental psychologists argue that arts-based therapies can help school-age youth exercise emotional regulation (Moneta and Rousseau, 2008). In a compendium of studies looking at arts and cognition (Ashbury and Rich, 2008), Posner et al. (2008) suggest specific pathways and networks which through which arts can impact the brain. They argue that networks in the brain related to both “executive attention” and “effortful control” can be impacted by arts. Since these networks are associated with different types of cognitive functioning—including emotional—this strengthening can potentially impact a wide range of cognitive processes.

Unfortunately the evidence linking specific types of expressive arts-based activities with improved cognitive processes among youth is scarce. In fact, most studies that look at the impacts of expressive arts are concentrated in the medical literature, and generally focus on programs associated with the elderly, as complementary treatment for cancer, or in post-operative settings (Stuckey and Noble, 2010). In one of the few randomized trials to test the cognitive and socio-emotional impacts of expressive arts on youth, Schellenberg (2004) found that expressive arts had a large impact on socio-emotional outcomes (as measured by

⁷ The association between music training and cognitive development is particularly well documented, and music training, particularly by younger pupils, appears to impact different dimensions of cognitive function (Schellenberg, 2011).

psychological tests), but no impacts on measures of crystalized intelligence (as measured by an IQ test). Music lessons, on the other hand, had a small impact on crystalized intelligence but no impact on socio-emotional metrics. This result is similar to that found in less rigorous studies (reflexive evaluations). For instance, in a pre-post comparison, Wright (2006) found improved role-taking ability, as well as verbal ability following participation in a theatre program. In a separate randomized trial of an expressive arts program in Finland, Joronen et al (2011) found that participation in drama reduced the instances of bullying in school. It should be noted, however, that the studies above are based on school-based interventions, and as such treat younger populations than those of *Galpão*. In addition, these programs are focused on proximate cognitive outcomes; no studies have examined the potential of the arts in promoting better labor market outcomes.

3 THE GALPÃO PROGRAM IN RIO DE JANEIRO

C. Labor market conditions for youth in Rio de Janeiro

The Galpão program was implemented in a generally positive labor market context. The city of Rio de Janeiro, in Brazil, has experiences overall positive employment and earnings growth over the past decade. For example, data from the *Pesquisa Mensal do Emprego*⁸ allow us to analyze the labour market trends during the time period of the evaluation of *Galpao Aplauso* Program.

According to the (PME), Rio de Janeiro has seen a remarkable improvement in terms of employment, earnings, and formality. Table 1 reports the evolution of labor market indicators regarding employment opportunities according to different segments. Unemployment rates are shown in the first four columns, while the employment shares in manufacturing and construction are shown in the next four columns. In each line we show averages for the first six months of the respective year.⁹

⁸ The PME is the main instrument for recording high-frequency data on labor markets – including informality - over time in Brazil. It is a monthly household survey conducted by the Instituto Brasileiro de Geografia e Estatística (IBGE) in the six larger metropolitan regions of Brazil.

⁹ The numbers in the first two lines point the trends on labor market indicators prior to the training sessions. The comparison between the last two lines, that is, between the first half of 2012 and the first half of 2013 can be used to show labor market evolution just before the baseline, and some months after the training when the follow-up was conducted.

Unemployment rates have been decreasing both in Rio and other metropolitan regions. The trend is the same once we restrict the sample for youth. Irrespective of the geographical areas the decline is more intense in the most recent period. As most of individuals trained at *Galpão* are placed in activities related to manufacturing and construction, we also illustrate the share of these sectors in employment for the same segments. The table show a decline around half percentage point (p.p.) for the employment share for these sectors both in Rio de Janeiro and other metropolitan regions from 2010 to 2013. The picture changes when we restrict the analysis for the youth. In contrast, employment share of youths in manufacturing and construction rises in Rio de Janeiro and decline of 0.5 p.p. in other regions.

Table 1: Trends in employment opportunities indicators: 2010 to 2013

	Unemployment rate %				Employment share of manufacturing			
	All		Youth		All		Youth	
	Rio	Other MRs	Rio	Other MRs	Rio	Other MRs	Rio	Other MRs
2010	5,9%	7,8%	11,5%	14,2%	20,1%	25,5%	18,1%	24,6%
2012	5,5%	6,0%	11,2%	11,3%	19,8%	25,4%	18,8%	24,8%
2013	4,8%	6,0%	10,1%	11,4%	19,5%	24,9%	18,7%	23,9%

Table 2 presents data on the evolution of labor market indicators regarding job quality for the same demographic categories. Informality rates are shown in the first four columns, while average labor earnings are shown in the next four columns. We can see that informality rates have been decreasing less in Rio de Janeiro than other metropolitan regions up to 2012. From 2012 to 2013 it was the other way around, with informality decreasing sharper in Rio than in other regions. The pattern registered for the sample restricted for youth is similar to the one for all individuals as attested by comparing columns three and four with one and two respectively. The remaining columns of the Table report the evolution of a normalized index for labor earnings. One can see that labor earnings for youth increases more in Rio de Janeiro than in other regions from 2012 to 2013, despite the reverse trend from 2010 to 2012.

Table 2: Trends in job quality indicators: 2008 to 2012

	Informality rate % (private sector)				Average labor earnings			
	youth				youth			
	Rio	MRs - Rio	Rio	MRs - Rio	Rio	MRs - Rio	Rio	MRs - Rio
2010	20,7%	21,0%	25,8%	24,4%	1	0,968	0,652	0,647
2012	18,8%	17,4%	23,3%	20,6%	1,236	1,172	0,799	0,811
2013	17,0%	16,4%	21,5%	19,9%	1,349	1,263	0,910	0,865

Overall we can see that labor market has been improving in all dimensions analyzed here related to employment opportunities and job quality. It is important to note that best situation is always computed for young individuals in Rio de Janeiro between first half of 2012 and first half of 2013, which is the relevant situation for individuals trained at *Galpão*. As we shall see later on, the overall employment trends on youth from the PME in Rio de Janeiro are very similar to the profiles we observe from the program beneficiary data.

B. The *Galpão* Program

In 2009, the Inter-American Bank's Multilateral Investment Fund (MIF) partnered with the *Instituto Stimulu Brasil* to finance the "Sociocultural and Productive Integration of At-risk Youth" project in Rio de Janeiro (henceforth referred to as *Galpão Aplauso*, or just *Galpão*). The project aimed at improving the socio-economic situation and employability of youth by providing basic and soft skills, vocational training, and placement services. The program consisted of a combination of vocational, academic training, and soft skills training, delivered through a pedagogic method that utilized arts and dance.

The initiative grew out of a perception that the cultural spaces being built in the favelas merely served to consolidate ghettos. Young people could not move from one community to another because of violence and their limited ability to move about the city. The idea was to create a neutral downtown space, specifically in the port area, away from the favelas. The working methodology created and used by *Galpão Aplauso* aims to help young people escape from social program beneficiary status and become citizens embraced by the labor market. The program had been in operation since 2005, but has undergone significant changes from 2009 to 2013.¹⁰

The program was particularly intensive, if compared with other youth training programs in the region (e.g. *Juventud y Empleo*, *Jovenes en Acción*). Program's duration is approximately 6 months, 5 hours a day, 5 days a week, distributed in three shifts—morning, afternoon, and

¹⁰ The program was originally co-financed by the public sector. The program's first partnership was with the Municipality of Rio de Janeiro, where it received public funding to train youth from the marginalized favelas. During its early years the program was very large, reaching a peak of roughly 10,000 youth trained. However, this partnership was discontinued with a government change, leaving the program administrators with the task of finding a new model of operation, which would not rely on public funding. In 2009 the program was rather small, with 4-5 cohorts of youth per year, and cohort sizes of roughly 100 students.

evening. The treatment included 300 hours of vocational training (mainly construction-related, soldering, wood shop)¹¹, 180 hours of training on academic and basic skills, including remedial courses in both Mathematics and Portuguese, and 120 hours in life skills. All youth admitted had to attend a session on basic principles of “social harmony”, which emphasized certain civics and certain shared values, along with socio-emotional development.¹² The pedagogic model employed made extensive use of arts and theatre as training mechanism.

