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The impact of entrepreneurship training on graduate unemployment: Evidence from a randomized field experiment

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Content

1.Introduction

In the context of labour market issues, unemployment rates constitute, undoubtedly a major concern, especially under an economic and financial crisis situation, such as the currently faced by many European countries, since 2008.

Since the early 1980's that labour market policies are a constant issue in order to alleviate unemployment rates, improve social inclusion and reinsertion in labour market. David Card et al. (1988) provides one of the first contributions concerning the measurement of the effects of labour market policies in raising employment rates. The study analysed a sample of adult male participants on the Comprehensive Employment and Training Act (CETA) program in 1976. The main findings suggested there was a significant and positive impact of this training program, regarding the probability of being employed, after three years of the intervention.

Nowadays, stimulating entrepreneurship through active labour market policies is widely recognized as manner of combating unemployment and improving innovation and job creation.

The primary role of the present research is to infer whether a entrepreneurship training contributes to employment, full-employment and self-employment rates of targeted individuals. It will include as well measures of networking abilities, job searching strategies, confidence levels and the acquisition of managerial and entrepreneurial skills by unemployed in Portugal. In particular, the scope of analysis will be focused on the emerging reality of the Portuguese unemployed people with graduate degrees, despite remaining unemployed for an uncertain length of time and in what extent entrepreneurship training programmes contribute to reduce the unemployment rates among the participants and to engage them on creating their own businesses. Nevertheless, more than merely analysing the impact of training on employment or self-employment likelihoods, this intervention aims at understanding if individuals who benefited by the program change positively their behaviour relative to networking and job offers applications, due precisely to that participation. In order to infer the effects of training program, a randomized field experiment was conducted. The training program consisted of a partnership between Nova School of Business and Economics and Institute for Employment and Vocational Training (IEFP), one of the main Portuguese institutions promoting active labour market policies and reintegrating the unemployed in labour market.

This approach seems an urgent and relevant issue, in the sense that, there are enough resources, whose qualifications and education levels are raising, but they are left behind, once they are not integrated in the labour market, compromising, not only the recovery of government's investment costs, but also the future of regeneration of active population and respective funding of general public expenses. That is, in the long-term, unemployed people might not have sufficiently secured well-paid jobs, eligible for pension rights and/or to contribute to other private schemes, which constitutes a major problem given the ageing population and low fertility rates. Lastly, this situation causes a huge and afflicting waste of human resources.

Thus, the acknowledge of the best labour policies to mitigate structural unemployment, to correspond to unemployed needs and characteristics and to enhance a better match between labour's supply and demand is determinant on current days. This necessity, at the moment, is not only applied for low-skilled workers, but also, in an increasing rate, to high-skilled workers. These last ones are in general much less targeted to training programs than the low-skilled individuals. Most of active labour market policies are developed and provided to the most disadvantaged groups who face the greatest barriers and incentives to become employed. Therefore, a research gap in what respects the best labour market policies concerning this particular group of unemployed still remains to explore.

The remainder of this study develops as follows: the next session provides an overview of the evolution and types of unemployment rates in European and Portuguese context and existing active labour market policies aimed at mitigating them and reintegrating unemployed in the labour force, section 3 includes an empirical overview of the main group of measures to mitigate unemployment rates from labour reforms to entrepreneurship training, section 4 provides a complete explanation about the experimental design and associated methodology of this research, session 5 presents the results of the intervention on major outcomes of interest, session 6 includes the heterogeneous effects of this intervention, section 7 offers a discussion of some study's results, limitations of the study and implications for future research and practice and session 8 concludes.

2. Labour Market and Unemployment Rates in Context

This section aims at providing an overview about the main features of the European and Portuguese Labour market and unemployment rates with particular incidence from 2008 onwards, after the emergence of the economic and financial crisis which has caused an impact on its performance. Also a description of the main European and Portuguese active labour market policies and principal institutions on their implementation are presented in this section.

2.1. Unemployment in European context

Unemployment rates in Europe have been displaying huge increases since the emergence of the economic and financial crisis, revealing as well high discrepancies among member States, due to different economic structures and flexibility of labour market. According to Eurostat (2014), the unemployment rate between the first quarter of 2008 and the second quarter of 2010 achieved 7 million individuals, which represented 9.7%. From 2011 to 2013, the EU-28 unemployment rate registered further increments, peaked at 26.5 million (10.8%). Among Euro-area members, the unemployment rate reached in 2013 19.2 million individuals. The largest increases in unemployment rates within member States between 2012 and 2013 were verified in Cyprus, Greece, Italy, Netherlands, Spain, Croatia and Slovenia; the increases below one percentage point were verified, among others, in Portugal, Poland, Finland and France. At 27.5% in 2013, Greece remains the member state with the highest unemployment rate.

Another relevant concern in the context of unemployment rates is the expressivity of long term unemployment rates that is intrinsically related with labour market structures and policies. Besides its financial and social effects on personal life, long-term unemployment, not only causes social instability, but also compromises a sustainable economic growth. Overall, in 2013, 5.1% of unemployed individuals had been so for more than one year and 2.9% more than two years. Also, the emergence of underemployment had been revealed as a significant issue, owing to the fact that it does not ensure a long term employability and confidence in the near future. In 2013, the number of individuals in precarious job positions peaked at 9.9 million.

Lastly, but perhaps the overriding need among European members is the youth unemployment rate, which registered in 2013, 23.5%. Young people, as the future potential human capital, is considered an essential asset to foster and ensure sustainable economic prosperity. Concretely, under a negative economic and social framework in Europe, aligned with a raising aged population, the guarantee of a better quality of life of youth, through

growth and creation of long duration jobs remains a primordial challenge in European countries. According to Eurostat (2014), the young population amounts 94 million aged between 15 and 29, which undoubtedly constitutes an important resource. Nevertheless, one have been witnessed an unsustainable increase of youth unemployment, which trend has been raising since the emergence of financial crisis (were particularly high in Greece (58.3 %), Spain (55.5 %), Croatia (50.0 %), Italy (40.0 %), Cyprus (38.9 %), Portugal (38.1 %) and Slovakia (33.7 %)).This evidence clearly harms the exploitation of intrinsic talent and productivity behind young generation specificities and potentialities. For some decades, the educational level of young people have risen substantially, therefore the consequences of unemployment on this population might be more profound, in terms of individual self confidence, loss of early work experience with future repercussions on the subsequent job's seeking, diminishing labour performance, in both participation and earnings.

2.2. European Active Labour Market Policies

The still remaining question to explore is what kind of labour market policies should be conducted in order to diminished the economical and social undesirable impacts of a high and unsustainable unemployment rates that have been emerged due to the economic and financial recession.

The European Union, as stated by European Commission, has been implementing active labour market policies (ALMPs), in order to raise employment opportunities and promote a better congruence between supply and labour's demand. The major focus of ALMPs is on long-term unemployment, given that it is the one which brings more undesirable economical and social consequences. An interesting point is that there exists a negative correlation between the expenditures of ALMPs and the urgency of its application in the member states that present a larger and persistent long-term unemployment rates. In fact, Nordic and Continental countries present the highest levels of expenditures on ALMPs and the lowest persistence rates in unemployment, in contrast, Central, Eastern and South countries display less expenditures on ALMPs and a more persistent unemployment rate. In addition, an increase of expenditures in labour market policies is more likely to reduce unemployment, when compared with passive policies such unemployment benefits.

The improvement regarding effectiveness of labour market policies in Europe, entails, among other relevant measures, the undertake of programmes at an early stage, so that it can prevent the occurrence of long-term unemployment; the need to establish an adequate profile of the participants to infer their specific weaknesses, skill's needs and to allocate them to the most

suitable programme, the targeting of wage subsidies might be run at a small-scale basis, and the existence of appropriate incentives for employers to retain workers after the subsidy's expiration.

The European Commission defines the different ALMPs into several categories, as follows:

- Labour market services **(category 1)**: job-search assistance
- Training **(category 2)**
- Employment incentives **(category 4)**: hiring incentives for firms
- Supported employment and direct jobs **(categories 5&6)**: target particularly long term unemployed, youth or groups facing problems of inclusion and integration in regular labour market.
- Start-ups incentives **(category 7)**.

2.3. Unemployment rates in Portugal and the Portuguese Labour Market

According to ILO (2014 a) while in 2000, Portuguese unemployment rates were below the European average level, currently they are one of the highest among the European Union country members, only after Greece and Spain. Although, already before the incidence of financial crisis, the Portuguese employment scenario was facing a long-term deterioration. From 2000 to 2008, the unemployment rate recorded a gradual upward evolution, at the same time that real earnings and productivity levels lost competiveness due to the raise of competition of emerging economies that produced at lower costs, such as China.

Since 2008 (ILO, 2014 a), one in seven jobs has been lost and the decrease in employment rates became one of the largest among European states (8%). This tendency got deeper after the launch of financial assistance program in 2011 (increase of 4%). In general terms, the crisis context caused a unsustainable raise on youth unemployment, which surpassed 37% (more the double of 2011) in 2013, when also more than 10 million couples were both unemployed in their household (two and half more than in 2011); a decrease of average earnings and minimum wage; a significant reduction on welfare benefits, in which unemployment one is included, resulting in an increase of risk of poverty, namely within households with dependent children and an irreversible trend of emigration and subsequent contraction of the Portuguese population's size. This can be explained, in fact, by the incurred labour market reforms and the substantial decrease on public expenses and investments. However, the increase of public expenditures on the development of active labour market policies or social support devices to mitigate unemployment impacts and promote

employment spells, economic growth and jobs creation is needed, so that in medium-long term, it results in lower unemployment rates and strength job's duration, enabling the recovery of government revenues.

In ILO's geral-director Guy Ryder words,

*"It is simply not realistic to expect a sustainable recovery unless action is take to tackle and address the depressed levels of productive investment as well as youth unemployment, growing child poverty and other trends which are pushing so many talented and young Portuguese people to emigrate or to consider emigration." (*ILO *2014 Portugal: tackling the job crisis in Portugal, p. v)*

The incidence of the unemployment rates is particularly acute among young people and those with low qualification levels. Nevertheless, the unemployment rate among individuals detaining high education (Pordata, 2014; Ramos, F 2011) (tertiary education) has been rising since 2009, peaking at 12.6% in 2013. Last year it decreased to 10%. This is particularly relevant given that the percentage of Portuguese population with high qualifications have been also increasing attaining 15% in 2013. The employment levels among people working in a public institution decreased by 6%.

More than caused a huge unemployment growth and respective devastate social consequences, the incidence of financial crisis and financial assistance program also originated a significant change on the structure and features of unemployment. With effect, the incidence of long-term unemployment had risen from 48.2% in 2008 to 56% in 2013, being the Portuguese rate one of the highest among member states, after Slovakia, Greece, Croatia, Ireland and Italy. Moreover, the temporary jobs in Portugal is one of the most relevant among European members and it keeps growing (in 2012, the percentage achieved 20%), as well as the number of involuntary temporary individuals. Furthermore, the incidence of part-time employment has increased achieving in 2012, 11%. Self-employment's conjecture was also substantially affected. The same source emphasizes that the number of self-employed workers, both with and without (own account workers) employees recognized a strong decline after the emergence of crisis. Young people remains the most affected, with a particular incidence on the youth neither in employment, nor in education or training (NEET).

Portugal has returned to its historical past repeating emigration fluxes, which recognized a strong increase from 2010 onwards. The major difference, however, between this recent movement and the one in the 60'ies is that currently emigrants are mostly young, highly qualified, aligned with the interest to move abroad permanently. Ultimately, this reality is

prejudicial at least as unemployment spells intensity and duration for Portugal prosperity in the sense that the lack of young population compromises the renovation of generations, which actually constitutes also a challenge and priority for policy intervention. The increase of emigration fluxes contributes to decrease the existing labour force, particularly the high qualified one, which in turn, raises the unemployment rates.

In what concerns real wages, it was verified a strong decline in them, due to the labour market reforms to restore competitiveness that the Portuguese government implemented in the context of financial assistance program. It is based on internal devaluation, given that Portugal, as a member of Euro no longer displays from the monetary policy instrument. Internal devaluation consists precisely on the reduction of labour costs so that the final product's price could be lower and thus, competitive. In fact, the real labour costs have been reduced. Following the same pattern, the minimum wage has diminished in real terms, in contrast, the number of workers that receive the minimum wage more than doubled, since the eruption of the crisis.

Finally, owing to the financial assistance program and respective structural reforms, one of the immediate consequences was the reduction of unemployment benefits. The number of unemployed individuals that received those benefits was lower that the total number of unemployed eligible to receive it. The amount of jobseekers that received a unemployment benefit decreased from 50.3% in 2008 to 43.7% in 2013. Also the distribution of these benefits is not similar across age groups, being the young individuals the most affected (only 8.7% of them received the benefit in 2013).

A recent publication of OECD (2014) adds some important points regarding Portuguese Labour Market. According to it, in July 2014, the Portuguese unemployment rate was 14%, which recognized considerable improvements. OECD also exposes that Portugal presents a poor performance in what respects job's quality, according to three main dimensions: earnings quality (level of earnings and degree of inequality), labour market security (risk of job and income support availability) and quality of working environment (work demands and conditions, resources and support available), specially regarding job quality and quantity, due to the decrease of average earnings and overall discontentment with work conditions, pressure and lack of resources support to achieve job's tasks.

2.4. Portuguese Active Labour Market Policies (ALMP's)

The principal Portuguese active labour market policy remains on the so-called National Action Plan (NAP) for Employment, supported by European financial instruments such the European Social Fund, the Cohesion Fund and the European Fund for Regional Development. The main goals behind this plan are the promotion and adequate transition of the young to the labour market, the improvement of social and professional insertion and mitigate the long-term unemployment and social exclusion and the improvement of basic and professional skills of the employed individuals, in the context of lifelong training. The Portuguese institutions that implement and reinforce the labour market policies, with overall responsibility of the Ministry of Solidarity, Labour and Social Affairs (*Ministério da Solidariedade, Emprego e Segurança Social*) are among others, the Institute for the Innovation and Training (*Instituto para a Inovação na Formação*) and specially the Institute for Employment and Vocational Training (IEFP-*Instituto do Emprego e Formação Profissional*). IEFP is the main public service of Portuguese national employment. The main goal of this organism is to promote the creation and quality of employment and mitigate unemployment spells, through the conduction of ALMPs, namely vocational training. Other objectives embrace training and vocational rehabilitation for insertion and professional development of employees in labour market, educational and professional qualifications for young individuals and adults through, respectively dual certification training and certified training, the implementation of vocational training or other programmes adjusted to the participant's needs, by itself or in collaboration with other entities, the development of craft micro-enterprises, as a source of job creation at a local level and vocational rehabilitation for disabled people in partnership with the National Institute of Rehabilitation, IP.

Some of the most relevant active labour market policies involve (GEE- MNE, 2014):

- **Stimulus to employment or employment subsidy (*Estímulos para o Emprego*)**: meaning that potential employers receive financial support (subsidies) if they employ unemployed individuals for at least 6 months or more, or celebrate temporary contracts, full or partial time and, simultaneously provide them adequate training for their daily tasks.
- **Employment's internships (*Estágios para emprego*):** internships with a 9 months' length that aim at integrating young people in the labour market or the professional reintegration of unemployed.
- **National Plan of implementation of a young's guarantee (*Plano Nacional de Implementação de uma Garantia Jovem*):** it is a program that support youth until the

age of 29 and under that, after 4 months of the exit of educational system or labour market, young can be provided with a job offer, improvement of studies, vocational training or internship, in order to increase their qualifications, ease their transition to labour market and to reduce the youth unemployment. This program entails 6 axes: information and management, integrated information system and orientation for qualification and employment, education and vocational training, internships and employability, sponsorships, coordination and accompaniment´s devices.

Some measures adopted in 2014 were:

- **Active youth employment (*Emprego Jovem Activo*)**, in which there is a development of practical skills in labour's contexts by a team composed by 2 or 3 disfavoured young and 1 qualified young with a duration of 6 months;
- **Youth Investment Program (*Programa Investe Jovem*)**, that is designed to improve business creation (self-employment) by youth unemployed, through the provision of financial support to investment and entrepreneurship;
- **Youth Boost Program (*Programa Impulso Jovem*)** that aims at creating opportunities for high qualified young's labour market integration, supporting young entrepreneurs and investment projects of SME's which create jobs, territorial cohesion, prioritization of transactional sectors of goods and services and decreasing costs of young absorption in labour market, through fiscal support to companies,
- **Active Life Program (*Programa Vida Activa*)**, described, on purpose, in session 4.1, was reinforced in 2014.
- **Vocational Education and Training (VET)**(CEDEFOP, 2013-2014)**:** this kind of programmes aim at providing their eligible participants with better qualifications and skills enabling them to enter labour market. Therefore there are several types of VET as described: **VET programmes at basic education level (*Curso de educação e formação de jovens*):** for young people – school based and work-based learning (WBL), embraces youth aged over 15 and that completed the first cycle of basic education, but display risks of early school leaving, not in many cases been completing the compulsory education (in Portugal it is the secondary level); **VET programmes at secondary education level:** are school-based and include WBL, except for art education. The participants should also be aged over 15 and completed the basic education. The participants that are successful on this program are granted a secondary level education, which my lead them to integrate the labour market or

further education (higher education); **Apprenticeship program:** it consists on a contract between the enterprise and the participant, in which 40% of the training is provided at the workplace. Participants should be aged below 25 and have completed the basic education. The courses are particularly implemented to support young people in integrating the labour market; **Programmes at post-secondary non tertiary level:** comprises scientific and technological training and school with work based learning, which includes 30 to 46% of technological specialisation programmes (TSP) and 18% in post secondary level. Participants should be aged over 18, be at the last year of secondary education or present a higher education certificate; **Adult education and training courses:** are flexible training programmes targeting people over 18 wishing to complete basic or secondary education levels and /or have an occupational qualification; **Certified modular training courses:** include credit-based and allow participants to select individual units. Participants are usually over 18 and do not fulfil the basic or secondary levels of education/training. A certificate and a diploma are provided for successful completers; **Recognition, validation and certification of competences (RVCC):** focused on the principle of lifelong training and education, involving individuals over 18. The general academic and vocational RVCCs lead participants to obtain a basic or secondary education level or an occupational certificate. Adults who present lack of competences and skills for a given qualification are assigned to specific and suitable training courses to acquire them.

This section provided the existing active labour market policies in European and Portuguese contexts. In the Portuguese case, these same policies were particularly reinforced from 2012 onwards, targeting all kinds of unemployed. There are several policies which aim at combating the high unemployment rates verified in last year's. The present research seeks to understand the impact of a single policy developed and integrated in the **Active Life program**, which has been reinforced since 2014, emphasizing its effects on graduated unemployed.

3.An empirical overview of main activation measures to mitigate unemployment

3.1. Labour reforms to promote self-employment and employment rates

3.1.1. French labour reform

Regarding the effects of subsidized entrepreneurship training, an interesting comparison, in terms of efficiency and desirable outcomes for self-employment is provided by the French labour reform in 2001 analysed by Hombert. J et al (2014). France is characterized by an high unemployment rate (8.3% in 2002 and 10.4% in 2014) beyond high-educated young people and by a small group of entrepreneurs. The mentioned reform sought to decrease the disincentives for unemployed individuals to create their own business. On the one hand, unemployment benefits can reduce the incentives to look actively for a job, but, on the other hand, when limited can also diminished the incentives to create a new business, especially for risk-averse individuals due to the uncertainty inherent to the success of the business. The main motivation of this paper, consists, therefore on understanding if when the unemployed benefits are not reduced, there is any positive impact on the creation of new businesses and subsequent improvement of self-employment. The changes behind the reform including negotiations of the unemployment benefits within PARE (*Plan d'Aide au Retour à l'Emploi*) and were implemented in mid-2001 and became operational after one year. The principal objective was to offer insurance to unemployed individuals who desired to create a new business, permitting them to have unemployment benefits in case of business failure or in case of insufficient revenues achieved with the new business (below 70% of the pre-unemployment income). The substantial difference between post-reform and pre-reform is that, before the reform, unemployed lose the rights to have benefits once started a new business, incurring also the consequent risk of failure.

Through a difference-in-difference framework, the authors aimed at evaluating the impact of the 2001's French labour market reform on the relevant firm-and industry-level outcomes, namely in what respects the increment of entrepreneurial activity. The treatment group was defined as the small-scale industries. The intrinsic intensity of the treatment is derived, from the pre-reform period, as the proportion of sole proprietorships among new business's creation. The impact of the reform is supposed to be larger and stronger under business with a single individual, given that it targets essentially, unemployed entrepreneurs, who revealed to display less capital and so to constitute, at least, in the beginning, a firm without employees. Industries are, thus, distributed between quartiles of intensity, corresponding the treated industries to the ones that have more sole proprietorships among newly formed businesses (such street vendors, taxi-drivers, healthcare specialists and personal services), have less

employees at creation and are less likely to hire, at least one employee beyond the first two years.

The major findings of this empirical strategy suggested that firm creation's growth is higher among high intensity industries, that is for the ones that are constituted by a sole proprietor. Regarding job creation, that is a measure of business's quality and economical success, there is evidence that among firms that started without any employee, the job creation is positive and statistically significant, compared with the ones that since the beginning employed at least one worker. This is actually in accordance with the expected results of the experiment, due to the fact that unemployed entrepreneurs start, usually with very small businesses. Also, the additional firms emerged after the reform are not more likely to exit, which expresses some financial sustainability on their activities. An aggregate cost-benefit analysis is also provided, indicating that, overall, the reform had a positive impact on the French economical and social structure, explained mainly by the shorter unemployment spells and a better reallocation to the labour market translated into more productive and higher-paid jobs.

Possibly, it is reasonable to assume that enlarging the unemployment benefits and ensuring the unemployed individuals, who desire to create a new business, but are risk averse and lack of appropriate funding can constitute, in the long-term a more feasible solution than merely providing entrepreneurship training, which available evidence suggests an increase of business's ownership solely in the short-term. Perhaps, both initiatives can be complemented (entrepreneurship training and unemployment benefits), given that uncertainty and entrepreneur's risk-bearing might partly explain the still low engagement into self-employment or entrepreneurial activities.

3.1.2. The British New Deal

Van Reenen (2003) examines the British New Deal targeting young unemployed revealed to be a relevant source of complementation to the previous experiments described above. The United Kingdom presents issues regarding young people who are unemployed and are neither in school, nor actively seeking for a job, being strongly reliant on unemployment benefits. Hence, the New Deal programme was conducted in order to provide some alternative options to unemployed individuals aged between 18 and 24, long term unemployed, single parents and disabled. The programme entailed different parts with diversified options and became compulsory for young unemployed that receive welfare benefits from Jobseekers Allowance (JSA) for more than half a year. For the first four months (Gateway) individuals are assigned to a personal counsellor, who gives adequate support concerning job search. After that period,

if individuals still remain under JSA assistance, they should be assigned to one of the following options (in the context, then, of the New Deal programme): full-time education for up to one year, particularly for those with low educational levels; a job for half a year with a voluntary sector employer, a job inserted in the Environmental Task Force or a subsidy to a potential employer for six months, including training for at least once a week.

The major outcome of interest of this study concerns the switching from unemployment to employment due to the New Deal Programme for the treatment group, young people unemployed for half a year. An adequate control group remains on those individuals, who were not target by the program or that were not eligible for it. Thus, the first sub-group is constituted by young unemployed aged between 19 and 24 not inserted in pilot areas and the second one considered individuals not eligible for the program, give that are aged up to 24. Consequently, the appropriate framework chosen was the difference-in-difference, once it is aimed to infer the difference in the outflow rates before and after the programme between treatment and control groups.

The author showed that the programme seemed to be effective, in the sense that allowed a significant increase of employment among the target individuals, both comparing with non-pilot areas and to older ones, not eligible for the programme. Furthermore, it was also shown that the wage subsidy had a positive and significant impact on raising job's creation, at least in the short-term.

3.2. Active Labour Market Policies (ALMP's)

3.2.1. German Government Sponsored Training (GST)

According to Lechner et al. (2011), Germany is one of the European countries which invests more in training regarding improvements of unemployed qualifications, so that the target individuals can reintegrate the labour market, what is called Active Labour Market Policies (ALMPs). The most relevant instruments for this purpose are training programmes with different approaches (shorter, longer terms training, retraining are among the most important), rehabilitation programmes and subsidized employment. As this kind of programmes involve a large amount of expenditures, the following study aims at inferring if its implementation brings further benefits, in terms of likelihood of being employed and the respective duration of job vacancy for the target population. The main goal behind German training projects is to assess, ensure and improve participant's knowledge, skills and abilities (KSAs) and career prospects, by adjusting them to the current requirements of labour market. Training programmes are usually provided and supported by the German government sponsored

training (GST) and directly funded by Public Employment Service (PES). In order to understand the various dynamics behind the specificities of each training method, the authors proposed a formation of homogeneous groups of training programmes based on participation selection, educational content, organisation, group's features such sample size and available information that allow further distinction between programmes; as follows: short training (duration inferior to six months, including job search assistance), long training (duration larger than six months), retraining (training to get another professional degree different from the currently held by the participant), practice firms (training that simulates a specific task in a given profession specifications, either in commercial or manufacturing parts of the company) and other programmes (including career improvement). Retraining is strongly specific and associated only with German's ALMPs, which provides us an unique source of information regarding the efficiency and repercussions of this program on the analysed outcomes. Through a propensity score matching framework, this experimental design estimates short, medium and long-term impacts of those cited diversified training programmes for the sample of West German unemployed (between 1992 and 1994) on participant outcomes: employment, unemployment and earnings (average treatment effects on the treated), over an eight-year after the program start.

Inferences regarding outcomes in long and short term suggested that, in the long term, all programmes display positive effects, compared with non-participation, that is, all programmes substantially contribute for larger employment length and earning rates for participants. Retraining, which involves a significant investment in human capital, seems to show the largest long term impact both in employment and earnings, which sustains the argument that larger costs lead to incremental effects in the long-run. Short- training also evidenced long term effects, being the lower impact registered for practice firms and long-training. At a first glance, seems that both extremes (very short and very long lengths of training) resulted in similar outcomes. Nevertheless, there exists a trade-off between shorter and longer training, given that positive impacts materialise much earlier for shorter than for longer programmes. Overall, training programmes showed to increase employment duration by eight to ten months, after eight years of analysis.

The authors also compared the effects of training programmes concerning the exogenous heterogeneity between participants, in what regards local unemployment rate, gender, unemployment duration, occupational status, education and employability. It was possible to infer that retraining drove to positive impacts in all subgroups, practice firms are less effective for men and for short-term unemployed. Short-training showed to be less efficient for women

and for unemployed who detain higher qualifications, long term training revealed to be less efficient for unemployed, who have, à priori a better chance to be employed. This division subsequently led to policy experiments, that sought to understand which training programmes would be more effective . It evidenced that everyone allocated to a given training program would increase the employment rates, being the highest ones present under retraining programmes, confirmed the previous results mentioned. But also, taking into account the associated costs, that short training programmes would achieve the second best solution.

This kind of approach allow us to be aware of the sources of heterogeneity and specific needs of participants and respective responses, which in turn, requires adequate human resources policies, in order to maximize potentialities and allocate the most suitable training method, given the respective characteristics of participants. Nonetheless, this analysis, owing to its regional incidence might present a lack of external validity, given that what actually fits well a group of individuals inserted in specific social and economical structures might not be adequate for other group, despite their common fact of being unemployed.

3.2.2. German's job search programmes and training

Further evidence from an empirical analysis in Germany (Lechner et al. 2012) argued that, in general, Active Labour Market Policies (ALMPs) benefit firms performance neither in short term nor in long term frameworks. The relevance of this study relies on the interest of understanding if, in fact diversified policy approaches on labour market that intend on diminish the social impact of unemployed are indeed beneficial for firms, which hire employees targeted by them, given a pre cost-benefit analysis.

Through the German linked employer-employee database and the Federal Employment Agency (FEA), this paper describes the effects of the availability of different types and intensities of ALMPs in the regions in which the firms hire (called their "hiring regions") for the period of 2001-2003. The considered active labour market policies for deeper analysis were job search programmes, training (further vocational training) and subsidized employment. The Federal Employment Agency is responsible for the allocation of the budget through different ALMPs that subsequently are made available for each local employment agency (LEA) that actually implement specific policies according to the specific needs and interests of the community that they are situated in. Hence, it is strongly probable that even closer LEAs display different ALMPs owing to differences in the population's preferences. For each community where the scope of intervention of LEAs lies, there is a firm's hiring region. The implementation of ALMPs is, therefore, exogenous to the firm's performance and

subsequent hiring processes. This is explained by the fact that firm's hiring region do not completely coincide with the area of exclusive responsibility of a given LEA. Workers that live in the firm's hiring zones are targeted by different LEAs and possibly by different ALMP; on the other hand, there are workers that do not live in the firm's hiring zones and are served by LEAs on the firm's hiring area. Also the LEAs targeted workers constitute a much broader sample than simply entailing firm's employees.

Given the previous assumptions, the estimation is run through a propensity score approach for each treatment by estimating a probit model, identifying as the dependent variable the treatment dummy, adding the characteristics of firms and relevant controls.

The main outcomes verified through this empirical experiment slightly depend on the types of ALMPs. Thus, a larger share of subsidized employment and longer further vocational training harm companies in the long term, by increasing the share of temporary workers or by running out of the business. There is no evidence that short training methods such job search assistance or moderate human capital improvements benefit companies' performance.

The shortcoming remained on this study involves the perception of the optimal length of training, given that neither shorter nor longer term trainings seemed to be effective, although clearly the longer term displayed more problematic consequences and it is in general more costly. The human resource policies' approach is also important to consider, in order to understand the reasons for failures of companies when hiring unemployed people and also to address possible manners of matching better the skills required by the firms and those presented by the employees.

3.2.3. German Training Voucher

Another study conducted in Germany (Doerr et al. 2013) aimed at evaluating the impact of a different regime of training programmes based on the German Training Voucher. The insurgence of this new approach is owed to the lack of efficiency and transparency of the previous assignments to training. Before 2003, the assignment process into training programs was conducted with strong authority and control by respective institutions about the training methodology that each unemployed should apply based on subjective measures. Consequently, interdependent relations between employment offices and training providers were a reality. After the reform in 2003, the direct assignment to specific training programmes was replaced by a voucher-like allocation system, in which each unemployed was free to chose the best training offer according to his specific needs and abilities, but conditional on some limitations, namely the objective's specifications in the voucher, content and the maximum duration of

the programme. Simultaneously, new selection criteria were made available, under which unemployed eligible to receive a voucher were the ones that would get the higher changes of reintegration in the labour market within six months after the end of the intervention. The analysis provided by this study contains data from Federal Employment Agency in Germany complemented with Integrated Employment Biographies (IEB), based on information (employment outcomes, complete employment and welfare histories, socioeconomic features, health and disabilities) on all individuals that were actively involved in further training courses prior reform (2001 and 2002) and on all individuals that were eligible to receive a training voucher post-reform (2003 and 2004). The empirical design of this study remains on the decomposition of overall before-after effect of the reform into institutional, selection and business cycles impacts. This can be considered a difference-in-difference approach, given that the main goal is to infer the average treatment effects after the reform took place, comparing with pre-reform period, that is the difference between average treatment effects of participating in training under the voucher system (post reform) and the average treatment effects of being directly assigned to training programmes (pre-reform). Further decompositions into selection, business cycles and institutional effects are provided as complements of the main difference-in-difference effect. The main findings proposed that in short-term, the difference-in-difference effects on employment and monthly earnings are positive, but become negative after the second and third years of treatment; in the long-run, the effect is positive in what regards employment but not statistically significant in terms of monthly earnings. The institutional effects are positive in the short-term, which can be explained by changes in the composition of the programmes and respective durations, in opposition, medium- run impacts are negative due to the raising shares and length of retraining programmes; in the long run, they become close to zero and insignificant. Those effects are considered to be more negative for participants with a higher vocational education level. Moreover, training under voucher system is less effective for high skilled workers. The effects based on renovation of selection criteria appeared to not cause any impact on employment rates and monthly earnings.

3.2.4. French training system for jobseekers (FTSJ)

A study in France (Crépon et al. 2007) regarding training programs was conducted in order to infer significant outcomes in what respects the duration of unemployment rates and its recurrence. Usually, in France, training programs target essentially unemployed who have low skills and, for this reason, their reinsertion in labour market remains a challenge causing

longer unemployment status. French Training programs entitled as the French training system for jobseekers (FTSJ) are under responsibility of State, administrative regions and social partners. The State, remains, however the main intervenient, in what concerns setting and supporting training programs, through the French public employment service (PARE – *Plan d'Aid au Retour à l'Emploi*). Also social partners play an active role in what respects payments of Unemployment insurance benefits for the ones that have better chances of being employed and provision of training programs through the mechanisms UNEDIC (*Union Nationale interprofissionnelle pour l'Emploi dans l'Industrie et le Commerce*) and ASSEDIC (*Association pour l'Emploi dans l'Industrie et le Commerce*), respectively. This paper exploits an unique data set based on FNA (*Fichier Nationale des Assedic*) collected by UNEDIC, which contains relevant information about all unemployed individuals benefit from Unemployment insurance or others kind of welfare benefits. The database covers the period comprehended between 2001 and 2005, entailing individual characteristics and individual eligibility for unemployment insurance, namely the duration and amount of such benefits. Through the multiple-spells duration model, the authors measure training spells durations and unemployment recurrence. Thus, the treatment effect caused by training when an individual is unemployed, is to move him towards employment, once treatment- training- is performed. This effect may depend on individual characteristics, as well as the length of training he is involved. The authors considered some different transactions: transactions form unemployment to employment, from unemployment to training, from training to unemployment and from employment to unemployment.

The estimated parameters on the transition rates from unemployment to employment showed that this transition is higher for recurrent unemployed, that is for the individuals who are more often unemployed, it is also higher for workers who do not receive any kind of unemployment benefits or that performed a temporary job. Older people and the ones who presented a long-term unemployment situation are less likely to transit from unemployment to employment. This culminates on the distinction between two groups, one composed for workers that are younger and switch from unemployment to employment, the other constituted by older workers and of a long length of unemployment that are likely to remain unemployed. Regarding the transition rates from unemployment to training, the estimates revealed that unemployment recurrences enhance the possibility of entry to training and hence, in training accumulation (total time spent), unemployed individuals who live in more critical neighbourhoods, that is the ones more vulnerable to unemployment situations are more likely to be integrated in a training program, given that, those regions are also better supplied in

terms of training facilities, funding and absorption of needy participants. Estimates on transition rates from training to unemployment showed that people that benefit longer from unemployment insurance are also more targeted by longer training spells, being also the case of low-skilled individuals. Lastly, estimates of the transition rates from employment to unemployment indicated that less qualified people get shorter employment spells, the transition out of employment decreases with age and is higher among regions where the unemployment rate is huger.

The training effects are substantial different if considering the transition rates described previously. Therefore, given the transition from unemployment to employment and considering unobserved heterogeneity, training does not led to further employment rates and this effect is even more negative over time and if the duration of training is also longer. This suggests that training only stimulates participants to seek for a job immediately after the training is finished, when possibly participants are more confident and engaged. Training appears to be more beneficial both for low-skilled people and youth. Taking into account transitions in the opposite direction, that is from employment to unemployment, training seems to be more effective, reducing the transition for unemployment, nevertheless it strongly relies on the duration of training, longer ones enhance the possibility of remaining employed. It seems, then that moving from employment to unemployment is less likely to occur, explained, in part by a better and increasing matching between skills required by employers and offered by workers in longer term training programmes.

By inferring the simulated duration spent in training, it is possible to determine the average remaining duration of unemployed, when training has a non-null or a null effect on the exit rate from unemployment. Thus, training revealed to increase duration of unemployment spells, but also the duration of employment spells, especially for ones that start a training program before 90 days of unemployment.

3.2.5. Swiss temporary wage subsidy

In Switzerland, Gerfin and co-authors (2002) evaluated, the short-term impact of several ALMPs on the probability of being employed one year after the experiment took place and for the unemployed population not participating in previous training programs. Similar to previous approaches, authors divided in homogenous sub-groups the several options of training according to its specificities: basic courses (basic programme, courses to promote self-esteem and personality and courses for acquiring basic skills), languages courses, computer courses (general and specific computer courses), further vocational training - FVT

(business and trade training, manufacturing and technical training), other courses (practice firms, practical courses for young unemployed, courses for jobs in the tourism sector, health care sector). Additionally, the Swiss system provides a unique large programme defined as **temporary wage subsidy**, which consists on motivating unemployed people to have a temporary job, whose earnings are inferior to unemployed insurance, but they become over-compensated by the difference with a subsidy. This programme is, therefore different from the employment subsidy implemented in other countries, such Germany, since the latter entails subsidies for companies that hire unemployed people, in order to compensate them for further investments incurred with human capital needs.

The authors performed a propensity score matching framework, been focused on the differences of individual success on get employed that are due to those mentioned programmes. The data with respect to the period between January 1996 and March 1999 for all individuals registered in unemployment on 31st December 1997, was obtained through the information system for placement and labour market statistics (AVAM) and the unemployment offices payment systems (ASAL). These data permitted to collect information about unemployment evolution, ALMP participation and sample characteristics, such socio-demographics, nationality, region, previous jobs and desired ones, among others. The main eligible criteria for this empirical analysis is given by the requirement that people would be unemployed for less than one year on 31st December 1997, did not previously participate on this kind of intervention, and aged between 25 and 55. In order to allocate individuals to the best suitable training programme according to their intrinsic characteristics, a multinomial probit model was conducted, suggesting that, for instance, foreigners, whose mother tongue does not correspond to the current canton of residence are allocated to language courses; unemployed with higher skills are, consequently allocated to computer courses, further vocational training or temporary wage subsidy. Hence, the heterogeneity among individual's features determined the training program that fitted better their needs, which seems rational and effective.

The short-term average effects of the program (average treatment effects on the treated) evidenced that temporary wage subsidy provides the best solution to enhance employment rates, besides the temporary feature of the job. Nevertheless, the authors underlined potential labour market distortions that can emerge from this instrument, namely the fact that workers could be laid-off and recalled in the temporary wage subsidy scheme, firms can also use temporary wage subsidy to mitigate dismissal protection regulations to promote flexible work force or the bargaining agreements of collective wages. In contrast, programmes such

employment programmes, vocational training programmes presented a mixed performance, being dependent on the sub-programs analysed. Despite not having positive impacts on employment rates, further vocational training, other training courses and computer courses, specially for foreign participants, looked promising. Basic and language courses revealed negative impacts on the likelihood of being employed. These negative impacts drawn from the average estimations might be associated with the short-term effects of being inserted in a training program, which reduces job search activities and job offers from the labour office compared to non-participation.