Unlike other programs evaluated in LAC, *Galpão* did not have an explicit job placement service, or a formal internship program. Rather, the program relied on both formal and informal contacts with private-sector partners and partnership with local firms. In some cases, *in situ* vocational training was sponsored by partner firms. In other instances, firms would make contributions (regular or ad hoc) to the program but would not specifically sponsor any type of training. According to interviews with the program administrators, demand for the program was produced by word-of-mouth, relying mainly on former participants, teachers, and private sector partners to announce the opening of each of the cohorts. Given that the cohorts were over-subscribed, the program did not have to carry out information or dissemination campaigns. Based on administrative data, the average cost per youth was R\$810 (\$ 385 USD) a month, or R\$4,680 for the entire curriculum.

C. Identification strategy and evaluation design

Youth to be treated by *Galpão* were selected in a two-stage process. In the first stage, all the youth responding to a new announcement, are given a “pre-inscription” questionnaire which includes information related to personal and household situation, current employment, educational status, etc. Only those with monthly household income below two minimum wages are eligible. Youth who have aged out of the program (over 29 years old) are not allowed to apply. In a second stage, eligible youth are contacted and are required to undertake an interview process and to take a Mathematics and Portuguese test. According to the number of slots available, the best-performing youths of the math and language tests are invited to enroll in the

¹¹ The vocational component was tailor-made to the beneficiaries. Program administrators would observe students with different types of aptitude and would find the most appropriate type of vocational activity.

¹² Concepts, principles, and values such as ethics, civic responsibility, respect, environmental education, solidarity, health, and honesty are taught.

program. The interview serves to attempt to identify youth who are currently involved in either drugs or gang activity; those are not offered a slot, regardless of their academic performance.

Given that the program was oversubscribed, it was possible to employ an experimental design to evaluate the program, by which eligible beneficiaries would be randomly assigned to either a treated or a control group. The randomized selection was double blinded.¹³ Program administrators called applicants and advised them of their status, and applicants that were randomly selected in were allowed to enroll. The experiment was also structured with an exception mechanism which would allow *Galpão* administrators to exclude certain individuals from the study.¹⁴ These *pre-selected* individuals were identified before the randomization took place and excluded from the experiment. They were allowed to enroll immediately and were not part of the lottery (although data was collected on them). This procedure is routinely used in experiments to avoid problems with potential controls later being treated by the program after the randomization. This contamination occurred, for instance, in both the case of *Juventud y Empleo* and *Jovenes en Acción*. Furthermore, it was agreed that the program administrator would keep the treats and controls ignorant of the possibility of future participation to eliminate impact based on expectations of future treatment.¹⁵

The experiment implemented followed the program's cohort structure. The program was rolled out in three cohorts over time¹⁶, in each case the cohorts were randomized and baseline and follow-up data collected. In total, 451 applicants who met the eligibility criteria were identified during the registration process. Table 3 presents the applicants distribution broken down by treatment status for the entire sample. There were no instances of "always-takers/non-compliers" as no controls were able to enroll post-randomization. However, about 12% of those

¹³ The program administrator sent the names and identification numbers of the applicants, and the researchers conducted the randomization based on a standard random number generator corresponding to the total size of the proposed study sample, with equal probability of inclusion and exclusion. The researcher assigning the random numbers was not aware of beneficiary's names. The random numbers generated were then re-matched to the beneficiary names, and the names randomly selected out and selected in were communicated to the program administrators.

¹⁴ Administrators identified individuals who would have to be offered the program based on need, as well as those who were particularly high achievers (high-scoring individuals) from poor SES. In specific instances when siblings applied to the program and excluding one might result in resentment. These were deemed "pre-selected" applicants.

¹⁵ However, this strategy produced significant frustration on the part of the control group, and was eventually dropped. Indeed, most of the problems with data collection were derived from the ill-will generated when controls found that they would not be eligible to apply in the future. This could produce negative John Henry effects, and therefore was discontinued for data collected after the first cohort.

¹⁶ The 1st cohort started on April 2012, the 2nd cohort on June 2012, and the 3rd cohort on July 2012.

originally assigned to the treatment group were “never-takers/non-compliers”, as they failed to show up for the training. This number was actually similar to the percentage of *pre-selected* (who did not participate in the lottery and were excluded from the study).

Table 3: Classification youth according to treatment status

	Selected in the Lottery	Not selected in the Lottery	Pre- Selected	Total
Participate in the program	173	0	24	197
Did not participate in the program	21	230	3	254
Total	194	230	27	451

Source: Administrative data

The cohort structure, along with the timing at which the surveys were fielded, incidentally produced variation in the time since program completion for different cohorts. This feature was exploited to compare the results of cohort with different *post-program periods*. Since follow-up data were collected at different points in time for each of the three cohorts, and since the different cohorts finished the program at different points in time, the time elapsed since program termination and follow-up collection was significantly different across cohorts, with 1-2 months having elapsed for cohort 1, 2-3 months having elapsed for cohort 3, and 4-5 months having elapsed for cohort 2¹⁷.

Tables 5 and 6 present balancing results on characteristics at baseline – i.e. at random assignment on socio-demographic covariates (Table 5) and on social activities and life skills (Table 6). In both tables we first present means for the treatment and control groups (columns 1 and 2) and corresponding t-tests on differences-in-means (columns 3 and 4) to assess balancing. The treatment and control groups reported in these columns are youths for which data at both the baseline and at follow-up are available.

D. Data Collection

This paper reports on the short-term effects of the program. That is, the effects of the program that can be measured with the first follow-up survey, which was fielded between 2 and 4 months after program termination, depending on the program cohort. In the case of the 2nd cohort the period between the data collection and the end of the training was the longest.

¹⁷ The month ranges reflect the fact that field work was typically done over a four week period, so even within a cohort, some participants will have been interviewed before others.

The baseline data was collected between June and October 2012, and includes 380 individuals, 162 in the treatment group, 195 in the control group, and 23 non-randomly assigned (*pre-selected*). The Brazilian firm *Overview Pesquisa* carried out the surveys implementing interview protocols for high violent crime areas, which required multiple visits to the same neighborhoods¹⁸. The vast majority of interviews were face-to-face at their households. In a small percentage of cases (8%), surveys were administrated in different locations¹⁹. Furthermore, in order to minimize the non-response rate, the survey firm offered a monetary incentive to encourage the participants to complete the questionnaire, after three unsuccessful attempts²⁰. This strategy was required mostly for the control group, and mostly from the first cohort. As a result, only 16% of the original group could not be interviewed.

After the completion of the program, a first follow-up survey was conducted. A total of 348 youth²¹ were interviewed in the follow-up survey, which represents 77% of the initial group. This attrition rate is similar to those found in other impact evaluations -with randomized design- of youth training programs in LAC.²²

E. Summary statistics of the baseline data

The first two columns of Tables 5 and 6 present baseline summary statistics for the sample, for both treated and controls. In both tables we first present means for the treatment and control groups (columns 1 and 2) and corresponding t-tests on differences-in-means (columns 3 and 4) to assess balancing. The treatment and control groups reported in these columns are youths for which data at both the baseline and at follow-up are available.

The general picture of the summary statistics indicates that the youths in our sample are on average around 23 years old and predominantly male. Only about 13% are women, which is in line with the type of vocational and technical training offered in the program. The households in which these youths live have an average of about 4 household members. Almost all (97%)

¹⁸ According to *Overview Pesquisa*, in high crime neighborhoods, the hazard rate of potentially dangerous confrontations with neighborhood drug gangs increases rapidly with the time that the survey team remains in the field, as gangs rapidly become aware of their presence. This necessitates frequent short visits to these neighborhoods.

¹⁹ Some youth told the enumerators to avoid visiting their communities altogether for security reasons.

²⁰ Only 6 youth accepted the monetary incentive.

²¹ This number includes 150 youth in the treatment group, 178 in the control, and 20 in the pre-selected group.

²² Entra 21 in Argentina (81.5%), Juventud y Empleo in Dominican Republic (about 80% in the second evaluation), and Jóvenes en Acción in Colombia (81.5%). See Alzua (2012), Ibarra et. al (2012), and Attanasio et. al (2011).

report that they can read and write. They are typically not recipients of social benefits like the *Bolsa Familia* or *Familia Carioca*, although the low frequency (1-2%) may somewhat underestimate the true incidence, since youth who still live at home may be unaware of the recipient status of their mothers or sisters. The majority of youth (85%) have completed secondary education, and the vast majority already worked before. *Galpão* is clearly not targeting the immediate school-to-work transition. The data also shows that the proportion of youth who work with formal contracts (*com carteira assinada*) is also relatively high, at around 70%. Although this is lower than the overall average for youth in the city according to the PME, it is still quite high. Those employed are not high earners, but they are also not among the poorest. The average monthly reported earnings is roughly R\$750. This is above the R\$622 minimum established by federal law (2012), but below the R\$756 established for Rio de Janeiro. Although these are youth from disadvantaged neighborhoods, they are also youth living in one of the wealthiest cities of Brazil, where access to public services is relatively high, and where labor markets have produced improvements in wages and employment over the last few years.

The baseline also identifies specific instances which are typically related to risk factors among youth. The first is the relatively high frequency with which these youth observe violence, or are victims of violence. For instance, roughly a quarter of the youth reported witnessing an incidence of violent crime in the past year, and a full third of them reported witnessing the use of a firearm. Both of these are particularly high. Another 17% reported being the victim of discrimination, and 31 percent report having witnessed some form of violent attack. Other risk factors recorded through the instrument include the use of alcohol, tobacco, and drugs. Half of those interviewed reported the consumption of alcohol in the past week, but only a fifth reported having smoked. There was virtually no reported use of drugs, although it is unclear if youth would have been comfortable reporting this metric given the lack of privacy in the interview context (Aquilino, 1997). XX percent of the youth in the sample also report living in a household with a single mother. On the other hand, in many aspects these youth are very much like others: they attend church (48%), they play sports regularly (70%), and they go out at night (75%).

In this study we use two instruments to measure socio-emotional development: the Grit scale and the Social and Personal Competencies Scale (CPS). The Grit scale measures persistency of effort, enthusiasm about long term goals, consistency of interests, and ambition. The Grit scale is

related to the personality trait of *Conscientiousness* (Duckworth et al, 2007). The CPS was developed by the IDB to measure socio-emotional development in the context of the *Juventud and Empleo* program (Brea, 2010; Ibarraran, 2012). It measures six basic competencies: i) leadership; ii) behavior in situations of conflict; iii) self-esteem; iv) abilities to relate with others; v) order; and, vi) empathy and communication skills (both tests are discussed in Annex 2). The baseline data shows that the youth for the most part do not show particularly extreme values in the tests applied. The median total score on the Grit test is of 34. When normalized according to the standard Grit scale (Duckworth et al, 2007), the average is of 4.25, which is actually relatively high on the scale. The results on the CPS scale are similar. This may be consistent with the hypothesis that the youth attracted to the program may in fact be higher scoring on the personality characteristics of conscientiousness to begin with.

In general, we find that treatment and control groups are relatively well balanced. Columns 3 and 4 of Tables 5 and 6 present the mean differences between treatment and controls for baseline values. The majority of covariates do not display significant differences in mean values. Some covariates, however, do show significant differences: the share of single youth, for instance, is 9 percentage points smaller in the control group (marginally significant) and the household size in the treatment group is significantly larger. More immediately related to the labor market is the significant difference in the age at first job (16.4 vs. 15.6 years of age in the treatment vs. control). While not significant at conventional levels (t-stat of 1.61), the difference in the fraction of youths who are employed in some job is quite large: 69.1% in the control and 60.5% in the treatment group. Similarly, whereas the majority of covariates capturing social activities, risky behavior and life skills are well balanced, some differences are worth noting. In particular, the control group attains significantly higher scores on two subscales of the CPS scale, CPS Conflict and CPS Order, resulting in a marginally significant overall difference in the CPS scale. Taken together, these balancing results might indicate that the control group is marginally better in key pre-treatment outcomes (labor market and life skills) at random assignment. This observation will lead us to implement difference-in-difference methods to estimate program impacts.

The summary statistics from Tables 5 and 6 also show that there are very few differences between those were re-interviewed and those who attrited. The results indicate that the youth in our sample do not systematically differ in observed covariates from those 33 youths that were

not available for follow-up data (see columns 10-13).²³ We also find no evidence that participants assigned to the treatment group attrite differently from those at the control group, suggesting that selection into the sample is not a source of concern. Finally, Tables 5 and 6 show that the pre-selected are similar to those randomly assigned treated, with the exception of a somewhat better performance of the pre-selected in some subscales of the CPS life skills scale (see columns 5-9).

4 PROGRAM RESULTS

Given the results of the balancing analysis in the previous section, which indicate that despite random assignment treatment and control groups may slightly differ in pre-treatment outcomes, for most outcomes we estimate the treatment effect using a difference-in-difference model,

$$Y_{iwt} = A_w + B_t + \beta T_{wt} + \varepsilon_{iwt} ,$$

where Y_{iwt} is the outcome of interest for individual i in wave w (baseline or follow-up) who is exposed to treatment t or not. A_w and B_t are fixed effects for wave and treatment status, and T_{wt} is a dummy variable indicating whether the intervention has affected group t at time w . We estimate the impact of the program using the OLS estimate $\hat{\beta}$.²⁴

D. Labor Market outcomes

There are no overall employment and earnings impacts detected for the full sample, but there are large impacts detected for the second cohort. The dif-in-dif estimator for the full sample shows no differences in the likelihood of working, working for gainful employment, earnings, or the probability of having a formal job. Likewise, when looking at impacts per cohort, there are no impacts detected for cohorts 1 or 3. Results for cohort 2 are quite different. For the second

²³ The majority of covariate averages is not significantly different between followed-up and not-followed-up youths; and while some significant differences in some variables can be seen in Tables 1 and 2, columns 11 and 12, these do not concern key variables and thus do not paint at all a coherent picture of a systematically different group of not-followed-up youths. Rather, the few imbalances seem to be entirely random.

²⁴ Tables 7 through 9 present corresponding estimates $\hat{\beta}$ of the impact of Galpão on a set of outcomes: labor market outcomes (Table 7), social activities and risky behavior (Table 8), and socio-emotional skills (Table 9). Each of the tables first reports impact estimates for the entire sample, and then separately for the cohorts 1, 2, and 3.

cohort we find a significant and large (19.5 percentage points) treatment effect on the probability of having a job. This effect is more pronounced for the probability of having a salaried job (24.3 percentage points, statistically significant). We attribute this result, which is much different from the other cohorts, to the fact that the follow-up interviews for cohort 2 took place later than those for cohorts 1 and 3. While cohorts 1 and 3 were interviewed soon (2 months) after the treatment group finished the program, cohort 2 was interviewed 4 months later. In fact, the available evidence reviewed above clearly shows that classroom training programs tend to have no impacts in the short run (before 6 months). The fact that results are detected within 4 months are, thus, quite surprising. In addition, although the findings for cohorts 1 and 3 are not significant, their sign and magnitude are consistent with a hypothesis of youths increasingly recovering from the short-run *sequestration* effect of the program and beginning to enjoy some of the program's purported positive employability effects. Of course, since the admittedly large and unexpected treatment effect for cohort 2 is estimated off of a relatively small number of individuals (N=93), these results should be confirmed with the full sample of treated individuals, once all of them have had time to recover from the program's short term *sequestration* effects, in the final follow-up survey of November 2013.