The length of the analysis provided by this study, as well as the lack of a cost-benefit considerations of the several training programmes constitute the major drawbacks. It is important to infer if the negative short-term impacts of some trainings referred above, which costs could be lower than temporary wage subsidy would become positive in the medium-longer term.

3.2.6. Turkish National Employment Agency's: vocational training

In Turkey, Mckenzie et al (2014). analysed the impact of vocational training on the unemployed, providing further insights on this topic and completing it substantially by concluding, among other relevant outcomes, that vocational training programmes have a negative return on the investment (costs of the program are larger than the inferred benefits), due to only modest short-term effects.

Turkey is an emerging economy characterized by a low employment rate, and thus a high unemployment rate, being it relevant also among young people. Therefore, this study provides a randomized experiment that aims at estimating the average impact (intent to treat effects) of large-scale Turkish National Employment Agency's vocational training programs, including an extensive sample of general unemployed individuals, not only disadvantaged youth. Additionally, the relevant estimations are also provided in the long-run, up to three years after the training participation. The Turkish National Employment Agency (ISKUR) offers services for the unemployed population through 109 offices and 81 regions. The eligibility criteria to participate in training programmes are: aged up to 15, present at least primary level of education and also detain other skills that are required to certain training programmes that the target population would like to take. All the intrinsic characteristics (age, gender and educational level) of these individuals are integrated on the ISKUR's Management Information System (MIS), which, in consequence, allocates individuals to each course by

gender and if they were or not less than 25 years old, achieving three main groups: treatment group-individuals assigned for training, control group-the ones who are not allocated to training and a waitlist group, for which the training provider could select in case of any drop-outs from the treated participants. The programs have on average 336 hours over three months, include an extensive range of subjects (computerized accounting, service courses -babysitting, cashier, waiter, elderly care, craftsman, machine operations – plumber, mechanic, technical courses – computer technicians, electrical engineering and professional courses – web designers, computer programmers) and are offered by public or private institutions. In Turkey, the vocational training programmes are the major active labour market policy (ALMPs) conducted, and has been rising since 2011.

The main findings of this empirical strategy reported that there was a small and statistically insignificant positive impact of training on the probability of being employed or of weakly working at least 20 hours or more. Moreover, the effects on weekly hours worked, income were also small and insignificant. However, the impact of training on job quality, socioeconomic occupational status of the job, being formally employed and income earned from formal jobs is positively and statistically significant.

Overall, these several employment impacts proved to be modestly positive, corresponding to modest increases in household wealth and welfare, without impacts on expectations about the future. Furthermore, an interesting finding entailed the fact that both policymakers and participants over-estimate the outcomes of the training programmes.

Ultimately, it seemed that the vocational training provided by private institutions had a larger and statistically significant impacts on short term employment, mainly explained by a better congruence between skills improved in training and required by the companies and the existence of a tougher competition.

Once more, it remains ambiguous to understand the reason behind the short-term effects of training when compared to long-term ones, that are constantly diminishing. There is room for improvement of the type of active labour market policies to enlarge the duration of training effects, so that the return on investment can be positive.

3.2.7. Dominican Republic: Juventud y Empleo program

Card et al. (2011) conducted an experiment targeting youth unemployed in Dominican Republic. The training programmes were particularly financed by Inter-American Development Bank (IADB), aimed at targeting low-educated youth (less than the secondary level and not currently enrolled in school), aged comprehended between 18-29. It constituted

an initiative of the Dominican government through the *Juventud y Empleo* program (JE). The main goal of this program was to provide young disadvantaged specific training and counselling (basic skills training and technical/vocational training offered by private training institutions–*instituciones de capacitácion ICAPs*) in order to raise their job's skills and matching them better to adequate employers. This paper described the randomized evaluation design conducted by JE, by providing the impact of its intervention on the employment, hours of work, monthly earnings and hourly wages of treatment group, compared to control group. Given that in the implementation of the program, some individuals who were initially assigned to the treatment group dropped out, they were not included in the post-program outcomes, meaning that the observed average effects for the realized treatment group can be potentially biased estimates of the means of the initial treatment group. Baseline information provides that participants in the training experiment were one-half female, relatively young and with low levels of education and employment rates, which corresponds to the initial eligibility criteria.

The outcomes relatively to the increase of employment and hourly wages are modest and positive but not statistically significant. On the other hand, the raise on monthly earnings is significant. There are no statistically significant differences across gender, age, education and location concerning employment outcomes; in addition, impacts on monthly earnings are not substantial different for men and women, for younger and older participants, but there is a large significant effect for higher-educated individuals. Overall, JE program's intervention was slightly positive for employment rates and modest in terms of job quality, measured by the probability of having a job that offers health insurance.

3.2.8. Portuguese activation program: Convocatórias

Regarding empirical studies in Portugal, a recent study by Martins et al (2014) provides interesting insights concerning activation programmes, namely respecting *Convocatórias* program implemented in March 2012. This kind of programmes' effects are particularly relevant under economic downturns and high unemployment rates verified in Portugal since the emergence of financial crisis and subsequent financial adjustment program. The substantial raise of unemployment rates in this particular period was mainly caused by austerity measures, economic uncertainty, financial deleveraging, slowed external demand and decreased wages rigidities.

This study evidences the effects of the *Convocatórias* program on reemployment probabilities through a regression discontinuity design. This program belongs to the Portuguese

government's action plan aimed at promoting PES (Public employment service - Relaunch program under responsibility of the Institute for Employment and Vocational Training (IEFP-*Instituto do Emprego e Formação Profissional*)). The goal was to call unemployment benefit recipients (UBRs) of particular profiles for a meeting on jobcentres. These jobcentres were empowered to decide the content of the meeting and respective follow-up in order to enhance the possibilities of reintegration of UBRs in labour market. Thus, the treatment corresponded to a dummy variable equal to one if the individual was treated, that means, called for a meeting on jobcentres. Concerning the specific features of individuals these jobcentres were also capable to choose additional actions, including training, self-employment support and traineeship placements.

To conduct this intervention the data collection was based on two main datasets. The first one included the records of the Portuguese public employment service, dates of registration in the jobcentre and when the unemployed was eligible to the *Convocatórias* program; the second involved social security information and employment situations, remunerations and the monthly amount of unemployment benefit of each individual. The total sample comprised 105.595 individuals, in which 24% were assigned to the programme. The principal outcome of interest concerned the effects of the programme on reemployment on UBRs unemployed for six months or more, compared with the UBRs employed for less than six months (six months is then the discontinuity point). *Convocatórias* targeted two main groups of individuals: the UBRs aged at 45 or more and UBRs unemployed for six months or more. Since that individuals unemployed and aged of 45 or more were directly eligible for the program as soon as it was implemented, the focus of this study was on individuals aged 44 or less, eligible only through unemployment benefit duration. In addition, this benefit duration might be neither smaller nor much larger than the threshold of six months established for the regression discontinuity design.

The main findings of this research suggested that raised efforts of activation of the *Convocatórias* program had significant and positive effects on reemployment likelihood of targeted UBRs, besides the difficult macroeconomic conjecture and labour market constraints on this period.

The impact evaluation of this type of programs is particularly important in terms of policy-making, especially concerning economic recessions, once under these situations, the repercussions of activation investments might be smaller, given the weaknesses of labour market and the increased competition for job vacancies.

3.3. Entrepreneurship training

3.3.1. Entrepreneurship training: the GATE Program

Empirical evidence provided by Fairlie et al. (2012), within the GATE (Growing America Through Entrepreneurship) program in the US showed that this entrepreneurship training significantly increased average business ownership and overall employment in the short-term, but this effect would be diminished over time, that is, the impact of entrepreneurship training is no longer effective in the long- term.

The project GATE was promoted by US Department of Labour and the Small Business Administration (SBA) aligned with other entrepreneurship training services institutions such Small Business Development Centers (SBDC) and community-based organizations (CBOs). This program slightly differs from others that remain in US, given that it entails training for every individual interested on conducting his own business, despite only individuals that benefit from unemployment insurance or other kind of welfare benefits. For the experiment that sought to infer the impact of GATE training project on the likelihood of treated individuals constitute their own business (self-employment), more than 4 thousand individuals were randomly assigned to treatment and control groups along seven cities of different sizes and fourteen different organizations (including both SBDC and CBOs). The treatment group was provided with several free services and the control group was informed that they would be surveyed in 6, 18 and 60 months. Even though, control group was not eligible for GATE program, it does not actually impede those individuals to seek for paid training programs on other institutions. In order to assess specific training needs, an one-to-one counselling was conducted and followed by particular advices on what kind of services were more suitable for each case. Also, followed-up surveys were implemented within 6, 12 (Wave 1 and 2), 18, 42 (Wave 3), 60 months after the experiment.

The main specification of this analysis comprehends an intent-to-treat effects, conditional on baseline controls, that is, what is the impact of GATE project on services received, business planning, trying business ownership, performance, size and earnings for the ones that actually participate in the program, controlling for the ones that would be eligible but do not comply. The main outcomes suggested that individuals assigned for treatment group are more likely to receive training in the next 6 months following the random selection, were more likely to write a business plan after 6 months and these results remained in the following waves. Nevertheless, the number of individuals trying to set a business was slightly small and not

significant in the longer-term (Wave 3), thus after 60 months there is no statistically significant difference between treatment and control groups, which confirms the short term effects of entrepreneurship trainings exposed by the authors. *"(...)The positive effects of entrepreneurship training on business ownership appear to die out over time.(p.13)".*Moreover, entrepreneurship only ensures that people actually start a new businesses, but it does not display any substantial significant impact on the pre-existing ones. In what respects size of business and number of employees achieved in the long run, there is no evidence that entrepreneurship training raised the probability of economically successful companies or with higher employability. Similar effects were inferred when estimating the effects of GATE training on business earnings and subsequent hiring of employees.

This empirical study gives, simultaneously insights about the relevance of some rationales (credit or liquidity constraints, labour market discrimination and human and managerial constraints) offered by training programs, through the estimation of heterogeneous treatment effects in the data.

Given the supported evidence that, at least in the short-run, subsidized entrepreneurship trainings enhance the possibilities for initially unemployed people to start a business and generally increases the probability of business ownership and overall employment, it seems essential to conduct further experiments to understand in which dynamics these trainings are more efficient and actually assess better the current needs of the target population. Because, even displaying internal validity, the external validity of this study can be questionable, in the sense that, only short-term evidence is supported and all but one rationale offered by training programs is slightly verified. It is crucial that longer term effects could be achieved, not only in terms of business ownership or overall employment but also regarding job satisfaction and performance, so that, in alternative some companies invest in these type of training, select potential employees and mitigate government expenditures on those programs.

3.3.2.Foster entrepreneurial activity

Managerial skills are considered fundamental to conduct successful business of the potential entrepreneurs. A field experiment conducted in India provided by Bloom et al. (2011) aimed at evaluating the impact of free consulting of management practices on the treated firms, supported by both Stanford University and the World Bank.

The target firms were textile ones and the treated were randomly assigned to the intervention (between August 2008 and August 2010), which consisted on five months of extensive

management consulting from a multinational entity, composed by some dimensions of management practices such factory operations, quality control, inventory, human resource management and sales and order management. While the control group only received one month of diagnostic consulting and post measurement phase, the treatment was provided with diagnostic, implementation and measurement phases. The diagnostic phase consisted on *evaluating the current management practices of each plant and constructing a performance database (p. 8)*. The database (duration of 15 days) included measures of output, efficiency, quality, inventory and energy use. The implementation phase (duration of 15 days a month) consisted of the provision of consulting in the supra cited dimensions of management practices The last phase-measurement (duration of 1 day and an half a month) - involved the collection of performance and management data from both treatment and control firms and subsequent advice.

The sample was randomly collected from all public or private textile companies in Maharashtra, being the focus of particular incidence larger firms with between 100 and 1000 individuals. The main findings derived from this field experiment suggested that Indian textiles firms that were offered free consulting on modern management practices substantially improved their performance in what regards output (production picks), average productivity, quality (measured through the *Quality Defects Index* (QDI)) and efficiency, a reduction in inventory, a change of organizational behaviour displayed by an increase of decentralization of decisions and a raise in use of computer and information technologies, enhancing the storage of data and the analysis involved modern management. Besides the controlled firms, that were offered a diagnostic phase registered some improvements in the adoption of innovative management practices, this increase was substantially less than for treated firms, meaning that the length of consulting support is relevant.

Among other policy's advices, the outcomes indicated that the absence of information and knowledge regarding best management tools and methods harm firms' performance and profitability. Therefore, the provision of adequate training programmes involving business skills and basic operations management (quality and inventory assessment) are essential. Entrepreneurship training is seen as a potential solution, given that, consulting services are extremely costly.

Through these several studies, it is possible to infer that there are a large number of attractive and efficient training methods inserted on active labour market policies. The results are,

however dependent on the target population, its features and specific needs, the type and length of training and the combination of different training methods. Additionally, there is evidence that the implementation of labour reforms influence positively self- employment and employment rates.

Once one is interested on analysing the effects of entrepreneurship training on employment, self-employment rates, improvement of networking abilities, job searching strategies, confidence levels and acquisition of managerial skills, it is relevant to underline that the existing evidence suggests that the effects of this kind of training on business creation or employment are mostly of short –term. Nonetheless, entrepreneurial skills are proved to be determinant on business success and organizational behaviour, therefore a deeper evaluation of entrepreneurship training effects still constitutes a research challenge, especially in what concerns networking, job seeking strategies and confidence levels, which this thesis aims to address.

Since most of the active labour market policies are particularly designed to target primordially disadvantaged and low-skilled groups of unemployed, this research aims at exploring the impact of an entrepreneurship training targeting only high-skilled/graduated unemployed.

A summary of the empirical studies presented on this section is provided in the appendix Literature Review-an overview.

4. Experimental design

4.1. Description of the program of entrepreneurship training

The entrepreneurship training was inserted in the program ***Vida Ativa- Formar e Integrar (Active Life – Educate and Integrate)*** and was conducted through a partnership between Institute for Employment and Vocational Training (IEFP) and Nova School of Business and Economics (Nova SBE). The general goals of this program were to adopt measures that contribute to adequate the qualifications of unemployed, particularly individuals who have a higher education to the needs and requirements of the labour market. The reinsertion in the labour market is achievable through training programs of short term, which enable the acquisition of relevant competences or the valorisation of competences previously obtained. This was possible through the provision of other competencies that are more valued by the market, such as entrepreneurship, management, administration techniques, marketing and advertising, IT and Multimedia skills.

The training program was based on the development of applied management skills and its main goal was to provide the participants with entrepreneurial and managerial skills and abilities, in order to engage them in creating their own business. Besides the implicit managerial and entrepreneurial skills, this training program was designed in order to enable its participants to acquire more capabilities in terms of networking and job seeking strategies and choices between suitable and non suitable offers according to their specific profiles. Ultimately, the intervention sought to promote individual's confidence levels and optimism concerning, mainly their professional situation.

The training experience comprised a two-week intensive courses in a total of seventy-five hours from 29th October to 12th November 2012, taught by either Nova SBE faculty or experts of IEFP.

The program was organized as the following table summarizes:

Week 1 –total of 35h (29th October to 5th November 2012)	
Introduction to Management (total of 2h)	Basic principles of management and enterprise's administration, structure, prices, production, costs, strategic behaviour and organization.

Strategic Thinking and Implementation (total of 10h)	Included notions of strategy, operational efficacy and market orientation towards customers.
Marketing Strategies (total of 8h)	Provided the main notions about marketing, strategic positioning, market segmentation, customer experience and competition.
Sales Techniques (total of 7h) Provided by IEFP	Main objectives entailed the knowledge of Sales steps and how to develop and pursue sales techniques in a competitive environment.
Negotiation (total of 8h)	Comprised an introduction to negotiation, modes and definitions of negotiations, conditions and matrix of negotiations, negotiation's models and its main phases.
Week 2- total of 40h (6th November to 12th November 2012)	
Financial Accounting (total of 10h)	Included Introduction to Financial Accounting and its main elements (Balance sheet and Income Statement)
Corporate Finance (total of 10h)	Incorporated an economical and financial analysis of the companies: short, medium and long term, financial ratios and profitability.
Communication (total of 12h)	Contained the description of what is communication, its importance, how one can influence others through communication and how to establish successful communication.
Personal Leadership (total of 8h)	Addressed the question: What is a leader and how to become a good leader?

Source: IEFP and Nova SBE

Table 1: Program organization and respective courses

4.2. Sample characteristics

The dataset used in this study is from Batista, C. (2013). One makes use of data on 94 unemployed individuals with higher education from IEFP's database. These data include the main demographic characteristics of project participants, such as name, age, email, personal contacts, current address, degree level, other qualifications or training participation and the main motivation for participating on this project.

4.3. Intervention and Empirical design

4.3.1. Intervention

A randomized field experiment was conducted in order to analyse the causal impact of entrepreneurship training on labour market outcomes of graduate unemployed individuals in a manner as rigorous as possible. The training intervention to be evaluated was implemented in October and November of 2012. From the 120 individuals of IEFP's initial dataset, 50 were randomly selected to the program, thus composing, the treatment group of those, who received the entrepreneurship training. The eligibility criteria for the participation in this program was based on the requirement that the involved individuals displayed at least one diploma of higher education not intrinsically or directly related to Management or Business issues.

The compliance rate was 100%; meaning that all 50 individuals randomly selected to take the intervention complied to it.

This experiment differs from the previous ones conducted on this field, in the sense that evolves exclusively graduate unemployed and the training is focused on entrepreneurial skills' improvement and their repercussion, among other outcomes, on individual's behavioural measures of networking, self-employment and employment probabilities.

To estimate the impact of entrepreneurship training, one should compare the outcomes of interest in the treatment and in the control group, with and without the baseline controls and other covariates. This empirical strategy provides an unbiased estimate of the average treatment effect of the program on a given outcome variable. This is because the control group provides a good counterfactual, in the sense that eligible participants have, initially similar baseline characteristics. Therefore, it is reasonable to assume that any difference between treatment and control groups is due to the participation in the program.

Individuals of both groups were followed –up through surveys at 3 and 6 months after the intervention. Due to the fact that only 94 (N=39 treatment; N=55 control) individuals responded to both surveys, one excluded from the initial sample the remaining participants that were just followed up once. Figure 1 represents the project timeline.