Results also stands out from the existing literature in that it does not seem that the program is producing a significant impact on the formality of jobs. Formal employment is perhaps the only dimension where most other rigorously evaluated programs—such as *Juventud and Empleo*, *Jovenes en Acción*, and *Entra21*— have been able to impact, and it is auspicious that early *Gapão* results do not seem to impact formality. A couple of remarks should be made on this. First, as was documented above, the percentage of formal jobs rose particularly fast in Rio from the first half of 2012 to the first half of 2013. And formality was already relatively high in Rio de Janeiro compared to other areas in developing countries; in particular in other places where evaluations of similar programs to youth labor market integration had been conducted. Second, unlike other programs evaluated, *Galpão* does not rely on a subsidized internship with a formal job. To the extent that this temporary internship may become permanent, the proportion of formal jobs may be impacted.

E. Risky behavior outcomes

The results indicate no early impacts on any of the measured risk-related outcomes. The only significant difference is a higher share of youths in the treatment group that reports having been the victim of physical aggression, but given the very low absolute number reported here, this result may be spurious and is likely not related to the program. Three important caveats should be noted. The first is that the selection of individuals into the *Galpão* program explicitly excludes potential youth who display signs of the worst risk factors, such as, for instance, drug use or gang membership. And by selecting students based on test scores, the program is also likely incidentally selecting against high-risk youth. Second, many of the questions asked—particularly those related to availability of a firearm, victimization, and drug use, may encounter validity problems due to well-documented biases, particularly in contexts with limited privacy. And lastly, the timeframe used in the risky behavior outcomes is much longer (the last year) than those used in labor market outcomes (the week before the intervention), so if respondents are answering accurately, they may be recounting experiences that took place before the program.

F. Socio-emotional skills outcomes

Similar to the previous table, we find few significant program impacts on levels of socio-emotional development. The only thing worth mentioning is a significant effect on one of the CPS subscales, CPS 05 = CPS—which measures traits and conducts related to order—indicating that the youth in the treatment group do make up for their lower pre-treatment value (see above) due to the treatment. However, this is the one estimator for which perhaps the dif-in-dif estimator may be inappropriate, given that the baseline for the study was typically done at the beginning of the program. In the case of labor market and risk behavior outcomes, the questionnaire clearly identified the reference week at baseline as the week before the program (labor market). Nevertheless, since the data collected in both Grit and CPS do not depend on recall, but rather on contemporaneous reporting regarding perceptions and values, they will necessarily reflect the state of mind at the time the data was collected (Duckworth et al, 2007). This state of mind, in turn may have been impacted by early participation in the program, in a direction which is not immediately evident. To address this issue, we also estimated the program's impact using a single-difference estimator. That way, if program baseline values were already altered by

participation, this would not contaminate the estimator. However, the results for the single difference estimator are inconclusive.

5 CONCLUSION AND DISCUSSION

This paper contributes to the literature on the role of socio-emotional skills in labor market in a number of different ways.

First, the program provides the first instance of a rigorous evaluation, based on a randomized trial, of an arts-based employment-generation program for at-risk youth. There are no other such evaluations, to the authors' knowledge. As such, the paper provides additional evidence on the toolkit that policy-makers have to address youth employment—or the precarious nature of youth employment. And in this regard the findings are suggestive that the “*Galpão* model” can be an effective alternative to traditional pedagogic approaches to youth training. The early evidence available shows that for youth who have been out of the program for only four months, employment prospects are much improved, as are earnings. The effects are not seen for youth cohorts who have had fewer months since program completion. However, this is consistent with the evidence that shows program effectiveness increasing over time, and indeed showing negative program impacts in the short run, for some studies (Kluve, 2011).

The data also show, somewhat surprisingly, that the program has no impact on the formality of jobs. This is contrary to the evidence on almost all other youth training programs, which show, if anything, limited impacts on earnings and employment, but positive impacts on formality. This may be due to a number of reasons, but two in particular stand out. The first is that the program's context is quite particular. Rio de Janeiro already enjoys relatively high levels of formality, even among youth, and this level rose fast during the evaluation period. And these levels have been increasingly steadily over time. This is a very different kettle of fish from the contexts in the Dominican Republic or Colombia, where the incidence of informality during the years in which their respective programs were evaluated were particularly high. Another possible explanation is in the program structure itself. *Galpão* does not have a structured internship. Perhaps it should. Whereas other programs evaluated relied on a network of firms who received subsidized interns, *Galpão*'s labor intermediation strategy was based on ad hoc alliances with particular private sector actors, but youth were mostly left on their own to find

jobs. This means that other programs automatically placed youth in formal jobs—and at the end of the internship, some would remain, and some would exit. By targeting formal firms with formal jobs to begin with, the labor intermediation strategy may be more effective at generating formality than *Galpão*.

Second, the program contributes to the evidence of the role of socio-emotional skills in the context of labor markets. Unfortunately the program data available thus far would suggest that there is not much going on here. The program by and large does not seem to be impacting beneficiaries' performance on standardized psychological measures of socio-emotional skills. In particular, skills related to conscientiousness, such as perseverance and grit, seem unaltered by the program. This is a surprise, given the program's self-declared model of using these skills as ways of teaching other skills (Portuguese, Mathematics, vocational), and given the overall existing literature on the importance of these skills, including in labor markets. But there are possible explanations. The first story is one of selection. We saw that at baseline program participants actually score high on the Grit scale. This may indicate that the program may be attracting youth who already possess these skills. If so, the role of the skills may actually be to help develop more conventional cognitive skills, such as literacy, numeracy, and other functions which are also taught. This would be consistent with the literature that suggests that early development of skills, such as socio-emotional skills, may facilitate development of cognitive skills later in life: what several authors have termed *dynamic complementarities* in skill formation (Heckman and Carneiro, 2003; Cunha, Heckman, Lochner, Masterov, 2005; Cunha and Heckman, 2006). This would also not be necessarily inconsistent with the evidence that identifies contemporaneous correlations between socio-emotional skills and labor outcomes, since these studies were largely done based on a random sample of all young adults using household survey (Diaz et al. 2012) and not necessarily based on self-selected youth. Nonetheless, anecdotal evidence suggests that *Galpao's* youth present better performance in skills valuable by the labor market compare to their peers (i.e. punctuality, responsibility, dedicated to their work). We intend to examine these types of skills to complement the measures of personality traits in the second follow-up survey.

Third, the paper provides some preliminary evidence on the dynamics of treatment effects over time. And although there are much more complete longitudinal data on this subject (e.g. Caliendo, Künn, Schmidl, 2011), they are in a way always subject to the inescapable critique of

confounding. This is one of the first experimental approaches which provides initial evidence on how the dynamics of treatment evolve over time, particularly for youth-training ALMPs. And here the initial evidence is strongly suggestive that youth may overcome the *sequestration* effect of training early on.

We would be remiss if we did not finalize this paper with one fundamental comment. The first is that this is not an evaluation of a public policy. *Galpão* was, in its early phase, an instrument for public policy, as it was used by municipal authorities as a vehicle for wide-scale youth training for the city. But the fickle nature of that relationship—the partnership was terminated when the City’s government changed— is precisely what forced *Galpão* to adopt a private-sector oriented strategy. Now it is a private initiative that is much more selective in its approach, in its identification of private-sector partners, and even in its targeting of beneficiaries. This very selective nature of the program introduces a complexity in the interpretation of the results. Are employment gains being driven by human capital formation—either in cognitive or socio-emotional skills—or are they driven from the program’s ability to signal “higher quality” youths? The data available do not allow us to test among these two explanations of the program’s impact. Interviews with employers clearly show that they value the program’s quality seal. That *Galpão* youth are more responsible, more driven, more reliable, and possess better technical skills. The most likely scenario is that both are at play, but how much is signaling and how much is skills enhancement, remains unclear.