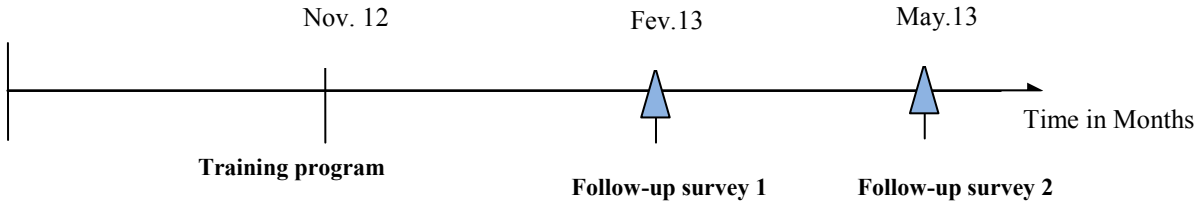

Figure 1: Project timeline

These follow-up surveys included a diversity of questions regarding respondent's employment, full-time employment or self-employment history and current situation, job seeking strategies, confidence levels about employment possibilities, soft skills' improvement. In addition, the dataset includes behavioural measures of networking (measured as participation in LinkedIn groups) and replies to job applications provided by *Vida Activa*. Thus, for instance, regarding LinkedIn usage, questions of the frequency of its use, for which purposes (job seeking, change of profile,…) and the number of comments, posts or likes across suggested topics that were made are recording measurements for this variable. Concerning job's offers applications to *Vida Activa*, the number of applications made and shared as well as if the applications that were fulfilled were suitable to the individual constitute measurements of this behavioural measure. In this way, the program aimed at evaluating if the participants were able to distinguish between job offers, selecting the one that would be more suitable according to their professional and personal profile. To infer this "selection" ability, participants were offered two different kinds of job, one suitable and another one non-suitable, regarding their expressed features.

4.3.2. Empirical design

In order to identify the average treatment effect of entrepreneurship training on the main outcomes of interest for this analysis the following empirical specification is used and described as follows:

$$(1)\ Y_i = \beta_0 + \beta_1 X_i + \beta_2 T_i + \beta_3 C_i + \varepsilon_i\ ,$$

where Y_i is the outcome of interest under analysis described below, X_i is a vector with baseline characteristics (gender, age and degree), T_i is the treatment dummy (equal to one if the individual is treated, zero otherwise), C_i is a vector of relevant covariates and ε_i is the error term. In this regression, β_2 is the main coefficient of interest.

Expected outcomes are, thus divided into four main categories: 1). Networking and job's offers applications; 2). Employment, self-employment's plans, full-time employment and job seeking strategies; 3). Complementary training and pro-activity 4). Confidence and optimism levels. Session 5 presents the main outcomes regarding these categories.

4.3.3. Balance checks

Among treated participants (Table 1) more than sixty percent (62.7%) of individuals are female and more than an half are catholic (53.8%), the average age is 35 years. In what respects the composition of degree levels, one firstly assigned individuals to four main groups accordingly with their degree levels. Hence, the group designed by degree in Social sciences includes individuals, who detain degrees in Philosophy, Psychology, Anthropology, Law, History, among others; degrees in Others, integrates individuals who display a degree in Sports, Design, Physiotherapy, Geography; degrees in Education contains individuals whose degree is related to educational sector, that means, directly linked to Teaching; degrees in Sciences embrace individuals whose degrees are related to Mathematics, Physics, IT, Engineering and Architecture. In terms of baseline characteristics concerning these groups, 30,7% of the individuals have a degree in Social Sciences, 25.6% are inserted on the category degree-others, 17.9% have a degree integrated on educational sector and 17.9% display a degree on Sciences.

Moreover, 71.8% of treated individuals had already opened a LinkedIn account one year before the program started and 79.5% had opened it at least for three months before the program started.

It is verifiable that, except for the variable "others degree" and "science degree" (which differences are statistically significant at 10 and 1% levels, respectively), entrepreneurship training's participants do not differ substantially in what respects baseline characteristics, and thus the sample is balanced, representative of the current entrepreneurship training market and therefore possesses internal statistical validity.

Table 1: Descriptive statistics

Treatment: Training program	Variables		Degree Social Sciences	Degree Others	Degree Education	Degree Science	Age	Catholic	Female	Linkedin account	Linkaccount
	mean		0.3455	0.10909	0.2182	0.2	35.25	0.68519	0.6727	0.7586207	0.9090909
0	sd		0.06471	0.04242	0.0562	0.05443	1.0201	0.0638	0.0639	0.0808692	0.039121
	mean		0.3077	0.2564	0.17949	0.1794872	35.147	0.53846	0.6277	0.71875	0.7948718
1	sd		0.0749	0.0708	0.06225	0.062254	0.947	0.08087	0.0501	0.0807522	0.0655042
	Treat-Control	mean	0.03776	-0.14732	0.03869	0.205128	0.1029	0.14672	0.1086	0.0398707	0.1142191
		sd	0.0994	0.078027*	0.08488	0.082324***	1.4772	0.10176	0.1017	0.1145568	0.0720705

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Degree in Social Sciences: Philosophy, Psychology, Anthropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciencies: Maths, Physics, IT, Engineering, Architecture

Linkedin account if the individual creates an account at least one year ago

Linkaccount if the individual creates an account for at least more than 3 months before the intervention

5. Main outcomes of the intervention

5.1. Treatment effects on behavioural measures: networking and job's offers applications.

5.1.1. General treatment effects of training on behavioural measures.

In order to identify the general treatment effects of networking, questions about the total number of comments, likes, posts on suggested topics, likes on comments, spontaneous posts and spontaneous share of business cards are used as outcomes. For job's offers applications variable, questions regarding whether or not an individual applied to *Vida Activa* job offers or only to offers that suit more his/her profile were asked.

LinkedIn

LinkedIn is assumed to be one of the most powerful business network sources used essentially by professionals, enabling visitors to be in contact with job opportunities.

Table 2 provided below shows the estimates of treatment effects on networking behaviour due to the entrepreneurship training. There is a positive and statistically significant (at 1% and 5% significance levels) effects of training on LinkedIn behavioural measures – total number of comments, likes and likes on comments across suggested topics, total number of spontaneous posts, total number of comments and likes on spontaneous posts.

Due to the training participation, the total number of comments across topics increased, on average 66% (significant at 1% level) the number of comments on LinkedIn for treated participants, when compared to control ones. Following the same tendency, the total number of likes across topics increased 41% (significant at 1% level), the total number of spontaneous

posts increased by 39% (significant at 1% level), the number of comments on spontaneous posts by 56% (significant at 1% level) and the number of likes on spontaneous posts by 51% (significant at 1% level) The total number of business cards shared spontaneously is positive, although not statistically significant.

Table 2. Impact of training on behavioral measures _Linkedin

Explanatory variables		Training program	
Dependent variables	Total number of comment across topics	0.6634	0.4743
		(0.2394)***	(0.1999)**
	Constant	0.0545	-0.2693
		(0.031)*	(0.6966)
	Total number of likes across topics	0.4103	0.3695
		(0.1358)***	(0.1396)***
	Constant	-8.33E-17	-0.356
		1.96E-17 ***	(0.408)
	Total number of likes on comments across topics	1.154	0.7823
		(0.3906)***	(0.2496)***
	Constant	-3.89E-16	0.00514
		5.55E-17 ***	(0.6978)
	Number of spontaneous posts	0.359	0.2694
		(0.1242)***	(0.1065)**
	Constant	-8.33E-17	0.2066
		1.39E-17 ***	(0.2078)
	Number of comments on spontaneuous posts	0.5641	0.5152
		(0.1897)***	(0.1887)***
	Constant	4.16E-16	-0.2689
		2.78E-17 ***	(0.4632)
	Number of likes on spontaneous posts	0.5128	0.4187
		(0.1315)***	(0.1241)***
	Constant	3.89E-16	0.265
		1.39E-17 ***	(0.282)
	Number of business cards shared spontaneously	0.0256	0.01812
		(0.0256)	(0.01875)
	Constant	-2.78E-17	0.0486
		3.47E-18 ***	(0.0543)
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female Age Degree Education Degree Sciencies Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Vida Activa Job Offers

In addition to these positive outcomes, one did not find statistically significant effects of training on the number of job's offers' applications to *Vida Activa* or in the number of applications to offers that suited better the individuals characteristics. It means that participants were not able to distinguish the two kinds of job offers arranged to them – as

mentioned before one offer was suitable to their professional profile and other was not. Table 3 presents the results regarding these variables.

Table 3. Impact of training on behavioral measures job offers *Vida Activa*

Explanatory variables	Training program	
Applied to job offers *Vida Activa*	0.089	0.1032
	(0.073)	(0.091)
Constant	0.091	-0.0156
	(0.0392)**	(0.1969)
Applied only to suitable offers	0.0373	0.0404
	(0.0668)	(0.0858)
Constant	0.091	0.0611
	(0.392)**	(0.1387)
Controls	No	Yes
N	94	74

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others, Has unemployment benefit ,Job search in Linkedin, Uses linkedin at least every week

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

5.1.2. Treatment effects of training on behavioural measures: survey 3 months

In the follow-up survey after three months of the intervention, the individuals were asked about some activities they usually did on LinkedIn, namely the frequency of its use and for which purposes – job seeking, adding connections and changing profile. On this survey, questions about job's offers applications to *Vida Activa* were not conducted.

LinkedIn

Table 4 presents the main outcomes concerning LinkedIn behavioural measures One found positive and statistically significant impacts (at 5% significance level) of training program on the frequency of usage of LinkedIn, an individual that participates in the training is likely to use LinkedIn at least every week more 21% on average and did on average 35% more connections since December 2012 than a non-treated individual. There is no statistical significant evidence that the entrepreneurship training program raised job seeking through LinkedIn or changes in profile in LinkedIn or in the different manners of adding connections, that is, by interest fields or companies, through seeking by known people, by using LinkedIn's recommendation tool or by accepting invitations. However, the effect of training on adding connections in LinkedIn through contacts of email accounts is negative and statistically significant at 5% level.

Table 4. Impact of training on behavioral measures _3months

Explanatory variables		Training program	
Dependent variables	Uses linkedin, at least every week last month	0.2077	0.1752
		(0.0928)**	(0.1077)
	Constant	0.76	0.7602
		(0.087)***	(0.3007)**
	N	56	49
	Add connections: interest fields/ companies	0.0625	0.0407
		(0.6)	(0.07137)
	Constant	0.0313	0.37689
		(0.0313)	(0.2377)
	Add more than 10 connections since December	0.344	0.3798
		(0.1176)**	(0.1286)**
	Constant	0.25	0.7062
		(0.0777)***	(0.4199)*
	N	64	49
	Add connections: seeking Known people	0.041	0.0894
		(0.0913)	(0.0935)
	Constant	0.72727	0.7193
		(0.0607)***	(0.2725)**
	Add connections: linkedin's recommendation tool	-0.0797	-0.0593
		(0.1044)	(0.1118)
	Constant	0.6182	0.9589
		(0.0662)***	(0.31794)***
	Add connections: accepting invitations	-0.0093	0.06869
		(0.0948)	(0.1003)
	Constant	0.72727	0.4082
		(0.0607)***	(0.2977)
	Add connections: contacts of email account	-0.214	-0.1354
		(0.1011)**	(0.1122)
	Constant	0.509	0.2049
		(0.6814)***	(0.344)
	Job search in linkedin last week	-0.02	0.0555
		(0.0914)	(0.09812)
	Constant	0.7636	0.5244
		(0.05791)***	(0.26344)**
	Change linkedin's profil	0.0932	0.1708
		(0.0869)	(0.0903)*
	Constant	0.72727	0.701
		(0.0607)***	(0.2942)**
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Sciencies, Degree Others, Degree Education, Uses Linkedin at least every week

Degree in Social Sciences: Philosophy, Psychology, Anthropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

5.1.3. Treatment effects of training on behavioural measures: survey 6 months

In the follow-up survey after six months of the intervention, the individuals were asked the same questions about activities they usually did on LinkedIn as in the first survey. Additionally, on this survey, questions about perceived utility of LinkedIn and job's offers applications to *Vida Activa* were conducted.

LinkedIn

The main outcomes concerning the impact of training program on these variables are reported in Table 5.

Table 5. Impact of training on behavioral measures _Linkedin_6months

Explanatory variables		Training program	
Dependent variables	Uses linkedin at least every week	0.2022	0.2326
		(0.09786)**	(0.1082)**
	Constant	0.6136	0.7189
		(0.07432)***	(0.3068)**
	N	82	74
	Add connections: interest fields/companies	0.0816	0.0677
		(0.0656)	(0.0698)
	Constant	0.05	0.0082
		(0.0349)	(0.1654)
	Add more than 10 connections since February	0.1013	0.0623
		(0.114)	(0.1195)
	Constant	0.425	1.189
		(0.0792)***	(0.3383)***
	N	78	71
	Changes profil	0.1105	0.25572
		(0.1005)	(0.1179)**
	Constant	0.5818	0.9236
		(0.0672)***	(0.3523)**
	Add connections: seeking by Known people	0.00886	0.0292
		(0.0957)	(0.122)
	Constant	0.7091	1.106
		(0.0617)***	(0.3037)***
	Add connections: linkedin's recommendation tool	-0.084	0.0015
		(0.1054)	(0.1254)
	Constant	0.5455	0.363
		(0.0677)***	(0.3425)
	Add connections: accepting invitations	-0.1141	-0.0728
		(0.0901)	(0.1131)
	Constant	0.0836	0.7175
		(0.0504)***	(0.3561)**
	Add connections: contacts on email account	-0.2396	-0.0469
		(0.0715)***	(0.0462)
	Constant	0.291	-0.0158
		(0.0619)***	(0.2308)
	Job seeking	0.1221	0.1308
		(0.0914)	(0.1143)
	Constant	0.6727	0.2096
		(0.06395)***	(0.323)
	N	94	74
	Perceived utility of Linkedin	0.4087	0.7254
		(0.516)	(0.5168)
	Constant	6.4412	6.256
		(0.332)***	(1.6406)***
	N	90	82
Controls		No	Yes

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others, Uses linkedin at least every week

Degree in Social Sciences: Philosophy, Psychology, Anthropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Congruent with the results of previous survey, the training program revealed positive and statistically significant (at 5% level) effects on usage of LinkedIn (20%), at least every week, meaning that, on average treated participants uses 20% more the LinkedIn tool every week. There is a negative and statistically significant (at 1% level) impact on adding connections in LinkedIn through contacts of email accounts (-24%). It is also observable that after six months of the end of the intervention, treated individuals are more likely (25.5%) to change LinkedIn profile than non-participants, being this result statistically significant at 5% level. There is no evidence of impacts of training program neither on adding connections since February 2013 and respective manners of doing so (through interest fields/companies, known people, LinkedIn's recommendation tool or accepting invitations), nor on job seeking through LinkedIn. The perceived utility of LinkedIn is positive, notwithstanding it is not significant.

There is a clear impact of training on the increase of usage of LinkedIn tool, however, the raise of number of connections through LinkedIn was only effective after 3 months of intervention. In any case, there is no evidence that LinkedIn enabled job seeking of treated participants more than non participants.

Vida Activa Job Offers

With respect to effects of training on *Vida Activa*'s job offers, either on receiving offers, applying or sharing them, one did not find significant evidence that training affects these variables substantially on treated individuals compared to non treated ones. Results are reported in Table 6.

Table 6. Impact of training on behavioral measures job offers *Vida Activa* _6months

Explanatory variables		Training program	
Dependent variables	Received job offers *Vida Activa*	0.053	-0.032
		(0.0947)	(0.111)
	Constant	0.691	0.9326
		(0.063)***	(0.3421)**
	Applied to job offers *Vida Activa*	0.019	0.0315
		(0.1051)	(0.1275)
	Constant	0.5455	0.3699
		(0.0679)***	0.3667
	Shared job offers received by *Vida Activa*	0.055	-0.0332
		(0.105)	(0.1281)
	Constant	0.5091	0.0802
		(0.0681)***	(0.346)
Controls		No	Yes
	N	94	74

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others, Has unemployment benefit ,Job search in Linkedin, Uses linkedin at least every week

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

5.2. Treatment effects of training on employment, full time employment, self-employment's plans and job seeking strategies

5.2.1. Treatment effects survey 3 months.

Other relevant measures questioned on follow-up survey after 3 months of the intervention concern employment, full-time employment and self-employment's plans of the individuals. Questions about whether an individual was or not employed, the respective employment spell and if he/she was full-time employed were asked. Furthermore, participants were asked about their plans to become self-employed (create their own business). They were also asked about their own (alternative) job seeking strategies, in case of being or not employed and, at last, about the frequency of job searching.

The principal outcomes respecting the variables described above are detailed in Table 7. The impact of training on being employed is negative, although not significant, meaning that the training program did not have any substantial impact on employment likelihood of treated individuals compared to controlled ones. If an individual is employed, the training program raises his/her probability of being employed full-time by 7%-8%, nevertheless this result is not statistically significant.

Table 7. Impact of training on employment, full-time employment and intention to be self-employed_3months

Explanatory variables		Training program	
Dependent variables	Employed	-0.072	-0.02
		(0.077)	(0.082)
	Constant	0.2	0.385
		(0.055)***	(0.237)
	Full time employed	0.0834	0.0742
		(0.0549)	(0.0564)
	Constant	0.8909	0.8235
		(0.0353)***	(0.1628)***
	Plans to be self-employed	0.211	0.214
		(0.102)**	(0.114)*
	Constant	0.327	0.622
		(0.0656)***	(0.311)**
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others, Has unemployment benefit, Has plans to become self-employed, Job search in Linkedin, Modify CV

Degree in Social Sciences: Philosophy, Psychology, Anthropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

The effect of training on self-employment's plans is positive and statistically significant at 5% level, meaning that individuals who participated in the entrepreneurship training are, on average, 21% more likely to have plans to become self-employed than non participants. It is important to refer that this result can be clearly attributed to the recent participation in the training and acquisition of entrepreneurial skills and knowledge. This result is particularly relevant, in the sense that the entrepreneurship training program's design potentially influenced the willingness of participants to create their own business immediately after the training program ended. Thus, this implies that the training allowed people to expect that to acquire the necessary skills and abilities to conduct their own business, increasing their motivation and confidence to prosecute it.

In terms of job seeking strategies, the results provided on Table 8 in appendix 1 demonstrate that the training program did not substantially increase job searching of participants compared to control group. The effect is not significant. In what concerns the different manners of job seeking, the training program impacted negatively but not significantly search through job seeking websites, potential employers' websites, press, employment centres, visits to companies and human resources websites. The training displayed positive and non significant impacts on searching for a job through LinkedIn, networking and public ministry websites. Finally, there is no evidence that the entrepreneurship training has risen significantly the frequency of job seeking.

5.2.2. Treatment effects survey 6 months.

The questions included in the follow-up survey six months after of the intervention were the same as in the three months survey. Table 9 shows the main effects of training on employment, full-time employment and self-employment's plans. Besides the positive effects that the training program suggested for these variables, they are not statistically significant. The impact of training on self-employment plans remained positive, nonetheless not significant. This result suggests the very short-term intentions of participants to become self-employed.

The results obtained for self employment in both surveys might be influenced by the perceptions of uncertainty and risk adherent to the creation of a business as well as its sustainability over time, given the particular acute economic and financial context in which the training was implemented - end of 2012, when the country was sunk in a severe recession, situation that was not substantially reversed in 2013. The lower intention to create a business six months after the intervention might still be justified by the larger market information and conditions, not totally available three months after the training.

Table 9. Impact of training on employment, full-time employment and intention to be self-employed _6months

Explanatory variables		Training program	
Dependent variables	Employed	0.1054	0.1132
		(0.1045)	(0.1167)
	Constant	0.382	1.115
		(0.066)***	(0.376)**
	Full time employed	0.0214	0.00287
		(0.0503)	(0.0589)
	Constant	0.9273	0.7699
		(0.0354)***	(0.1587)***
	Plans to be self-employed	0.103	0.1026
		(0.1019)	(0.125)
	Constant	0.564	0.4576
		(0.0676)***	(0.352)
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others, Has unemployment benefit, Has plans to become self-employed, Job search in Linkedin, Modify CV, Adapt Communication

Degree in Social Sciences: Philosophy, Psychology, Anthropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

In what concerns the average treatment effects of training on job seeking and respective manners reported on Table 10 in appendix 2, there is evidence of a positive and statistically significant (at 10% level) impact of training on job seeking, on average a participant of training has a probability to seek 5% more for a job that an non participant. Furthermore, the impact of training on seeking for a job through public ministry websites is negative and statistically significant at 5% level. Possibly there is a limited information available in what concerns job applications and recruitment or selection processes on public ministry websites.

However there is no significant evidence of other more attractive ways of searching for it. Indeed, training displayed positive effects on searching for a job by job seeking' websites, LinkedIn, press, employment centre, visiting companies, networking, emailing, university posts and scholarships and mail, although these increases are not statistically significant.

5.3. Treatment effects of training on complementary training and pro-activity.

5.3.1. Treatment effects survey 3 months.

The follow-up survey three months after the intervention included questions relative to whether individuals participated on further complementary training or not and respective reasons adjacent to participation (CV enrichment, personal interest, occupation of spare time, obligation by IEFP, to gain entrepreneurial skills or to create own business and to emigrate). In addition, some questions regarding whether individuals modified CV when applied for a job, asked help for CV improvement or applied for a job since December 2012 were asked. These last variables can constitute measures of individual's pro-activity when finding a job.

Table 11 below shows the impact of training on the outcome variables described above.

Table 11. Impact of training on complementary training and proactivity _3months

Explanatory variables		Training program	
Dependent variables	Complementary training	-0.0559	-0.1009
		(0.0994)	(0.1145)
	Constant	0.3636	0.2495
		(0.6557)***	(0.6316)
	Modify CV	0.0998	0.0978
		(0.0984)	(0.1148)
	Constant	0.6182	1.1074
		(0.06622)***	(0.41701)**
	Help CV	0.1627	0.13288
		(0.0822)**	(0.09562)
	Constant	0.7091	0.6927
		(0.0619)***	(0.033)**
	Apply for a job since December	0.0107	0.0148
		(0.0361)	(0.376)
	Constant	0.9636	1.237
		(0.0255)***	(0.1762)***
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others, Has unemployment benefit, Has plans to become self-employed, Job search, Employed

Degree in Social Sciences: Philosophy, Psychology, Anthropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Independently of the reason for participating in a complementary training, the impact of training on complementary training is not statistically significant, an individual that participated on entrepreneurship training is no more likely to participate on further training processes relative to control group. In what respects the probability of changing CV when applying for a job and applications for a job since December 2012, the effects of training are positive, although not significant. Concerning the likelihood of a treated individual to ask for

help for CV improvement, the impact of training is positive and statistically significant at 5% level, he or she is 16.3% more likely to ask for help than a non treated person.

5.3.2. Treatment effects survey 6 months.

The follow-up survey six months after the intervention asked the same questions than the previous one, adding a set of reasons for taking further complementary training (if the reason to attend a complementary training is due to a suggestion by employer) and for not taking complementary training (economic, lack of importance, lack of time, opportunity, supply or available vacancies, pregnancy or employed status). In terms of pro-activity measures, a question about whether an individual adapts communication while in a job interview or not was included.

There is no statistical evidence that the training program had effects on the estimated variables. Nevertheless, the outcomes on complementary training are positive, in this sense there was an improvement when compared to the results of the previous survey. The reverse is verified on applications for a job since February 2013. The effects of training on adaptation of communication while in interview is negative and not significant. This might mean that the skills obtained during the training process were not sufficient for participants to adapt communication and feel confident to do a oral presentation while in interview. Because communication skills and abilities are something that also requires some practice and experience and not only receiving passively advice or information. The results are reported on Table 12.

Table 12. Impact of training on complementary training and proactivity _6months

Explanatory variables		Training program	
Dependent variables	Complementary training	0.0765	0.0201
		(0.1054)	(0.1236)
	Constant	0.4364	-0.057
		(0.0676)***	(0.327)
	Modify CV	0.057	0.0978
		(0.085)	(0.0997)
	Constant	0.764	1.009
		(0.0579)***	(0.2905)***
	Adapt communication	-0.037	-0.0299
		(0.0668)	(0.07299)
	Constant	0.909	0.6238
		(0.0392)***	(0.4222)
	Apply for a job since February	-0.0256	-0.0257
		(0.0256)	(0.0247)
	Constant	1	1.165
		3.47E-18	(0.1525)***
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others, Has unemployment benefit, Has plans to become self-employed, Job search, Employed

Degree in Social Sciences: Philosophy, Psychology, Anthropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

5.4. Treatment effects of training on confidence and optimism levels.

In both follow-up surveys there were integrated questions about confidence and optimism levels of participants. It is expected that the entrepreneurship training causes confidence levels to increase, once treated individuals acquire a set of hard and soft skills that might enable them to become more confident about their personal analysis (strengths and weaknesses) or in the occurrence of positive thoughts regarding their professional situation. Due to the training participation, individuals might feel that they have acquired more soft skills that would help them becoming more confident when exposing strengths and weaknesses. Simultaneously, when acquiring hard (managerial) skills they could become more confident regarding their professional situation, that is, being employed until the end of 2013.

5.4.1. Treatment effects survey 3 months

In the follow-up survey after three months of the intervention there was solely one question concerning confidence levels of participants on finding a job until the end of 2013.

The results are reported on Table 13 in Appendix 3. The effects of entrepreneurship training on confidence levels is not significant, an individual that participates on training is no more likely to become confident on being employed until the end of 2013, when compared to control group. This result might be potentially influenced by other variables beyond the scope of the analysis of this study such as the influence of Portuguese economical and financial crisis on confidence and trust levels, especially considering a measure directly linked to labour market efficiency and flexibility.

5.4.2. Treatment effects survey 6 months

In the follow-up survey six months after the program ended, there were included an exhaustive set of measures about confidence levels that were compared between May 2013 (month of the survey 6 months), January 2013 (before the survey 3 months) and November 2012 (during the training or immediately after the end of the training), aiming at inferring the variation of confidence levels over time, from the most recent period- immediately after training to the more actual one - May 2013, six months after training had ended. The variables include confidence levels relatively to exposure of self qualities and flaws while in interview, the ability to do an oral presentation if asked while in interview and the frequency of occurrence of positive thoughts about individual's professional situation.

Tables 14, 15 and 16 available in appendixes 4, 5 and 6, respectively present the effects of training on confidence levels in November 2012 relative to January 2013 in what respects self qualities and flaws and self-belief on oral presentations performance. The impact of training on confidence levels either on self qualities or self flaws is less in November 2012 relative to January 2013 and it is statistically significant at 1% level. Immediately after training participants are, on average 25% less likely to be confident relative January 2013 and comparing to non-participants. Relatively to oral presentations, there is no strong evidence that the intervention had affected confidence levels in November 2012 relative to January 2013.

The impact of training on confidence levels in January 2013 relative to May 2013 are reported on Tables 17, 18 and 19. There exists evidence that the training had positive effects on reporting confidence levels either on self qualities or self flaws, being higher in January than in May 2013 and statistically significant at 5% and 1% levels, respectively. This means that an individual who participated in the intervention is likely to become 15% more confident when reporting self qualities and 20% more confident when reporting self flaws in January comparing to May 2013. There is no significant evidence that the training program had had effects on self-belief on oral presentations (for further details on this variable see Table 19 available in the appendix 7).

Table 17. Impact of training on confidence levels: self qualities January over May 2013 (6months)

Explanatory variables		Training program	
Dependent variables	Self qualities_job interview	0.0182	-0.0055
		(0.1145)	(0.119)
	Constant	1.982	1.787
		(0.0486)***	(0.2327)***
	Self qualities_job interview: more	0.151	0.1298
		(0.0723)**	(0.0742)*
	Constant	0.0545	0.065
		(0.031)*	(0.1645)
	Self qualities_job interview: same	-0.283	-0.2651
		(0.0917)***	(0.0938)**
	Constant	0.873	0.6575
		(0.0454)***	(0.2119)***
	Self qualities_job interview: less	0.1324	0.1353
		(0.0743)*	(0.0769)*
	Constant	0.0727	0.2779
		(0.0354)**	(0.1499)*
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,...

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 18. Impact of training on confidence levels: self flaws January over May 2013 (6months)

Explanatory variables		Training program	
Dependent variables	Self flaws_job interview	0.1828	0.1577
		(0.089)**	(0.0844)*
	Constant	1.945	2.062
		(0.301)***	(0.1754)***
	Self flaws_job interview: more	0.2051	0.1713
		(0.0654)***	(0.0656)**
	Constant	2.78E-17	0.141
		9.81E-18 **	(0.147)
	Self flaws_job interview: same	-0.2275	-0.1849
		(0.0791)**	(0.0805)**
	Constant	0.9455	0.7801
		(0.3095)***	(0.1748)***
	Self flaws_job interview: less	0.0224	0.0136
		(0.0531)	(0.0499)
	Constant	0.0545	0.0792
		(0.031)*	(0.0925)
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 20 available in appendix 8 shows the results for the effects of training on confidence levels in May 2013. Besides the non –significance of the outcomes, the confidence levels for both self qualities and flaws had decreased when compared to January 2013. The outcomes for oral presentations confidence levels remained positive and insignificant.

The results regarding the frequency of positive thoughts in November 2012, January and May 2013 are reported on Table 21 in appendix 9. From November to May, the frequency of positive thoughts passed from negative to positive, however the results are not statistically significant.

From the inference exposed above, it is reasonable to assume that training might influence confidence levels of individuals, especially the ones directly linked to their strengths and weaknesses, but the recovery of that confidence is slow and only remains for short periods of time. As long as half a year after the training program passed by, confidence levels started to diminish and became insignificant.

5.5. Treatment effects of training on main income source

5.5.1. Treatment effects: survey 6 months

This study also included measures of main income sources of individuals. If training has potential impacts on professional situation, it is expected that it would had effects on some income variables. Table 22 available in appendix 10 reports the results concerning main income sources. There is no statistical evidence that the training had impacts on the different income sources.

6. Heterogeneous effects

When estimating heterogeneous treatment effects, one adds a set of interactions between baseline characteristics and the treatment dummy to the model.
Inferences of heterogeneous effects display relevant implications for behavioural research and policy decision making. It is important to understand which kind of individuals are more likely to benefit from a given intervention, so that more efficient selection of programs can be made. Furthermore, by identifying those individuals, it is also possible to balance different goals, namely cost diminishing, maximizing average outcomes and decrease variation of results within a given sample.(Manski 2007).

6.1. Heterogeneous effects of training on behavioural measures: networking and job's offers applications.

6.1.1 General heterogeneous effects on behavioural measures

Table 23 and 24 available in appendixes 11 and 12, respectively show estimates for the main outcomes regarding behavioural measures of the intervention, that is LinkedIn and job offers applications to *Vida Activa*. Each row includes results from a single regression, interacting the treatment dummy with some of baseline covariates (female and degree levels).

With respect to LinkedIn as a behavioural measure of networking, there is evidence that a woman who is treated is less likely to do comments across topics (-91%) suggested when compared to a man who is not treated, this result is statistically significant at 10% level. Moreover, a treated woman is also less likely to make spontaneous posts (-51%) and comments on spontaneous posts (-114%) than a non treated man, being these outcomes statistically significant at 5% level. There is no evidence that a treated individual who detains a degree in sciences or a degree in education or a degree in Others is more likely to make comments, likes, posts, spontaneous posts, comments on spontaneous posts or to share business cards spontaneously than a non-treated one who is neither graduated in Sciences, nor in Education nor in Others. In contrast, a treated individual who detains a degree in Social

Sciences is less likely to like comments across topics (-8.4%) than a non treated one who does not detain a degree in Social Sciences, this result is statistically significant at 5% level. For the remaining variables there is no evidence that an individual who participates in the training and has a degree in social Sciences does significantly more or less comments, posts or likes and shares business cards spontaneously compared to a non treated individual that does not have a degree in Social Sciences. Let one remind that degree in Others includes areas of Sports, Design, Physiotherapy and Geography.

Relatively to *Vida Activa* job offers applications, the effects of being treated and being woman and detaining a degree on all different areas are not statistically different from not being treated, being a man and do not having a degree across defined areas, respectively. Concerning applications that suit better individual profile or interests, there is statistically significant evidence (at 10% level) that a woman treated is more likely (24%) to apply for jobs more adequate to her than a man who is not treated. In terms of job applications (general or suitable offers), the interactions between treatment and degree areas did not show any substantial difference between treated individuals who detained a degree in one of defined areas and control ones not having a degree on the same defined areas.

6.1.2 Heterogeneous effects on behavioural measures: survey 3 months

Table 25 available in appendix 13 reports the main results of heterogeneous effects for the same variables previously described in section 5.1.2. For the first row, where is presented the interaction of treatment and female dummies, there is evidence that a woman who is treated was less likely to add connections since December 2012 (-40%), compared to a non-treated male. This result is statistically significant at 10% level. For the remaining variables, there is no statistically significant difference between treated female and non treated male. The second row presents the outcomes for the interaction between treatment and degree in Sciences. Someone who is treated and detains a degree in Sciences is more likely to change profile (33%) in LinkedIn than someone not treated and not detaining a degree in Sciences, this result is statistically significant at 10% level. In addition, a person who participates in training and has a degree in Sciences is more likely to seek for a job (55%) through LinkedIn, being this estimate statistically significant at 5% level. There is no further evidence for the remaining variables that a treated and graduated in Sciences individual differs substantially from a non treated and not graduated in Sciences. For the third row, being treated and possessing a degree in Education affects negatively the usage of LinkedIn (-21%) at least once a week and it is

statistically significant at 5% level. Similar results are achieved for adding connections (-45%) through LinkedIn's recommendation tool and through contacts of email account (-45%) and for job seeking (-34%), all negative and statistically significant at 10% level for an individual treated and having a degree in Education compared to one non treated and not graduated in Education. From the estimates of fourth row for all variables, there is no substantial difference between someone who is treated and has a degree in Others relative to someone who is not treated and does not have a degree in Others. At last, results displayed on the fifth row suggested that an individual that is treated and graduated in Social Sciences is more likely to add connections (40%) using the LinkedIn's recommendation tool than someone who is not treated and does not possess a degree in Social Sciences, being this estimate statistically significant at 10%level.

6.1.3 Heterogeneous effects on behavioural measures: survey 6 months

Tables 26 and 27 available in appendixes 14 and 15, respectively report the main results of heterogeneous effects for the same variables previously described in section 5.1.3.

In the first row of Table 26, where interactions between treatment and female dummies are reported, it is verifiable that being treated and woman leads to less job seeking (-40%) through LinkedIn, relatively to a man not treated. This estimate is statistically significant at 5% level. For the remaining variables there is no statistically significant difference between treated women and non-treated men. There is no evidence that a person who had training and detains a degree either in Sciences, Education or Others had statistically different behaviours in terms of LinkedIn measures relative to someone who had not training and does not detain a degree neither in Sciences, Education nor in Others. In what respects a treated individual who has a degree in Social Sciences, there is evidence that he or she is more likely to add connections (40%) on LinkedIn through interest fields or companies than someone that was not treated and does not have a degree in Social Sciences, this is statistically significant at 1% level. The opposite is observable for the estimates of adding connections by accepting invitations, that is an individual participating in training and graduated in Social Sciences is less likely to do connections by accepting invitations (-41%) than his or her counterpart (statistically significant at 5% level). Furthermore, someone who was treated and has a degree in Social Sciences perceived negatively the utility of LinkedIn (-2.22) compared to a person who was not treated and has not a degree in Social Sciences, being this estimate statistically significant at 5% level.

Regarding the estimates of Table 27, the effects on applications to job offers by *Vida Activa*, on applications and share of offers is not statistically different between a treated women and a non-treated man. The same conclusion is driven from the estimates on the second row that presents the interactions between treatment and degree in Sciences dummies. Therefore, the effects on the estimated variables are not statistically different from someone who received training and has a degree in Sciences and someone who did not receive training and has not a degree in Sciences. On the other hand, there is evidence that someone who participated in training and is graduated in Education is more likely (49%) to receive job offers by *Vida Activa* but less likely to apply (-43%) for them than his or her counterpart, being these results statistically significant at 5% and 10% levels, respectively. There exists no support that a person who had participated in training and has a degree in Others is more or less likely to receive, apply or share job offers of *Vida Activa* relatively to someone who had not participated in training and has not a degree in Others. Finally, there is support that an individual who is treated and holds a degree in Social Sciences is less likely to receive job offers (-38%) from *Vida Activa* compared to one not treated and not holding a degree in Social Sciences. Nonetheless, an individual treated and graduated in Social Sciences is more likely to share offers (36%) than his or her counterpart. Both estimates are significant at 10% level.

6.2. Heterogeneous effects of training on the main outcomes of employment, full-time employment, self-employment plans, complementary training and pro-activity, confidence levels.

6.2.1. Heterogeneous effects survey 3 months

Table 28 available in appendix 16 presents the heterogeneous effects of the main outcomes described in sections 5.2.1, 5.3.1 and 5.4.1. The first row includes estimates for the interaction between treatment and female dummies. There is no statistically significant evidence that a treated woman is more or less likely to be employed, full-time employed, has plans to become self-employed, search for a job, follows further complementary training or to be confident about finding a job until the end of 2013 than a non treated man. The second row presents the coefficients for interaction between treatment and degree in Sciences. An individual who was treated and has a degree in Sciences is more likely to be full-time employed (30%) than an individual who was not treated and has not a degree in Sciences, being this coefficient statistically significant at 10% level. For the remaining variables there is no support for

substantial differences between someone treated and graduated in Sciences and non treated and non graduated in Sciences. When analysing the third row, there is no substantial difference on all variables between a person who attended training and holds a degree in Education and a person who did not attend training and does not hold a degree in Education. The fourth row includes outcomes of interactions between treatment and degree in Others. A person who participates in training and detains a degree in Others is less likely to attend complementary training (-43%) relatively to his or her counterpart. This estimate is statistically significant at 10% level. For the remaining coefficients, there is no strong evidence that there are differences between a treated individual graduated in Others and a non treated one not graduated in Others. Concerning the last row of interactions, it is possible to infer that a person who had participated in training and has a degree in Social Sciences is less likely to be full-time employed (-25%) when compared with someone who did not participated in training and does not hold a degree in Social Sciences. There is no further significant evidence that a treated individual graduated in Social Sciences is more or less likely to be employed, to have plans to become self-employed, to follow complementary training, to search for a job or to be confident about finding a job until the end of 2013 than his or her counterpart.