In this sense, the replicability of *Galpão* to a wider population—such as would be the case in a large-scale public program—is a crapshoot. There are just too many variables which are *sui generis* to the program for us to think that these results would necessarily hold potential for external validity. A broad public training program open to all youth would certainly not be as selective, and as such would not be able to signal *ex ante* quality to potential employers. And to the extent that skills acquired during *Galpão* complement the relatively high levels of cognitive ability recruited, a broader policy may also be unable to deliver comparable results. A large scale program would also likely attract a different type of pedagogical talent than the one *Galpão* attracts. This facet of *Galpão* should be explored; because although it holds much potential for influencing public policy, the degree to which this can in fact transpire will depend on the differential characteristics of both the technology and the populations treated.

REFERENCES

- Almlund, M., Duckworth, A. L., Heckman, J. J., & Kautz, T. D. (2011). Personality Psychology and Economics in Handbook of the Economics of Education, 4: 1-181.
- Anger, S., & Heineck, G. (2010). Cognitive abilities and earnings—first evidence for Germany. Applied Economics Letters, 17(7), 699-702.
- Aquilino, W. S. (1997). Privacy effects on self-reported drug use: interactions with survey mode and respondent characteristics. *NIDA Res Monogr*, 167, 383-415.
- Asbury, C. H., & Rich, B. (Eds.). (2008). Learning, arts, and the brain: The dana consortium report on arts and cognition. Dana Press.
- Attanasio, O., Kugler, A., & Meghir, C. (2011). Subsidizing Vocational Training for Disadvantaged Youth in Colombia: Evidence from a Randomized Trial. American Economic Journal: Applied Economics, 3(3), 188-220.
- Alzua, M. L., Cruces, G, Lopez Erazo, C. (2013). Youth training programs beyond employment. Evidence from a randomized controlled trial. Mimeo.
- Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: a meta-analysis. Personnel psychology, 44(1), 1-26.
- Barros, R. P., Carvalho, M.; Franco, S. (2007). O papel das transferências públicas na queda recente da desigualdade de renda brasileira. In: Barros, R. P.; Foguel, M. N.; Ulyseia, G., Eds. Desigualdade de renda no Brasil: uma análise da queda recente. Brasília: Ipea, p. 41-86. v. 2.
- Bassi, M. and S. Galiani. (2009). Labor Market Insertion of Young Adults in Chile. Inter-American Development Bank, unpublished manuscript.
- Behrman, J. R., Ross, D., & Sabot, R. (2008). Improving quality versus increasing the quantity of schooling: Estimates of rates of return from rural Pakistan. Journal of Development Economics, 85(1), 94-104.
- Blackburn, M. L., & Neumark, D. (1993). Omitted-Ability Bias and the Increase in the Return to Schooling. Journal of Labor Economics, 11(3), 521-44.
- Bowen, W. G., Chingos, M. M., & McPherson, M. S. (2009). Crossing the finish line: Completing College at America's public universities. Princeton University Press.
- Brea, Mayra, 2010. Interpretación de las Escalas CPS, Rosenberg y Grit y Propuestas de Revisión para Mejorar la Confiabilidad (Document prepared for the World Bank).

- Brunello, G. & Schlotter, M. Non Cognitive Skills and Personality Traits: Labour Market Relevance and their Development in Education and Training Systems (2011). IZA DP 5743.
- Caliendo, M., Künn, S., & Schmidl, R. (2011). Fighting youth unemployment: The effects of active labor market policies.
- Calvó-Armengol, A., & Zenou, Y. (2005). Job matching, social network and word-of-mouth communication. Journal of Urban Economics, 57(3), 500-522.
- Card, D., Ibararán, P., Regalia, F., Rosas-Shady, D., & Soares, Y. (2011). The Labor Market Impacts of Youth Training in the Dominican Republic. Journal of Labor Economics, 29(2), 267-300.
- Card, D., Kluve, J., & Weber, A. (2010). Active Labour Market Policy Evaluations: A Meta-Analysis. The Economic Journal, 120(548), F452-F477.
- Choudhry, M. T., Marelli, E., & Signorelli, M. (2012). Youth unemployment rate and impact of financial crises. International journal of manpower, 33(1), 76-95.
- Corseuil, C. H. L., Foguel, M. N., Gonzaga, G., & Ribeiro, E. P. (2013a). Youth labor market in Brazil through the lens of the flow approach. Mimeo.
- Corseuil, C. H. L., Foguel, M. N., & Gonzaga, G. (2013b). The Effects of an Apprenticeship Program on Wages and Employability of Youths in Brazil.
- Costa, P. T., & McCrae, R. R. (1988). Personality in adulthood: a six-year longitudinal study of self-reports and spouse ratings on the NEO Personality Inventory. Journal of personality and social Psychology, 54(5), 853.
- Cawley, J., Conneely, K., Heckman, J., Vytlačil, E. (1996) Measuring the Effects of Cognitive Ability. NBER Working Paper 5645.
- Cunha, F., & Heckman, J. J. (2008). Formulating, identifying and estimating the technology of cognitive and noncognitive skill formation. Journal of Human Resources, 43(4), 738-782.
- Cunha, F., Heckman, J. J., & Schennach, S. M. (2010). Estimating the technology of cognitive and noncognitive skill formation. Econometrica, 78(3), 883-931.
- Cunningham, W., & Salvagno, J. B. (2011). Youth employment transitions in Latin America. World Bank Policy Research Working Paper Series 5521.
- Díaz, J. J., Arias, O., & Tudela, D. V. (2012). Does Perseverance Pay as Much as Being Smart?: The Returns to Cognitive and Non-cognitive Skills in urban Peru.
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: perseverance and passion for long-term goals. Journal of Personality and Social Psychology, 92(6), 1087.

- Dunifon, R., & Duncan, G. J. (1998). Long-run effects of motivation on labor-market success. Social Psychology Quarterly, 33-48.
- Fletcher, J. (2012). The Effects of Personality Traits on Adult Labor Market Outcomes: Evidence from Siblings. IZA DP No. 6391
- Gallo, W. T., Endrass, J., Bradley, E. H., Hell, D., & Kasl, S. V. (2003). The influence of internal control on the employment status of German workers. Schmollers Jahrbuch, 123(1), 71-81.
- Gonzaga, G. (2003). Labor Turnover and Labor Legislation in Brazil, Economía: Journal of the Latin American and Caribbean Economics Association. 4(1): 165-207.
- Green, D. A., & Craig Riddell, W. (2003). Literacy and earnings: an investigation of the interaction of cognitive and unobserved skills in earnings generation. Labour Economics, 10(2), 165-184.
- Groves, M. O. (2005). How important is your personality? Labor market returns to personality for women in the US and UK. Journal of Economic Psychology, 26(6), 827-841.
- Hallam, S. (2010). The power of music: its impact on the intellectual, social and personal development of children and young people. International Journal of Music Education, 28(3), 269-289.
- Hanushek, E. A., & Woessmann, L. (2008). The role of cognitive skills in economic development. Journal of economic Literature, 607-668.
- Heckman, J. J., & Rubinstein, Y. (2001). The importance of noncognitive skills: Lessons from the GED testing program. The American Economic Review, 91(2), 145-149.
- Heckman, J. J., & Masterov, D. V. (2007). The productivity argument for investing in young children. Applied Economic Perspectives and Policy, 29(3), 446-493.
- Heckman, J. J., Stixrud, J., & Urzua, S. (2006). The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior. Journal of Labor Economics, 24(3), 411-482.
- Heckman, J. J. (2011). Integrating personality psychology into economics (No. w17378). National Bureau of Economic Research.
- Heckman, J. J., & Kautz, T. (2012). Hard evidence on soft skills. Labour Economics, 19(4), 451-464.
- Heckman, J. J., Stixrud, J., & Urzua, S. (2006). The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior. Journal of Labor Economics, 24(3), 411-482.

- Heckman, J. J., Humphries, J. E., Urzua, S., & Veramendi, G. (2011). The effects of educational choices on labor market, health, and social outcomes. Unpublished manuscript, University of Chicago, Department of Economics.
- Heineck, G., & Anger, S. (2010). The returns to cognitive abilities and personality traits in Germany. Labour Economics, 17(3), 535-546.
- Hoffman, R. (2009). Desigualdade da distribuição da renda no Brasil: a contribuição de aposentadorias e pensões e de outras parcelas do rendimento domiciliar per capita. Economia e Sociedade, v. 18: 213-231.
- Ibarraran, P., Ripani, L., Taboada, B., Villa, J. M., & García, B. (2012). Life skills, employability and training for disadvantaged youth: Evidence from a randomized evaluation design. IDB WP.
- Kluve, J. (2010). The effectiveness of European active labor market programs. Labour Economics, 17(6), 904-918.
- Kramarz, F., & Skans, O. (2011). When strong ties are strong: networks and youth labor market entry (No. 2011: 18). Uppsala University, Department of Economics.
- Lustig, N, Lopez-Calva, L.F., & Ortiz-Juarez, E. (2013). Deconstructing the Decline in Inequality in Latin America. Tulane WP 1314.
- Mueller, G., & Plug, E. (2006). Estimating the effect of personality on male and female earnings. Industrial and Labor Relations Review, 3-22.
- Murnane, R. J., Willett, J. B., & Levy, F. (1995). The Growing Importance of Cognitive Skills in Wage Determination. The Review of Economics and Statistics, (2): 251-266.
- O'Connell, M., & Sheikh, H. (2007). Growth in career earnings and the role of achievement-related traits. Journal of Economic Psychology, 28(5), 590-605.
- Oliveira, A. M. and Rios-Neto, E. (2007) Uma avaliação experimental dos impactos da política de qualificação profissional no Brasil. Revista Brasileira de Economia, 61(3): 353-378.
- Ozer, D. J., & Benet-Martinez, V. (2006). Personality and the prediction of consequential outcomes. Annu. Rev. Psychol., 57, 401-421.
- Posner, M. I., & Patoine, B. (2009). How arts training improves attention and cognition. Cerebrum, 2-4.
- Puentes, Esteban, & Urzua, Sergio (2010). La evidencia del impacto de los programas de capacitación en el desempeño en el mercado laboral. IDB DP 268.

- Quintini, G., Martin, J., & Martin, S. (2007). The changing nature of the school-to-work transition process in OECD countries. WDA-HSG Discussion Paper, (2007-2).
- Schellenberg, E. G. (2004). Music lessons enhance IQ. Psychological Science, 15(8), 511-514.
- Schellenberg, E. G. (2011). Examining the association between music lessons and intelligence. British Journal of Psychology, 102(3), 283-302.
- Schmidt, F. L., & Hunter, J. (2004). General mental ability in the world of work: occupational attainment and job performance. Journal of personality and social psychology, 86(1), 162.
- Soares, S. et al. (2010). Os impactos do benefício do Programa Bolsa Família sobre a desigualdade e a pobreza. In: Castro, J. A. and Modesto, L., Eds. Bolsa Família 2003-2010: avanços e desafios. Brasília: Ipea, 2010. v. 2, p. 366.
- Stuckey, H. L., & Nobel, J. (2010). The connection between art, healing, and public health: A review of current literature. American Journal of Public Health, 100(2), 254-263.
- Verick, S. (2011). Who is Hit Hardest during a Financial Crisis? The Vulnerability of Young Men and Women to Unemployment in an Economic Downturn, in From the Great Recession to Labour Market Recovery: Issues, Evidence and Policy Options, ed. by I. Islam, and S. Verick. ILO/Palgrave Macmillan.
- Wahba, J. & Zenou Y. (2005) Density, social networks and job search methods: Theory and application to Egypt. Journal of Development Economic, 78: 443-473.
- Wright, P. R. (2006). Drama education and development of self: Myth or reality?. Social psychology of education, 9(1), 43-65.

Table 4. Probability of continuing in the follow-up survey

	All	All
Treatment	-0.0007 (-0.0409)	0.0142 (-0.0382)
Baseline characteristics	No	Yes
<i>Test of joint significance</i>		F-Test= 0.47 p-value= 0.8574
Observations	424	263

Note: The baseline characteristics include age, gender, marital status, secondary education, job, and salaried job. Standar errors are reported in parantheses.* Statistical significance at 10% level; ** Statistical significance at 5% level; *** Statistical significance at 1% level.

Table 5: Covariate Balancing – Sociodemographic characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Treated	Control	Mean diff. Treat vs. Control	T-Value	Preselected	Mean diff. Treat vs. Preselected	T-Value	Mean diff. Treat incl. Preselected vs. Control	T-Value	Not in follow- up	Mean diff. Followed-up vs. Not in follow- up	T-Value	N
Age	22.78	23.20	-0.42	-0.94	22.26	0.52	0.52	-0.48	-1.11	23.55	-0.58	-0.80	377
Fract. Females	12.90	14.60	-1.70	-0.44	5.26	7.64	0.96	-2.56	-0.70	3.03	10.30	1.72	377
Fract. Single	78.20	69.10	9.10	1.85	84.20	-6.00	-0.60	9.81	2.08	69.70	4.14	0.51	377
Fract. Lives with father	36.70	31.50	5.20	1.00	47.40	-10.70	-0.90	6.49	1.26	33.30	1.26	0.15	377
Fract. Lives with mother	41.50	37.10	4.40	0.81	63.20	-21.70	-1.80	6.90	1.30	45.50	-5.05	-0.56	377
Fract. Familia Carioca benefit	1.36	1.12	0.24	0.19	5.26	-3.90	-1.20	0.68	0.53	0.00	1.45	0.70	377
Fract. Bolsa Familia benefit	1.22	1.18	0.04	0.12	10.50	-9.28	0.22	0.25	0.07	9.09	2.83	0.48	377
Fract. No social benefit	87.10	88.20	-1.10	-0.31	84.20	2.90	0.34	-1.46	-0.41	90.90	-3.41	-0.57	377
Household Size	3.98	3.57	0.41	2.24	3.53	0.45	1.11	0.36	2.05	3.33	0.41	1.39	377
Household Income	1719.50	1560.30	159.20	1.17	1383.20	336.30	1.13	120.70	0.91	1758.70	-140.20	-0.64	377
Fract. Literate persons in HH	97.40	96.70	0.70	0.69	100.00	-2.60	-1.28	1.03	1.03	97.10	0.05	0.03	377
Monthly Rent	317.40	331.80	-14.40	-0.51	345.00	-27.60	-0.30	-12.47	-0.45	503.80	-176.60	-4.15	90
Fract. Official int. water access	73.50	67.40	6.10	1.19	78.90	-5.40	-0.51	6.68	1.36	81.80	-11.20	-1.36	377
Fract. Pay Water	49.00	40.40	8.60	1.54	36.80	12.20	0.99	7.14	1.33	51.50	-7.62	-0.84	377
Fract. Ever worked	93.20	94.90	-1.70	-0.67	84.20	9.00	1.37	-2.78	-1.05	100.00	-6.40	-1.50	377
Age at first job	16.36	15.59	0.77	2.24	15.88	0.48	0.65	0.72	2.16	16.00	-0.07	-0.13	355
Fract. Employed	60.50	69.10	-8.60	-1.61	42.10	18.40	1.54	-10.70	-2.07	69.70	-5.74	-0.66	377
Fract. Unemployed	17.70	16.30	1.40	0.33	10.50	7.20	0.78	0.58	0.14	21.20	-4.64	-0.68	377
Monthly labor income	744.00	760.50	-16.50	-0.34	721.30	22.70	0.23	-19.11	-0.41	858.30	-106.10	-1.42	216
Weekly hours worked	41.97	42.75	-0.78	-0.39	42.40	-0.43	-0.08	-0.73	-0.35	42.10	0.33	0.10	218
Fract. Formal Contract	69.50	71.40	-1.90	-0.25	75.00	-5.50	-0.31	-1.28	-0.17	58.80	12.00	1.02	168
Contribution Share	2.33	2.49	-0.16	-0.89	2.22	0.11	0.26	-0.17	-0.99	2.21	0.20	0.73	203
Fract. Secondary Education	84.80	87.10	-2.30	-0.53	92.90	-8.10	-0.81	-1.43	-0.33	89.30	-2.80	-0.41	287
N	147	178			19					33	344		