6.2.2. Heterogeneous effects survey 6 months

Tables 29, 30 and 31 available in appendixes 17, 18 and 19, respectively report the heterogeneous effects of the main outcomes described in sections 5.2.2, 5.3.2 and 5.4.2. The first row of Table 29 presents the coefficients of interactions between treatment and female dummies. There is evidence that a treated woman is more likely to search for a job (8%)and to attend complementary training (54%) than a non treated male. These estimates are statistically significant at 10% and 5% levels, respectively. Concerning the second raw, where interactions between treatment and degree Sciences are reported, there is evidence that an individual who attained training and is graduated in Sciences is more likely to be full-time employed (26%) than someone who did not attend training and has not a degree in Sciences, being this coefficient statistically significant at 10% level. For the remaining variables, there is no statistical significant difference between an individual who participated in training and holds a degree in Sciences and one that had not participated in training and does not hold a degree in Sciences. Analysing the third row, there is no evidence that an individual who attained training and has a degree in Education is statistically different in what concerns employment, full-time employment, self-employment plans, seeking for a job and following

complementary training relatively to an individual who was not treated and does not have a degree in Education. The same conclusion can be inferred from the coefficients relative to interactions of treatment and degree Others (row 4). Relating to the last row, a person who attended training and detains a degree in Social Sciences is less likely to have plans to become self-employed (-50%) and to search for a job (-8%) than someone who did not receive training and has not a degree in Social Sciences. Both estimates are statistically significant at 5% and 10% levels, respectively. For the remaining variables, there exists no statistically significant difference between someone treated and graduated in Social Sciences and his or her counterpart.

On the subject of Table 30, the heterogeneous effects of outcomes relative to confidence levels in January over May 2013 are exposed. The first row gives the estimates of interaction between treatment and female dummies. There is no statistically significant evidence that a treated women has more or less confidence levels in January over May 2013 than a non treated mean, either on self-qualities and flaws exposure or in oral presentations if asked while in interview. The estimates on the second row indicate that an individual who attended training and holds a degree in Sciences is less likely to be confident (-57%) in January over May 2013 in what respects exposure of self-flaws, when compared with an individual who did not attend training and has no degree in Sciences, being this result statistically significant at 5% level. For the remaining variables there is no statistical significant difference between a person who participates in the program and has a degree in Sciences and his or her counterpart. For interactions between treatment and degree in Education (row 3) and degree in Others (row 4), there is no statistical significant difference on all confidence levels between an individual who is treated and has a degree in Education or a degree in Others and his or her counterpart. Concerning the last row, where the coefficients of interactions between treatment and degree Social are provided, there is evidence that someone who attained training and detains a degree in Social Sciences is more likely to be confident (40%) about exposure of self flaws and about oral presentations performance (36%) if asked while in interview in January over May 2013. Both estimates are statistically significant at 10% and 5% levels, respectively.

From the analysis of Table 31, where the heterogeneous effects respected to confidence levels in May 2013 are shown, there is no statistically significant evidence for none of the coefficients that treated individual and woman, treated individual and who holds degree in Sciences, Education, Others or Social Sciences (rows 1,2,3,4 and 5, respectively) are more or

less confident relative to self qualities, self flaws or oral presentations compared to his or her counterpart.

6.3. Heterogeneous effects of training on the main income sources

6.3.1. Heterogeneous effects: Survey 6 months

Table 32 available in appendix 20 includes the heterogeneous effects regarding the main income sources analysed on the section 5.5. It is verifiable that a treated woman is more likely to detain a salary of someone within the household (from 36% to 42%), of someone not belonging to the household (from 24% to 27%), she is more likely to have more savings (from 22% to 25%) and to have more financial assets (from 22% to 25%) than a non-treated man. This results are statistically significant at 10 and 5% levels, respectively. An individual who had training and has a degree in sciences is less likely to have his/her own salary (-21%) and to have savings or financial assets (-22%) than an individual who did not participate on training and does not hold a degree in sciences. These outcomes are statistically significant at 10% level. The fourth row presents the interaction term between the treatment and degree in Others. A treated person who detains a degree in others is more likely to have a unemployment subsidy (50%), to save more (26-27%) and to have more financial assets (26-27%) than someone not treated and not detaining a degree in Others. These results are statistically significant at 5% level. For the remaining interactions (treatment and degrees in Education and Social Sciences), there is no substantial differences between treated and holders of degree in education or social sciences and their counterparts.

7. Discussion of the study's results and implications for future research and practice

In this section, one aims at providing a brief discussion regarding contributions of this study to the existing literature on entrepreneurship training and about the main findings of this intervention. Afterwards, its major limitations and implications for future research and practice will be mentioned.

7.1. Discussion on contributions to the existing literature on entrepreneurship training and on the main findings of this intervention.

Firstly, this study offers an analysis of Portuguese unemployed, in the particular context of a profound economic recession, under a financial adjustment program and several structural reforms, including the labour market. Therefore, it proposes relevant policy implications regarding labour market policies and respective efficiency, given that in this particular conjecture, the response to these interventions might be more tenuous. The target unemployed population was solely based on graduated individuals, which makes this experiment distinctive. Because, besides the increase of the proportion of high qualified people in Portugal, there is still a high amount of low-skilled workers. Those are usually much more suitable to be eligible and prioritized in the context of active labour market strategies.

In addition, the vast literature review provided on this study reunites different active labour market policies and labour reforms provided across different geographic areas, which constitutes an important source of information and implications in the labour market context.

7.1.1. Behavioural measures

Secondly, the most relevant contribution of this study to the literature resides on the additional outcomes measured beyond the (self) -employment rates, namely the estimation of behavioural measures of networking and *Vida Activa* job offers. Behavioural measures constitute an innovative and rich approach on inferring in which dimensions individuals change their networking skills and/or improve their abilities to select better job vacancies according to their profiles, due to the training participation. This approach is relevant to understand which external influences (that are manipulated by the researcher) should be fostered so that they achieve the highest performance according with individual's characteristics and needs. In the specific case of this intervention, it was clear the immediate reflection of training on behavioural measures, namely in what concerns networking. Participants become more aware of the importance of using LinkedIn as a manner of finding a

job or updating personal and professional profiles, and also as a way of providing or receiving comments on relevant topics. The increase of frequency of usage of LinkedIn was clear, what reflects the positive impact of training on this behavioural measure. LinkedIn is assumed to be one of the most powerful business network sources used essentially by professionals, enabling visitors to be in contact with job opportunities.

Nevertheless, in what respects applications to *Vida Activa* job offers, the effect of training is not significant, that is participants were not able to distinguish between suitable and not suitable job offers when applying and did not share significantly applications between them. It is possible that the training program was not sufficient to provide enough information or tools on how applications should be done or how applicants can efficiently distinguish more or less suitable offers according to their profiles.

The results associated to the behavioural measures, in particular for Networking, were a good contribution of this study, once that they complement previous research on entrepreneurship training. Behavioural measures strongly depend on influences of trainers and on intrinsic characteristics of individuals, that is behaviour is easily changeable, influenced and shaped. Behaviour's changes are not only related to external influences or stimulus manipulated by the program itself, but also to the willingness of participants to change their attitudes according to acknowledge and advice obtained. In this sense, behaviour's changes are more likely to occur on a short-term basis, are potentially present still during the training process and are easily maintained and nurtured after training. These changes are not reliant on exogenous measures such conjecture indicators or labour market structure as in the case of confidence levels and (self)employment rates.

7.1.2. Confidence levels

Coefficients of the impact of entrepreneurship training on confidence levels about professional situation complete previous research. Confidence levels are not considered behavioural measures, since that the training program did not develop tools to influence changes on them, as in Networking where, for instance, topics for comments were made in purpose to incite individuals' behaviour. Therefore, confidence levels are dependent on conjecture indicators, and hence, their evolution is less stable, being not a static measure. Indeed, training might influenced confidence levels of individuals, especially the ones directly linked to their strengths and weaknesses. However, the recovery of that confidence since November 2012 was slow and only remained for short periods of time. After three months of

training (January 2013) participants became more confident, potentially because they believed that the new knowledge acquired in the training would lead them to find easier a job. As long as half a year after the training program passed by (May 2013), confidence levels started to diminish and became insignificant, possibly due to higher awareness of labour market conditions and requirements. Furthermore, individuals might became conscious that just having more knowledge would not be enough to become confident if they did not get the opportunity to put it in practice. Hence confidence levels may also depend on the combination of knowledge and experience/practice.

7.1.3. Employment

In what respects the outcomes of (full-time) employment, they did not exhibit statistical significance, meaning that there was no evidence that the training increased substantially the likelihood of being (full-time) employed for participants relative to non-participants. These findings differ from the existing literature, where there is evidence of increases of employment rates, at least in short-term. Given that these outcomes are strongly reliant on economic conjecture and change according to growth or recession cycles, one believes that there exists some explanations for these results in the context of Portuguese economic structure, in particular, the economic and financial crisis and the rigidity of Portuguese labour market, the learning curve and signalling theories and the presence of skills mismatch in the labour market.

- *Economic and Financial Crisis*

The evident general cause behind the lack of impact of training on employment rates is the economic and financial crisis and subsequent adjustment program that strongly affected the Portuguese economic structure. According to the most recent country report published by European Commission (European Commission, 2015), from 2008 to 2013, the Portuguese employment rate decreased 14.5%. Besides the slightly improvement (Figure 2) of the labour market due to several structural adjustments in particular since 2013's Spring, there is still a higher unemployment rate (13.7% in 2014).The youth unemployed achieved 32.2% in 2014. Long-term unemployment remains a major challenge (60%). Given the low growth and the persistent labour market mismatch, there is a risk that unemployment rates remain at high levels as well as the risk of poverty and social exclusion. In order to strengthen the economic growth and the exporting sector, there is need to absorb unemployed in the tradable sector.

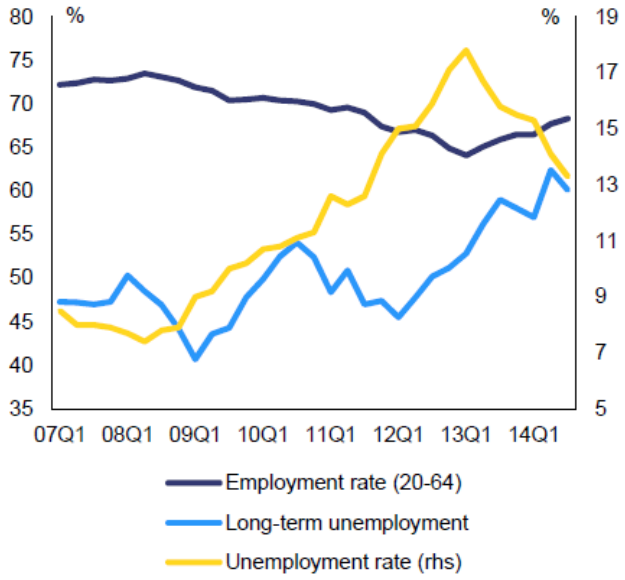

Figure 2 : Employment and unemployment rates and long-term unemployment (Portugal)

Source: European Commission

- *The Rigidity of Portuguese labour market*

The estimation of the outcomes of training was just based on the potential effects on the supply of labour, that is how individuals who benefited from the program would be more able to find a job. It is, thus convenient to consider the behaviour of labour's demand, the remaining component of labour market' structure.

In Portugal, the structure and specific features of the labour market constitute a potential reason behind the insignificant results on employment rates after participation in entrepreneurship training. The break-point of modification in the Portuguese labour market was under the EU-IMF financial assistance program of fiscal adjustment and reform implemented in May 2011, where an extensive labour market reform was conducted. However, due to the fact that this reform was just implemented in 2012, year of the intervention here analysed, it is reasonable to assume that for these participants, the effects of the reform on employment were not strongly visible when followed-up. It is predicted that labour market reforms on its structure is not immediately achievable and translated into individual's employment. Therefore, it is sensible to provide a description of Portuguese

labour market before the 2012's reform, which constitutes a complement to the information mentioned in section 2.3. With effect, pre-2012's reform, Portuguese labour market was characterized by a high legislation's rigidity (Eurobank, 2013 & European Commission 2015). This rigidity is translated on the highest average duration of unemployment rates, on the lowest job's creation rate and on the highest weight of temporary work among OCDE's countries (Portugal, P 2013). Rigidity is reflected by a strict employment protection legislation which favoured permanent job contracts, diminishing the incentives for employers to hire new workers in a permanent basis. As a consequence, a majority of hiring were done on short-term basis, contributing for the labour market segmentation. This segmentation, on its turn, limits the mobility of permanent workers, the adequate match between jobs and workers and ultimately harms human capital accumulation by temporary workers. Also, regarding temporary workers, there is a continuous transition between employment and unemployment status once that these individuals were not able to find a permanent job, which, in turn, increases poverty rates. When a company decided to fire someone during a down-turn, short-term workers whose contracts were finishing were lay off easily than permanent workers. Hence, it is highly likely that participants of training would be more affected by pre-2012's reform features than by the labour market's flexibility aimed by the 2012's reform. Indeed, according with European Commission (2015), *"the proportion of employees on temporary contracts remains high, although a substantial share of new contracts are being concluded on a permanent basis."(European Commission, Country Report Portugal 2015, p.28)*(Figure 3).

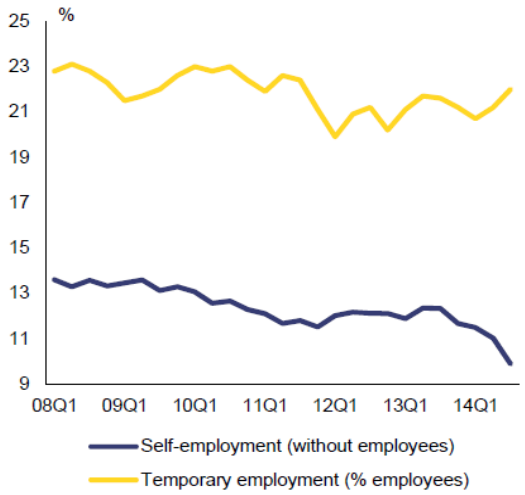

Figure 3 Temporary employment and self-employment (Portugal)

Self-employment as a proportion of total employment

Source: European Commission

Another characteristic of Portuguese labour market before the reform was the high generosity and reliance on unemployment benefits insurance system (one of the highest among EU member states, despite the significant reductions made after the financial adjustment program), which contributed to the decrease of incentives for job seeking or insertion in active labour market policies, such training or retraining that could reintegrate individuals in the labour market. In particular, subsidies were raised proportionally according to individuals age, in contrast, the eligibility of young workers and self-employed was limited.

The reform implemented in 2012 aimed at correcting this structure and reducing its rigidity by, among other measures, reducing severance pay, unemployment subsidies duration, easing the interpretation of fair dismissals, turning working hours more flexible and improving collective agreements at company level.

- *Learning Curves and Signalling Theories*

The concept of learning curve originally created by Hermann Ebbinghaus. (1885) might help to explain the impact of training on the employment. It describes how new skills or capabilities are acquired, firstly quickly, afterwards learning process becomes systematically slower (Figure 4). If one assumes that participants on training have already been employed and have also participated on other kind of trainings, which enabled them to acquire new knowledge and cumulative experience, their learning curve would become flatter as the acquisition of skills increases. Therefore, it is possible that this two-week training did not offer a substantial marginal increase of abilities to perform on labour market, as the learning curve theory suggests. This concept is fundamental to companies in hiring and training new employees in order to achieve production efficiency.

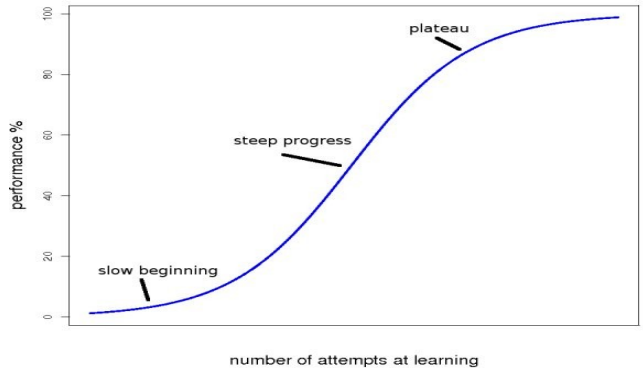

Figure 4: Learning Curve

Source : Hermann Ebbinghaus. (1885)

Signalling (Spence. M, 1973) is a consequence of asymmetric information and uncertainty on labour market between employer-employee. In fact, it is widely assumed that potential employees tend to overestimate their strengths and hide their weaknesses, which contributes to this information asymmetry. In general, it is difficult for employers to infer how a given individual performs a job, as a consequence, recruitment is assumed as an investment. Companies need previous observable characteristics and qualities of candidates that are considered as reliable, that is, *signals*. Signals are described by Spence as *"for those observable characteristics attached to the individual that are subjected to manipulation by him"(Spence. M, 1973, p. 357)* and are distinct from *indices,* which are unchangeable over time. Qualifications and educational levels, for instance are one of the strongest and common signals that employees can provide to employers. The higher the educational level, the better the signal that an individual provides to the labour market in terms of abilities and skills to perform a job efficiently.

However, it is likely that an individual that displays lower educational levels and attends training programs provides, in marginal terms, a more significant signal to the labour market than an individual that displays, initially, a higher level of education. That is, the marginal increase on signalling of a training program for high educated individuals is diminishing. Because training's participants display a tertiary education, the increase of knowledge that this training enabled them to acquire is diminishing when compared to unemployed individuals whose qualifications are lower and have also attended training programs. Hence the signalling that those individuals provide to the labour market are substantially lower than the one provided by less qualified individuals. That is, employers' beliefs regarding productive capacities provided by a signal of training by less qualified individuals is likely to adjust more than for high qualified individuals. In short, it seems reasonable to assume that the additional effects of this entrepreneurship training on graduate unemployed constitutes a weak signal to labour market, when compared to a similar intervention involving non-graduated unemployed, and so, might explain the non-significance of results obtained for employment rates.

- *Skills mismatch*

"Mismatch argument assumes there is excess labour supply in some sub-markets and excess demand in others"(Abraham G.K., p. 6).

One first type of mismatch resides on the imbalances between the number of job seekers and employment opportunities. (ILO 2014 b). Complementing the most general type of mismatch, *Skills mismatch* emphasized by ILO (2014 b) might explain the reason of non significance of employment outcomes. Even if participants detain a tertiary education and have acquired further managerial skills through training, it might be possible that these skills remain insufficient to become employed.

"Skills mismatch is an encompassing term which refers to various types of imbalances between skills offered and skills needed in the world of work."(ILO, 2014 b), p.6) These imbalances can emerge either from employee's side or from employer-company's side.

Employee's-side

According to ILO, there is between 25 and 45% of European workers that are over or under qualified for their job, which causes incongruence between supply and demand for labour. Over-education/over qualification stands for the excess of years of education/qualifications for the job's requirements or competences and under-education/qualification, the opposite relation. The imminent consequence of this fact is that the investment on education and skills that do not fulfil employers' requirements become fruitless. In some cases, people accept jobs for which they detain more qualifications that the required ones, being consequently underused (besides their potential high-education levels), causing employee dissatisfaction, turnover and unemployment; on other situations, individuals do not possess enough qualifications to perform the job and become unproductive on the company, leading equally to unemployment. In the case of Portugal, more than an half of workers are under qualified for their jobs and around 6% are overqualified. In order to overcome these imbalances, the ILO's report suggests linkage systems between classroom and workplace training and efficient job placement services. Technological innovation constitutes a major requirement in labour market, which implies not only displaying the adequate skills, but also a lifelong learning that enhances innovative skills. In addition, an identification and prediction of future needs of labour market can constitute a manner of improvement of education and training that correspond to labour market requirements and thus reducing skills' mismatching.