Table 6: Covariate Balancing – Social Activities, Risky behavior and life skills

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Treated	Control	Mean diff. Treated vs. Control	T-Value	Preselected	Mean diff. Treated vs. Preselected	T-Value	Mean diff. Treated incl. Preselected vs. Control	T-Value	Not in follow- up	Mean diff. Followed-up vs. Not in follow- up	T-Value	N
Fract. Party	74.80	71.30	3.50	0.70	57.90	16.90	1.56	1.54	0.32	81.80	-9.73	-1.20	377
Fract. Volunteering	27.20	28.10	-0.90	-0.18	31.60	-4.40	-0.40	-0.38	-0.08	27.30	0.63	0.08	377
Fract. Sports	69.40	62.40	7.00	1.33	73.70	-4.30	-0.38	7.52	1.47	60.60	5.38	0.62	377
Fract. Church	48.30	51.70	-3.40	-0.61	47.40	0.90	0.08	-3.49	-0.65	45.50	4.55	0.50	377
Fract. Ever smoked	19.00	24.70	-5.70	-1.22	36.80	-17.80	-1.80	-3.63	-0.80	45.50	-22.50	-2.88	377
Fract. Last week alcohol	52.60	59.30	-6.70	-0.70	50.00	2.60	0.14	-6.95	-0.76	46.20	9.31	0.64	132
Fract. Witnessed firearms last year	37.40	36.50	0.90	0.17	36.80	0.60	0.05	0.83	0.16	51.50	-14.60	-1.65	377
Fract. Witness phys. attack last year	30.80	25.80	5.00	0.99	15.80	15.00	1.36	3.25	0.67	33.30	-5.93	-0.72	376
Fract. Victim: discrimination	17.00	19.10	-2.10	-0.49	10.50	6.50	0.72	-2.84	-0.69	30.30	-12.60	-1.77	377
Fract. Victim: threatened	0.68	3.93	-3.25	-1.89	0.00	0.68	0.36	-3.33	-2.05	6.06	-3.74	-1.27	377
CPS Total	94.06	96.28	-2.22	-1.74	97.95	-3.88	-1.35	-1.77	-1.44	93.82	1.61	0.76	377
CPS Leadership	13.90	14.16	-0.26	-0.79	15.32	-1.41	-2.01	-0.09	-0.30	13.42	0.69	1.31	377
CPS Conflict	20.03	21.18	-1.15	-2.88	21.89	-1.86	-2.16	-0.93	-2.40	21.52	-0.79	-1.15	377
CPS Selfesteem	8.91	8.84	0.07	0.38	8.63	0.27	0.70	0.04	0.21	8.39	0.46	1.59	377
CPS Relate	10.83	10.99	-0.16	-0.70	11.11	-0.28	-0.53	-0.13	-0.57	10.21	0.72	1.88	377
CPS Order	12.34	13.10	-0.76	-2.66	13.63	-1.29	-1.99	-0.61	-2.20	12.61	0.20	0.42	377
CPS Empathy	27.45	27.43	0.02	0.05	26.89	0.55	0.57	-0.04	-0.09	26.97	0.44	0.59	377
Grit Total	54.44	54.96	-0.52	-0.83	55.58	-1.14	-0.85	-0.39	-0.64	54.48	0.29	0.28	377
Grit Short	34.73	34.96	-0.23	-0.58	36.00	-1.27	-1.51	-0.08	-0.21	35.06	-0.14	-0.22	377
Grit Consistency of Interest	11.76	11.78	-0.01	-0.04	11.89	-0.13	-0.21	0.00	0.01	11.88	-0.10	-0.20	377
Grit Perseverance	26.56	26.74	-0.18	-0.60	27.37	-0.81	-1.24	-0.09	-0.29	27.03	-0.34	-0.69	377
Grit Ambition	17.89	18.04	-0.15	-0.63	18.16	-0.27	-0.53	-0.12	-0.52	18.09	-0.11	-0.28	377
N	147	178			19					33	344		

Table 7: Estimated impact of “Galpao Aplauso” on labor market outcomes (dif-in-dif), by post-program elapsed time

	Entire Sample			1-2 months post-program (cohort 1)			2-3 months post-program (cohort 3)			4-5 months post-program (cohort 2)		
Dependent Variable	Treatment Effect	t-value	N	Treatment Effect	t-value	N	Treatment Effect	t-value	N	Treatment Effect	t-value	N
Attends school	-0.062	-1.48	344	-0.029	-0.56	191	-0.034	-0.31	60	<i>-0.168</i>	<i>-1.77</i>	93
Last week job	0.023	0.39	344	-0.07	-0.85	191	-0.047	-0.33	60	0.195	1.95	93
Last week salaried job	0.045	0.71	344	-0.05	-0.56	191	-0.068	-0.46	60	0.243	2.35	93
Monthly labor income	34.986	0.65	278	-86.724	-1.28	150	242.022	1.55	48	146.049	1.54	80
Formal Contract	-0.039	-0.45	249	-0.121	-0.98	134	-0.02	-0.09	42	0.014	0.10	73
Indefinite Contract	-0.071	-1.15	344	-0.125	-1.48	191	-0.071	-0.5	60	0.062	0.48	93
Weekly hours	-15.253	-0.40	307	2.678	0.78	154	180.296	1.54	60	-92.943	-1.14	93
Contribution Share	0.05	0.26	265	-0.046	-0.19	141	0.569	0.97	45	-0.036	-0.10	79
Main Exp.: Study	0.012	0.58	344	0.021	0.81	191	-0.061	-1.43	60	0.061	1.12	93
Main Exp.: Save	0.026	0.63	344	-0.035	-0.62	191	0.024	0.25	60	<i>0.138</i>	<i>1.80</i>	93
Main Exp.: Party	0.038	0.78	344	0.108	1.64	191	-0.158	-1.37	60	0.027	0.29	93
Main Exp.: Technology	0.018	1.37	344	0.021	1.40	191	0	0	60	0.03	0.79	93
Main Exp.: Clothes	0.039	0.74	344	0.014	0.18	191	0.037	0.34	60	0.003	0.04	93

Note: Table entries on “Treatment effect” are DID estimates of the ATET. The treatment group includes the “pre-selected” youths. The regression does not include additional covariates.

Table 8: Estimated impact of “Galpao Aplauso” on social activities and risky behavior

	Entire Sample			Cohort 1			Cohort 2			Cohort 3		
Dependent Variable	Treatment Effect	t-value	N	Treatment Effect	t-value	N	Treatment Effect	t-value	N	Treatment Effect	t-value	N
Party	0.074	1.33	344	0.134	1.82	191	-0.068	-0.60	93	0.02	0.15	60
Volunteer	0.013	0.26	344	0.013	0.19	191	0.006	0.06	93	0.061	0.51	60
Meet friends	0.619	1.03	344	0.015	0.23	191	2.936	0.98	93	0.098	0.87	60
Sports	0.072	1.40	344	0.039	0.57	191	0.127	1.11	93	0.141	1.23	60
Church	-0.031	-0.53	344	-0.15	-1.92	191	0.012	0.10	93	0.246	1.88	60
Help at event	0.064	1.14	344	0.02	0.27	191	0.083	0.67	93	0.172	1.44	60
Museum	0.036	1.02	344	0.055	1.17	191	0.014	0.22	93	0.037	0.35	60
Ever smoked	0.039	0.95	344	0.033	0.70	191	0.041	0.43	93	0.125	1.12	60
Last week nr cigarettes	0.008	0.03	112	-0.222	-0.60	56	-0.008	-0.02	37	0.886	1.07	19
Last week alcohol	0.007	0.14	344	0.06	0.94	191	0.061	0.50	93	-0.215	-1.74	60
Last week many drinks	0.03	0.24	156	-0.118	-0.74	84	0.125	0.48	45	0.391	1.36	27
Last month fight	0.017	0.87	344	0.026	0.77	191	0	0	93	0.037	0.99	60
Witness firearms last year	0.096	1.76	344	0.114	1.60	191	0.089	0.80	93	0.03	0.19	60
Witness phys. Attack last year	0.038	0.67	344	0.113	1.44	191	0	0	93	-0.054	-0.43	60
Victim discrimination	0.074	1.43	344	0.044	0.62	191	0.114	1.13	93	0.128	0.95	60
Victim beaten	0.068	2.53	344	0.085	1.94	191	0.08	1.93	93	0.037	0.99	60
Victim threatened with arms	0.023	1.07	344	0.047	1.49	191	0.014	0.32	93	0	0	60

Note: Table entries on “Treatment effect” are DID estimates of the ATET. The treatment group includes the “pre-selected” youths. The regression does not include additional covariates.