Company's side

Encouraging firms to review their human resources practices – recruitment, selection, talent development, training, performance appraisal, job design and reward systems - is essential to ensure that the skills and competences of employees are used to their best effect and

anticipating skills needs.(CEDEFOP, 2012) In fact, companies revealed some difficulties in predicting which kind of skills are desirable for jobs they offered. Recruitment processes and traditional selection tools, such resumes, interviews and reference checks might be not sufficient to infer the competences of candidates in what regards requirements by recent organizations as the ability to handle a large workload, tight deadlines, to engage in horizontal communications or decentralized decision making and teamwork/leadership spirit. It is also important that enterprises assess the reasons behind skills mismatch by analysing the relationship between workers' skills, their past job positions and the nature of responsibilities they are supposed to perform on their current positions.

At the same time evidence suggests that firms which adopt high performance workplaces (HPWPs) are more able to reduce the skills' mismatch. HPWPs are a set of human resources practices including targeted recruitment, continuous training, job rotation, teamwork, empowerment, communication and performance management that enhance the development and optimal, full utilisation of staff skills. Hence, they guarantee a continuous highly skilled labour force that fully exercise their skills on the job. Companies adopting in-company training and continuing vocational education and training (CVET) are more likely to narrow or mitigate skills' mismatch.

In short, it is possible that the target individuals of the training, even holding a university degree (not relating to business or management) and completing a entrepreneurship training remain, under-qualified for the current requirements of potential employers.

7.1.4. Self-employment

Self-employment is an estimate that deserves special consideration. *"The simplest kind of entrepreneurship is self-employment". (Blanchflower, D. p. 473).*

On one hand, self-employment promote innovation and invention, enabling the creation of new jobs, being a manner of overcoming poverty. The emergence of new businesses also increase competition and generates better welfare for society in general. Self-employment enables simultaneously raises on self-reliance and well-being. On the other hand, the risk imminent of a business failure and loss of investments or own home - usually used as a collateral - causes a barrier to prosecute it (Blanchflower, D. 2000). As a consequence there are government financial incentives and subsidies to enhance business creation (France, UK and United Sates).

On this research, the positive outcomes of self-employment lost significance across time, which suggests that the intentions to be self –employed became no longer substantially

different between training participants and non-participants, what are actually congruent with existing literature. This evidence is interesting to further explore given that self-employment is considered as an alternative to labour market rigidities, in which Portugal is still inserted (Centeno, M. (2000)).

The timid intentions to become self-employed might be explained by the perceptions of uncertainty, market information asymmetry or unavailability, credit constraints, lack of financial incentives and risk inherent (risk aversion) to the creation of a business (including legal status of the company) as well as its sustainability over time, given the particular acute economic and financial context in which the training was implemented - end of 2012. Indeed, one of the consequences of the crisis was the decrease of self-employment rates and thus, the findings achieved in this study are congruent with this tendency. Immediately after training, it is possible that individuals were not totally aware of the risk inherent to business creation and evidenced lack of market information that is determinant to take decisions regarding following or not a plan for business creation. For more risk averse individuals, lack of market information can deter them to follow their plans to create a business.

Furthermore, Portugal is one of European countries that provides less financial incentives (the expenditure on incentives was 0.003% of GDP in 2011) and adequate ALMPs that stimulate self-employment (ILO, 2014 a). As evidence in literature suggests, these incentives are determinant to stimulate business creation. Moreover, the recent labour market reform maintained some restrictions for benefits regarding self-employment, which may deter plans and motivations to create own businesses.

7.2. Limitations of the study

As behavioural measures were self-reported, one potential limitation of their measurement is related to the fact that individuals might not be honest when reporting their current behaviours, causing biased results. Therefore, the recurrence of these kind of measures without adequate observation methods of self-reported behaviours might limit the external validity and reliability of this study in what respects networking and job offers applications.

In addition, this study analysis is primordially focused on short-term effects of training program (the program's design itself is of short-term), under a recession context. There was no possibility of following-up the participants taking into account medium-long terms, when the first signals of Portuguese economic recuperation would also have had different impacts on the results.

Furthermore, there was a lack of inference of the impacts of entrepreneurship training on quantitative measures for plans to become self-employed such as risk aversion or risk preference and qualitative ones such competences of a successful entrepreneur (for instance, planning and organization or customer relationship management). These measures would give better perceptions on how to improve the intervention so that the plans to become self-employed remained stable and achievable in the long-term.

At last, this intervention targeted a low number of individuals when compared to similar ones on existing literature, which was driven by the lack of financial resources and limited capacity, compromising direct comparability with other similar interventions involving a larger number of individuals.

7.3. Implications for future research

In order to complement the analysis conducted on this study, future research might include measures of risk aversion and risk preference. It would be relevant to understand what drives individuals to create their own business, besides the acquisition of entrepreneurial and managerial skills enabled by the intervention. Risk aversion is one of the best measures to infer if the individual is prone to create his/her own business, particularly under recession periods, when these feelings are intensified. As portfolio theory suggests an individual should diversify his/her portfolio and avoid to concentrate all resources in one single risky activity (Blanchflower. D 2000). On the other hand, it is strongly predicted that individuals who have preferences for financial risk are more likely to create their own business.

The perceptions of risk aversion can be inferred through, for instance, the provision of more and less risky/uncertain hypothetical scenarios. It is predicted that high risk averse individuals would be less likely to be self-employed.

In addition, variables that could indicate some competences of a successful entrepreneur, such as planning and organization (business plan), customer relationship management (interactive skills), self-promoter, innovative skills and continuous business follow-up might be included to infer if people that are trained acquire more of those competences in order to conduct successful businesses.

As it is underlined by European Commission, *"Entrepreneurship refers to an individual's ability to turn ideas into action. It includes creativity, sense of initiative, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. The entrepreneurship competence includes therefore transversal skills and attitudes as well as more specialized knowledge and business skills."(European Commission website – Enterprise*

and Industry- Education &Training for Entrepreneurship). Hence, the development of these kind of skills should be integrated in the entrepreneurship training goals.

It is however clear that some individuals have already more innate and intrinsic disposition to be entrepreneur than others, which can caused some bias on the results estimation, if those characteristics are not controlled conveniently.

Another implication for future research would be the inclusion of qualitative research as the indicators described above suggest.

In addition to those indicators, an overall satisfaction of the training might be assessed by a focus group of participants, integrating measures of training's duration's suitability, interest and utility of subjects approached, usefulness of complementary activities made and individual's suggestions for the program improvement or about other types of training that best fit their needs and profiles (for instance a mix of classroom training and in-company training or retraining). This is extremely important, given that, through this qualitative survey, participants are empowered to propose new ideas on their point of view as the main beneficiaries of the intervention, enhancing their feeling of integration in the process. The focus group approach seems adequate once the interaction between participants with different educational backgrounds would bring the best source of information concerning the best training approach(es). Moreover, qualitative research would enable to explore the general overview of the training's performance. Consequently, it can guide and complement quantitative research.

Implications for future research may also imply exploring other types of entrepreneurship training of longer duration, for instance the design and implementation of a program that includes not only classroom learning as the current one evidences, but also in-company training. In-company training might be included on entrepreneurship training, because it allows participants to have a direct contact with potential employers and enable them to understand companies' functional areas, career paths, job's design and requirements or skills they value the most, contributing to mitigate skills mismatch. Participants gain additional managerial skills if they wish to create their own business. It is predicted that this mixture of training approaches will lead to larger impacts on employment and self-employment. It is evident that to add a in-company training component on the original program, an increase of its duration/length and available resources is a necessity, once that in-company training implies a minimum total of hours to be effective.

Moreover, a medium-longer term analysis of the training effects as well as other kind of empirical approach would help to estimate the effectiveness of these interventions. For

instance, a difference-in-difference approach would complement the analysis here provided, by comparing treatment and control groups, before and after the intervention. This empirical design was not possible to conduct, due to the lack of data's availability, but constitutes a possibility for future research, if there is an improvement of this program with the same sample of individuals.

At last, even challenging, it is convenient to infer the costs and benefits (cost-benefit analysis) of this kind of interventions, so that improvements and better policies could be designed and achieved.

8. Conclusion

Unemployment rates are an important structural indicator, displaying both economic and social dimensions. An increase of unemployment means a decrease of purchasing power of individuals and ultimately might imply a loss of talent and unique human capital out of the labour force, culminating in social exclusion, disintegration and substantial raise of government expenditures (social benefits and ALMPs).

The present Master thesis aimed at studying the impact of an entrepreneurship training on four main groups of outcomes of its participants compared to non –participants: 1). Networking and job's offers applications; 2). Employment, self-employment's plans, full-time employment and job seeking strategies; 3). Complementary training and pro-activity 4). Confidence and optimism levels. This training program, inserted in the program *Vida Ativa-Formar e Integrar (Active Life – Educate and Integrate)* was implemented through a partnership between Nova School of Business and Economics and Institute for Employment and Vocational Training (IEFP) and targeted Portuguese graduate unemployed. Its effects were inferred through the conduction of a randomized field experiment, the main data set was provided by IEFP and the remaining information was obtained by follow-up surveys. The general goals of this intervention involved the acquisition of managerial and entrepreneurial skills and also capabilities in terms of networking and job seeking strategies.

Given the particular economic and financial context in which the program was developed - end 2012 - and the features of Portuguese labour market, specially its rigidity and high segmentation, this study sought to understand in which dimensions an active labour market policy contributes to alleviate the unemployed rates among individuals that display high educational levels. Indeed a relative recent trend in Portugal regards the increase of population that holds high qualifications, but remains unemployed.

The most significant results of this study concerns the impact of training of behavioural measures of networking. Training's participants are significantly more likely to use LinkedIn for providing comments, likes or posts and also for adding connections (after three months of the intervention) or changing profiles (after six months of the intervention). Participants use at least every week the LinkedIn for essentially these purposes. Nonetheless, there was no evidence that the training enabled participants to distinguish more or less suitable job offers of *Vida Activa* or shared more these offers among them.

The results of this experiment suggested that individuals who participated in training are not significantly more likely to become employed or full –time employed when compared to non-participants. There is no evidence that the training influenced substantially job seeking strategies of the beneficiaries compared to non- beneficiaries.

There is evidence that the intention to become self-employed is positive but only of short-term and lose significance across time, which is congruent with existing literature. The same conclusion can be drawn from confidence levels' analysis. Confidence levels are no static, are reliable on conjecture indicators and may depend on opportunities to put in practice the new knowledge acquired.

Some explanations behind the non-significance of the results on employment were provided, including the eminent economic and financial crisis, the rigidity and segmentation of Portuguese labour market prior to 2012's labour market reform, the learning curves and signalling theories and the skills mismatch present on labour market.

For the self-employment results, those might be explained by the perceptions of uncertainty, market information asymmetry or unavailability, credit constraints, lack of financial incentives and risk inherent to the creation of a business as well as its sustainability over time, in particular under economic downturns evidenced in the context of this study.

The main implications for future research comprise the insertion of risk aversion and entrepreneur's characteristics measures in order to obtain better results or understanding of other components that interfere on self-employment decisions. Additionally, conducting a qualitative research as a complement to the quantitative one is also important. This qualitative research might include measures of participants' satisfaction and suggestions for program's improvement. Lastly, in order to acquire significant results on employment rates, the classroom training, in which this entrepreneurship training is based, should be complemented with other types of training namely in -company training due to its benefits for future employment likelihood and acquisition of managerial skills and competences, also determinant for self-employment.

Conducting a cost –benefit analysis of the training is considered a relevant step for future research, once it permits to analyse the performance and efficiency of this active labour market policy.

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Appendix 1 : Table 8

Table 8. Impact of training on job seeking and main ways of job seeking_3months

Explanatory variables		Training program	
Dependent variables	Job seeking	-0.0075	-0.0078
		(0.0314)	(0.044)
	Constant	0.982	1.081
		(0.0182)***	(0.073)***
	Job seeking' websites	-0.029	-0.0141
		(0.061)	(0.07528)
	Constant	0.928	0.98712
		(0.0354)***	(0.1636)***
	Linkedin	0.1227	-0.0452
		(0.0969)	(0.0989)
	Constant	0.236	0.0341
		(0.0579)***	(0.256)
	Potential employers' websites	-0.0168	-0.0844
		(0.097)	(0.1049)
	Constant	0.709	0.8227
		(0.0612)***	(0.2582)***
	Press	-0.0998	-0.0332
		(0.0984)	(0.112)
	Constant	0.382	0.0841
		(0.0662)***	(0.2997)
	Employment centre	-0.0452	0.0184
		(0.0969)	(0.1146)
	Constant	0.03273	0.1557
		(0.0639)***	(0.3578)
	Networking	0.0028	-0.0364
		(0.1029)	(0.1148)
	Constant	0.382	0.6489
		(0.0662)***	(0.3125)**
	Visit companies	-0.0163	0.0351
		(0.0932)	(0.1075)
	Constant	0.27273	0.5338
		(0.0601)***	(0.3288)
	N	94	86
	Public Ministry Websites	0.02948	0.05178
		(0.0662)	(0.07078)
	Constant	0.08163	-0.3496
		(0.0396)**	(0.2158)
	Human resources' websites	-0.0204	-0.0483
		(0.0204)	(0.04499)
	Constant	0.0204	-0.0725
		(0.0204)	(0.07659)
	Job seek at least once a week	0.0204	0.0303
		(0.0204)	(0.0306)
	Constant	0.9796	0.9931
		(0.0204)***	(0.0175)***
Controls		No	Yes
	N	85	77

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others, Has unemployment benefit

Degree in Social Sciences: Philosophy, Psychology, Anthropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Appendix 2 : Table 10

Table 10. Impact of training on job seeking_and_main ways of job seeking_6months

Explanatory variables		Training program	
Dependent variables	Job seeking	0.0545	0.0426
		(0.031)*	(0.0298)
	Constant	0.9455	0.809
		(0.031)***	(0.1487)***
	Job seeking' websites	0.011	0.0174
		(0.0361)	(0.0486)
	Constant	0.9636	1.056
		(0.0255)***	(0.0741)***
	Linkedin	0.0284	-0.0226
		(0.1036)	(0.1102)
	Constant	0.382	0.4999
		(0.066)***	(0.31661)
	Potential employers' websites	-0.0564	-0.0748
		(0.089)	(0.0999)
	Constant	0.8	1.1892
		(0.055)***	(0.255)***
	Press	0.0368	0.0708
		(0.1052)	(0.1177)
	Constant	0.5273	0.2535
		(0.068)***	(0.3467)
	Employment centre	0.0499	0.0442
		(0.0999)	(0.1066)
	Constant	0.3091	0.0097
		(0.063)***	(0.2848)
	Visit to companies	0.1343	0.1308
		(0.103)	(0.1096)
	Constant	0.3273	0.5617
		(0.06395)***	(0.335)*
	N	94	86
	Networking	0.092	0.1357
		(0.121)	(0.14069)
	Constant	0.293	0.27425
		(0.0721)***	(0.39858)
	Public ministery website	-0.1463	-0.141
		(0.056)**	(0.0586)**
	Constant	0.1463	-0.1369
		(0.056)**	(0.2487)
	Emailing	0.0141	0.01484
		(0.0454)	(0.0528)
	Constant	0.0244	0.0584
		(0.0244)	(0.0781)
	University posts or scholarships	0.0281	0.03571
		(0.0631)	(0.08)
	Constant	0.0488	0.03361
		(0.0342)	(0.2943)
	Mail	0.0385	0.0452
		(0.0383)	(0.04543)
	Constant	-1.04E-17	-0.0149
		1.7E-17	(0.0311)
	Job searching at least once a week	0.0488	0.05175
		(0.0342)	(0.03788)
	Constant	0.951	0.81284
		(0.0342)***	(0.2536)***
Controls		No	Yes
	N	67	63

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others, Has unemployment benefit

Degree in Social Sciences: Philosophy, Psychology, Anthropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Appendix 3 : Table 13

Table 13. Impact of training on confidence levels on finding a job until the end of 2013_3months

Explanatory variables		Training program	
Dependent variables	Confidence levels	-0.0487	0.0758
		(0.675)	(0.6846)
	Constant	6.477	7.966
		(0.4188)***	(1.6245)***
Controls		No	Yes
	N	79	71

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others, Job seeking in Linkedin

Degree in Social Sciences: Philosophy, Psychology, Anthropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Appendix 4 : Table 14

Table 14. Impact of training on confidence levels: self qualities November 2012 over January 2013 (6months)

Explanatory variables		Training program	
	Self qualities_job interview: more	0.0117	-0.021
		(0.0628)	(0.064)
	Constant	0.091	0.081
		(0.0392)**	(0.2036)
	Self qualities_job interview: same	-0.33007	-0.2486
		(0.0846)***	(0.1015)**
	Constant	0.9455	0.4559
		(0.031)***	(0.2831)
	Self qualities_job interview: less	0.25314	0.2695
		(0.0809)***	(0.0895)***
	Constant	0.0545	0.46333
		(0.0309)	(0.2054)**
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Appendix 5 : Table 15

Table 15. Impact of training on confidence levels: self flaws November 2012 over January 2013 (6months)

Explanatory variables	Training program	
Self flaws_job interview: more	0.0844	0.0606
	(0.0524)	(0.0489)
Constant	0.0182	0.2249
	(0.0182)	(0.1331)*
Self flaws_job interview: same	-0.33	-0.2804
	(0.0846)***	(0.0856)***
Constant	0.9455	0.3021
	(0.031)***	(0.221)
Self flaws_job interview: less	0.2457	0.2198
	(0.772)***	(0.0817)**
Constant	0.0364	0.4731
	(0.0255)	(0.1929)**
Controls	No	Yes
N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Appendix 6 : Table 16

Table 16. Impact of training on confidence levels: oral presentations November 2012 over January 2013 (6months)

Explanatory variables		Training program	
	Oral presentation_job interview: more	0.0224	0.0288
		(0.0531)	(0.0597)
	Constant	0.05455	0.2375
		(0.031)*	(0.1344)*
	Oral presentation_job interview: same	-0.1035	-0.119
		(0.0819)	(0.0855)
	Constant	0.8727	0.273
		(0.0454)***	(0.225)
	Oral presentation_job interview: less	0.0811	0.0904
		(0.0683)	(0.0721)
	Constant	0.07273	0.4895
		(0.0354)**	(0.1884)**
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Appendix 7 : Table 19

Table 19. Impact of training on confidence levels: oral presentations January over May 2013 (6months)

Explanatory variables		Training program	
Dependent variables	Oral presentation_job interview	-0.059	-0.0372
		(0.0831)	(0.0757)
	Constant	1.982	1.9055
		(0.0486)***	0.1801)***
	Oral presentation_job interview: more	-0.0033	-0.00263
		(0.0473)	(0.0469)
	Constant	0.0545	0.139
		(0.031)*	(0.118)
	Oral presentation_job interview: same	-0.0522	-0.032
		(0.07695)	(0.0743)
	Constant	0.8727	0.6275
		(0.0454)***	0.1854)***
	Oral presentation_job interview: less	0.0555	0.0346
		(0.0647)	(0.0584)
	Constant	0.07273	0.233
		(0.0354)**	(0.1399)*
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Appendix 8: Table 20

Table 20. Impact of training on confidence levels_May 2013 (6months)