Table 9: Estimated impact of “Galpao Aplauso” on life skills outcomes

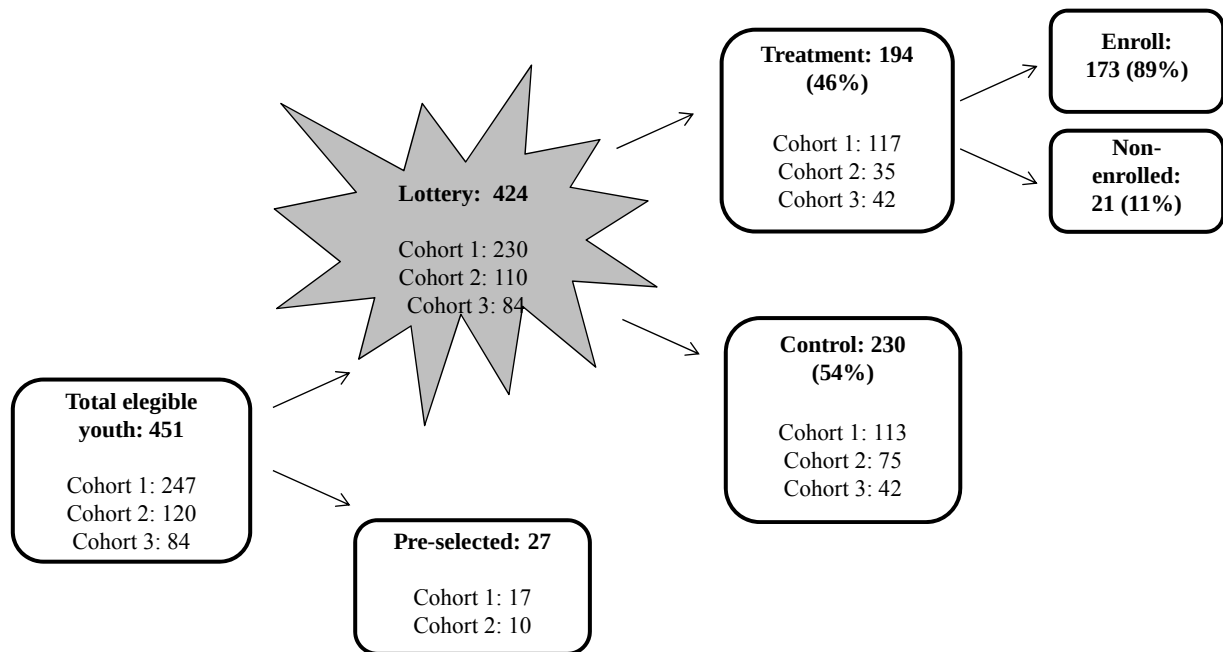
	Entire Sample		Cohort 1		Cohort 2		Cohort 3	
Dependent Variable	Treatment Effect	t-value	Treatment Effect	t-value	Treatment Effect	t-value	Treatment Effect	t-value
CPS Total	1.017	0.71	0.892	0.47	-0.143	-0.05	1.635	0.47
CPS 01	0.179	0.48	0.141	0.27	-0.115	-0.15	0.229	0.32
CPS 02	0.545	1.19	0.736	1.27	-0.15	-0.18	-0.599	-0.56
CPS 03	-0.043	-0.21	0.021	0.07	-0.621	-1.54	0.448	0.86
CPS 04	0.242	0.82	0.196	0.49	0.395	0.72	-0.067	-0.09
CPS 05	0.6	1.78	0.282	0.61	0.054	0.09	1.47	1.81
CPS 06	-0.512	-0.98	-0.527	-0.78	0.077	0.09	0.519	0.37
Grit Total	-0.278	-0.41	-0.449	-0.49	-1.829	-1.54	1.37	0.85
Grit Short	-0.004	-0.01	-0.042	-0.07	-1.659	-1.72	1.754	1.51
Grit 01	-0.564	-1.68	-0.923	-1.96	0.102	0.17	-0.481	-0.68
Grit 02	0.124	0.35	0.057	0.12	-0.53	-0.78	0.801	1.01
Grit 03	0.134	-0.46	0.286	0.73	-0.579	-1.03	0.138	0.19
N	344		191		93		60	

Note: Table entries on “Treatment effect” are DID estimates of the ATET. The treatment group includes the “pre-selected” youths. The regression does not include additional covariates.

Annex 1. Baseline and Follow-Up Surveys status by treatment groups

	Baseline				Follow-up			
	Entire-sample	1 st Cohort	2 nd Cohort	3 rd Cohort	Entire-sample	1 st Cohort	2 nd Cohort	3 rd Cohort
<i>Treatment</i>								
Yes	162	101	29	32	150	96	26	28
No	32	16	6	10	12	5	3	4
<i>Control</i>								
Yes	195	93	67	35	178	85	60	33
No	35	20	8	7	17	8	7	2
<i>Pre-selected</i>								
Yes	23	14	9		20	13	7	
No	4	3	1		3	1	2	
Total								
Yes	380	208	105	67	348	194	93	61
No	71	39	15	17	32	14	12	6

Figure 1. Experimental design



Annex 2. Non-cognitive measures

1.1.Social and Personal Competencies Scale²⁵

The Social and Personal Competencies Scale (CPS for its Spanish acronym - *Escala de Competencias Personales y Sociales*) was developed in 2010. It was designed to measure the effectiveness of the life skills module of the youth training program *Juventud y Empleo*, at Dominican Republican, in developing positive attitudes and values. For this study, the test was translated from Spanish to Portuguese and locally adapted by a group of experts.

The scale measures six basic competencies: i) leadership; ii) behavior in situations of conflict; iii) self-esteem; iv) abilities to relate with others; v) order; and, vi) empathy and communication skills. It contains 44 statements to which respondents are asked to strongly agree, agree, disagree, or strongly disagree. These responses are used to generate a general score and a specific score for each of the dimensions. A higher score reflects a higher level of development in the social and personal competencies.

1.2.Grit Scale²⁶

The Grit scale was created in 2007 and later revised in 2009. Grit is defined as “perseverance and passion for long-term goals. Grit entails working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity and plateaus in progress” (Duckworth et al. 2007: 1087). This scale, designed for adolescents and adults, measures persistency of effort, enthusiasm about long term goals, consistency of interests, and ambition.

As the CPS, it is a self-report test. The respondent rate his/herself on a series of items²⁷ using a 5 point scale where 1 refers to “disagree strongly” and 5 to “agree strongly”. It is a short test that should take between one to four minutes to answer. Higher scores on the scale are associated with higher levels of motivation and determination over years despite failure or adversity.

According to its authors, the scale was originally developed to evaluate individual differences rather than with-in individual changes in behavior over time. Thus, caution is required when the scale is used to assess pre to post changes as a consequence of an intervention.

²⁵ Brea 2010, Ibarraran et al. 2012.

²⁶ Duckworth et al. 2007, Brea 2010

²⁷ In the literature, there are some available versions of the test (10, 12 and 17 questions). In this study we used the 13-item scale.