Explanatory variables		Training program	
Dependent variables	Self qualities_job interview	-0.0438	-0.0624
		(0.1691)	(0.1728)
	Constant	3.018	2.982
		(0.1147)***	(0.5299)***
	Self flaws_job interview	-0.286	-0.2761
		(0.1886)	(0.2196)
	Constant	3.927	4.456
		(0.1098)***	(0.6427)***
	Oral presentation_job interview	0.1562	0.1044
		(0.2141)	(0.2262)
	Constant	3.818	4.897
		(0.1302)***	(0.6092)***
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciencies: Maths, Physics, IT, Engineering, Architecture

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Appendix 9: Table 21

Table 21. Impact of training on frequency of positive thoughts (6months)

Explanatory variables		Training program	
Dependent variables	Frequency of positive thoughts_November 2012	-0.1215	-0.1576
		(0.1562)	(0.1724)
	Constant	1.964	1.986
		(0.0899)***	(0.5201)***
	N	93	85
	Frequency of positive thoughts _January 2013	0.1169	0.1008
		(0.1589)	(0.17285)
	Constant	2.018	1.8631
		(0.084)***	(0.3874)***
	N	92	84
	Frequency of positive thoughts _May 2013	0.0145	0.0374
		(0.1986)	(0.2119)
	Constant	3.4728	4.6055
		(0.1187)***	(0.6023)***
Controls		No	Yes
	N	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Appendix 10: Table 22

Table 22. Impact of training on income sources_6months

Explanatory variables		Training program	
Dependent variables	Unemployment benefit	-0.0252	0.108
		(0.1053)	(0.0771)
	Constant	0.5636	0.5649
		(0.06759)***	(0.2503)**
	Own salary	0.1674	0.0749
		(0.104)	(0.048)
	Constant	0.3455	-0.4338
		(0.0648)***	(0.2248)*
	Salary of someone within the household	-0.0872	-0.1294
		(0.1049)	(0.1135)
	Constant	0.6	0.9784
		(0.0668)***	(0.3177)***
	Salary of someone not belonging to household	0.0117	0.0343
		(0.0628)	(0.0667)
	Constant	0.0909	-0.0639
		(0.0392)**	(0.1882)
	Savings	-0.0033	0.01003
		(0.0473)	(0.0426)
	Constant	0.0545	-0.066
		(0.031)*	(0.1579)
	Financial assets	0.224	0.03187
		(0.0531)	(0.0567)
	Constant	0.0545	-0.1586
		(0.031)*	(0.1977)
	N	94	86
	Capital rents	-0.1887	-0.0199
		(0.0189)	(0.0205)
	Constant	0.0189	-0.0619
		(0.0189)	(0.0713)
	Trainings	0.2703	0.1896
		(0.2696)	(0.01955)
	Constant	3.82E-17	0.01191
		3.47E-18 ***	(0.0317)
	Firing compensations	0.027	0.038
		(0.02696)	(0.0359)
	Constant	3.99E-17	0.0542
		3.47E-18 ***	(0.0599)
Controls		No	Yes
	N	90	83

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others, Employed

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Appendix 11: Table 23

Table 23. Heterogeneous effects Behavioral measures Linkedin

Explanatory variables		Training program*Female		Training program*Degreesciences	
Dependent variables	Total number of comments across topics	-0.4768	-0.9099	-0.2845	-0.00477
		(0.5012)	(0.5024)*	(0.4929)	(0.5078)
	Constant	2E-15	-0.6782	0.06182	-0.2697
		1.6E-15	(0.7693)	(0.03883)*	(0.7012)
	Total number of likes across topics	0.2059	0.1195	-0.3259	-0.2324
		(0.2519)	(0.2554)	(0.2116)	(0.2222)
	Constant	8.3E-17	-0.3023	-1E-16	-0.3731
		6.6E-16	(0.3812)	9.8E-18	(0.40996)
	Total number of likes on comments across topics	-0.2487	-0.9455	-0.7098	-0.1872
		(0.7738)	(0.6159)	(0.5871)	(0.5258)
	Constant	2.3E-15	-0.4197	-4E-16	-0.0087
		2.3E-15	(0.7291)	2.8E-17 ***	(0.7003)
	Number of spontaneous posts	-0.3021	-0.5111	-0.0893	0.0466
		(0.2616)	(0.2483)**	(0.2287)	(0.2326)
	Constant	1.2E-15	-0.0231	-2E-16	0.2099
		8.9E-16	(0.16605)	1.4E-17 ***	(0.2026)
	Number of comments on spontaneuous posts	-0.877	-1.1433	0.5313	0.7346
		(0.3992)**	(0.4283)**	(0.7068)	(0.7721)
	Constant	4.3E-15	-0.7826	5.8E-16	-0.2147
		1.4E-15 ***	(0.5075)	4.8E-17 ***	(0.4723)
	Number of likes on spontaneous posts	-0.2371	-0.3933	-0.2768	-0.1268
		(0.2731)	(0.2671)	(0.2341)	(0.2624)
	Constant	1.8E-15	0.0881	4.4E-16	0.2555
		9E-15 **	(0.2179)	1.4E-17 ***	(0.2761)
	Number of business cards shared spontaneously	-0.0588	-0.0578	-0.0313	-0.025
		(0.0583)	(0.0577)	(0.0314)	(0.0258)
		2E-16	0.2266	3.6E-17	0.0468
	Constant	2.1E-16	(0.0341)	3.5E-18 ***	(0.0531)
Controls		No	Yes	No	Yes
	N	94	86	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female Age Degree Education Degree Sciencies Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 23.cont. Heterogeneous effects Behavioral measures Linkedin

Explanatory variables		Training program*DegreeEduc		Training program*DegreeOthers		Training program*DegreeSocial	
Dependent variables	Total number of comments across topics	-0.56361	-0.3586	0.3061	0.6092	0.4103	-0.1186
		(0.4016)	(0.3829)	(0.6667)	(0.6857)	(0.5451)	(0.3949)
	Constant	0.0465	-0.2937	0.0612	-0.1584	0.5556	-0.3089
		(0.0328)	(0.7004)	(0.035)*	(0.6337)	(0.039)	(0.6641)
	Total number of likes across topics	-0.3259	-0.2762	0.2552	0.3441	-0.1111	-0.2981
		(0.2116)	(0.21203)	(0.3328)	(0.3293)	(0.2993)	(0.2008)
	Constant	-1.39E-16	-0.3747	-1E-16	-0.2933	2.8E-17	-0.3325
		5E-17 **	(0.4112)	5.6E-17 **	(0.36202)	6.8E-17	(0.38067)
	Total number of likes on comments across topics	-0.8839	-0.4767	0.33103	0.94062	0.3796	-0.8447
		(0.5499)	(0.40799)	(0.9445)	(0.9448)	(1.042)	(0.3779)**
	Constant	-1.11E-16	-0.0272	0	0.1765	-6E-17	0.04953
		1.36E-16	(0.6956)	1.6E-16	(0.6914)	1.4E-16	(0.6872)
	Number of spontaneous posts	-0.2634	-0.1817	-0.0793	0.08156	0.4444	0.1936
		(0.2011)	(0.2032)	(0.3201)	(0.3538)	(0.3044)	(0.28802)
	Constant	-2.78E-17	0.1942	-6E-17	0.2214	-3E-16	0.1486
		4.81E-17	(0.2034)	6.2E-17	(0.2171)	6.2E-17 ***	(0.15697)
	Number of comments on spontaneuous posts	-0.3393	-0.3179	-0.0862	0.005	0.1481	-0.0022
		(0.2881)	(0.295)	(0.4471)	(0.4633)	(0.3876)	(0.4138)
	Constant	6.66E-16	-0.2905	5E-16	-0.2678	6.1E-16	-0.1787
		6E-17 ***	(0.4693)	1.1E-16 ***	(0.4263)	1.1E-16 ***	(0.4465)
	Number of likes on spontaneous posts	-0.103	-0.0043	0.2517	0.4598	-0.0185	-0.3405
		(0.3187)	(0.3154)	(0.3255)	(0.3627)	(0.2988)	(0.2623)
	Constant	4.16E-16	0.2645	2.5E-16	0.3486	6.1E-16	0.2647
		7E-17 ***	(0.2801)	7.9E-17 ***	(0.2961)	7.9E-17 ***	(0.2521)
	Number of business cards shared spontaneously	-0.0313	-0.0258	0.1	0.1187	-0.037	-0.0355
		(0.0314)	(0.0266)	(0.0961)	(0.1155)	(0.037)	(0.0359)
		-3.82E-17	0.0469	-5.72E-17	0.0703	-3E-17	0.0462
	Constant	7E-18 ***	(0.0531)	6.94E-18 ***	(0.0715)	1.4E-17 ***	(0.0521)
Controls		No	Yes	No	Yes	No	Yes
	N	94	86	94	86	94	86

Appendix 12: Table 24

Table 24. Heterogeneous effects Behavioral measures Job Offers *Vida Activa*

Explanatory variables		Training program*Female		Training program*Degreesciences	
Dependent variables	Applied to job offers *Vida Activa*	0.2222	0.1974	-0.1583	-0.1862
		(0.1556)	(0.1722)	(0.1972)	(0.22503)
	Constant	0.1667	0.0128	0.0682	-0.0897
		(0.0898)*	(0.2029)	(0.0388)*	(0.1452)
	Applied only to suitable offers	0.2356	0.2108	-0.0958	-0.118
		(0.1413)*	(0.1517)	(0.1936)	(0.2231)
	Constant	0.1667	0.1157	0.0682	0.0123
		(0.0898)*	(0.1504)	(0.0388)*	(0.0963)
Controls					
N		94	86	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 24 cont. Heterogeneous effects Behavioral measures Job Offers *Vida Activa*

Training program*DegreeEduc		Training program*DegreeOthers		Training program*DegreeSocial	
-0.03495	-0.041	-0.0049	0.00576	0.03996	-0.0327
(0.17872)	(0.192)	(0.1314)	(0.143)	(0.1534)	(0.1613)
0.09302	-0.0787	0.10204	-0.0749	0.1111	-0.019
(0.0453)**	(0.1487)	(0.0442)**	(0.1396)	(0.05353)**	(0.1497)
0.0275	0.02895	-0.0704	-0.0538	-0.0063	-0.1261
(0.1748)	(0.1855)	(0.0842)	(0.09596)	(0.131)	(0.1124)
0.09302	0.0229	0.102	0.112	0.1111	0.1012
(0.0453)**	(0.1023)	(0.0442)**	(0.1036)	(0.05353)**	(0.10704)
94	86	94	86	94	86

Appendix 13: Table 25

Table 25. Heterogeneous effects Behavioral measures Linkedin_3 months

Explanatory variables		Training program*Female		Training program*Degreesciences	
Dependent variables	Uses linkedin at least every week	-0.0907	-0.2461	0.3019	0.2822
		(0.1914)	(0.2194)	(0.2183)	(0.2605)
	Constant	0.75	0.6609	0.8333	0.7803
		(0.1297)***	(0.334)**	(0.0912)**	(0.309)***
	N	56	49	56	49
	Add more than 10 connections since December	-0.4012	-0.4975	0.3475	0.3878
		(0.2314)*	(0.2512)**	(0.2513)	(0.2615)
	Constant	0.1538	0.4505	0.3043	0.7543
		(0.1034)	(0.4357)	(0.0991)***	(0.4157)*
	Add connections: interest fields/companies	-0.0995	-0.0629	-0.0765	-0.0634
		(0.1222)	(0.1293)	(0.0802)	(0.1054)
	Constant	0.0796	0.3446	0.0435	0.369
		(0.0763)	(0.27178)	(0.04392)	(0.2442)
	N	64	57	64	57
	Changes profil	-0.178	-0.2314	0.3324	0.3402
		(0.1859)	(0.1916)	(0.1789)*	(0.1992)*
	Constant	0.6111	0.5966	0.75	0.7256
		(0.1174)***	(0.3117)**	(0.0667)***	(0.2895)**
	Add connections: seeking by Known people	0.1265	0.0818	0.04667	0.1105
		(0.1942)	(0.2075)	(0.2499)	(0.2434)
	Constant	0.6667	0.75603	0.75	0.7274
		(0.11355)***	(0.2969)**	(0.0667)***	(0.2748)**
	Add connections: linkedin's recommendation tool	-0.1596	-0.0638	0.1843	-0.04985
		(0.2186)	(0.2276)	(0.2678)	(0.3064)
	Constant	0.5	0.9303	0.6818	0.9553
		(0.1204)***	(0.3328)***	(0.0718)***	(0.3217)***
	Add connections: accepting invitations	-0.1513	-0.1177	0.0487	0.1977
		(0.2019)	(0.20891)	(0.2653)	(0.2801)
	Constant	0.6111	0.3554	0.7727	0.4228
		(0.1174)***	(0.3043)	(0.0646)***	(0.3006)
	Add connections: contacts on email account	0.0322	0.09572	-0.0191	-0.1736
		(0.2083)	(0.2243)	(0.2313)	(0.2618)
		0.4444	0.24793	0.5455	0.19212
	Constant	(0.1197)***	(0.3542)	(0.0767)***	0.3473
	Job seeking	0.1096	0.1298	0.3506	0.5526
		(0.1937)	(0.2016)	(0.2517)	(0.2552)**
	Constant	0.7222	0.5828	0.8409	0.5652
		(0.1079)***	(0.2824)**	(0.0564)***	(0.2883)**
Controls					
	N	94	86	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 25 cont. Heterogeneous effects Behavioral measures Linkedin _3 months

Explanatory variables		Training program*DegreeEduc		Training program*DegreeOthers		Training program*DegreeSocial	
Dependent variables	Uses linkedin at least every week	-0.2115	-0.1872	-0.1611	-0.1723	0.0602	0.1285
		(0.0997)**	(0.1156)	(0.2374)	(0.2459)	(0.1969)	(0.2023)
	Constant	0.75	0.7681	0.75	0.6822	0.7647	0.6621
		(0.0917)***	(0.3049)***	(0.1005)***	(0.2947)**	(0.1068)***	(0.3079)**
	N	56	49	56	49	56	49
	Add more than 10 connections since December	0.037	0.0066	0.00612	-0.0494	0.0668	0.0034
		(0.2595)	(0.2793)	(0.2864)	(0.3415)	(0.2573)	(0.3064)
	Constant	0.2667	0.7062	0.2593	0.6887	0.2381	0.5595
		(0.0834)***	(0.4241)*	(0.087)***	(0.4686)	(0.0959)***	(0.3963)
	Add connections: interest fields/companies	-0.0778	-0.0809	-0.0213	0.0382	-0.0828	-0.1414
		(0.07105)	(0.0899)	(0.2378)	(0.2367)	(0.08697)	(0.1122)
	Constant	0.0333	0.3768	-1.4E-17	0.3904	0.04762	0.339
		(0.3385)	(0.2404)		(0.2154)*	(0.04799)	(0.2265)
	N	64	57	64	57	64	57
	Changes profil	-0.091	-0.1865	-0.2285	-0.2117	0.0039	0.0071
		(0.2011)	(0.207)	(0.2669)	(0.2816)	(0.18549)	(0.1884)
	Constant	0.6977	0.6879	0.7347	0.662	0.7222	0.6731
		(0.7016)***	(0.2966)**	(0.0645)***	(0.2964)**	(0.0763)***	(0.2963)**
	Add connections: seeking by Known people	-0.1351	-0.18535	-0.1596	-0.1027	0.1983	0.1221
		(0.1907)	(0.1887)	(0.2703)	(0.2885)	(0.1766)	(0.1956)
	Constant	0.6744	0.7067	0.7347	0.7006	0.7222	0.7091
		(0.07303)***	(0.2785)**	(0.0645)***	(0.2785)**	(0.0763)***	(0.2731)**
	Add connections: linkedin's recommendation tool	-0.4091	-0.4472	0.1628	0.2428	0.12476	0.3977
		(0.2503)	(0.2474)*	(0.2733)	(0.2763)	(0.2256)	(0.2236)*
	Constant	0.5581	0.9286	0.6122	1.0032	0.6387	0.8183
		(0.0774)***	(0.3174)***	(0.0711)***	(0.3158)***	(0.0818)***	(0.3234)***
	Add connections: accepting invitations	-0.1401	-0.2285	0.2301	0.09414	-0.1291	-0.1134
		(0.2329)	(0.2354)	(0.27675)	(0.26899)	(0.1953)	(0.22401)
	Constant	0.6977	0.3927	0.7551	0.4254	0.6667	0.2712
		(0.0716)***	(0.3048)	(0.0628)***	(0.3006)	(0.0803)***	(0.2995)
	Add connections: contacts on email account	-0.374	-0.4479	0.34701	0.35212	0.0911	0.2326
		(0.236)	(0.2544)*	(0.2431)	(0.25361)	(0.2199)	(0.2521)
		0.3953	0.17453	0.55102	0.2691	0.5278	0.1435
	Constant	(0.0762)***	(0.3449)	(0.07262)***	(0.3453)	(0.80503)***	(0.3429)
	Job seeking	-0.338	-0.4302	0.1847	0.1903	-0.191	-0.2027
		(0.20419)*	(0.2111)**	(0.2575)	(0.2587)	(0.1873)	(0.2006)
	Constant	0.6977	0.4952	0.7755	0.5591	0.6944	0.3802
		(0.0716)***	(0.2643)*	(0.0609)***	(0.2671)**	(0.0785)***	(0.2359)
Controls							
	N	94	86	94	86	94	86

Appendix 14: Table 26

Table 26 cont. Heterogeneous effects Behavioral measures Linkedin _ 6 months

Explanatory variables		Training program*Female		Training program*Degreesciences	
Dependent variables	Uses linkedin at least every week	-0.2476	-0.2454	-0.2265	0.002
		(0.1975)	(0.211)	(0.2765)	(0.3033)
	Constant	0.6	0.6121	0.6286	0.7191
		(0.1297)***	(0.334)*	(0.0837)***	(0.309)***
	N	82	74	56	49
	Add more than 10 connections since February	-0.172	-0.1081	-0.2324	-0.444
		(-0.2374)	(0.2396)	(0.2793)	(0.28058)
	Constant	0.3846	1.2821	0.4375	1.3004
		(0.1385)***	(0.3609)***	(0.0900)***	(0.3205)***
	Add connections: interest fields/companies	0.0728	0.0433	-0.0988	-0.1123
		(0.1435)	(0.1427)	(0.081)	(0.0903)
	Constant	0.0833	0.0842	0.0625	0.0608
		(0.0819)	(0.1681)	(0.0439)	(0.1695)
	N	78	71	78	71
	Changes profil	-0.1674	-0.2759	-0.1019	0.0561
		(0.2078)	(0.2163)	(0.2691)	(0.3074)
	Constant	0.5555	0.6368	0.5909	0.765
		(0.1197)***	(0.3502)*	(0.0758)***	(0.326)***
	Add connections: seeking by Known people	-0.0025	-0.0575	0.2606	0.3475
		(0.1855)	(0.2051)	(0.2279)	(0.2635)
	Constant	0.8333	0.9339	0.7273	0.9854
		(0.0898)***	(0.2908)***	(0.0686)***	(0.2729)***
	Add connections: linkedin's recommendation tool	0.2075	0.2126	0.0735	0.0093
		(0.2171)	(0.2287)	(0.2721)	(0.2863)
	Constant	0.5556	0.2039	0.5682	0.1091
		(0.1197)***	(0.3404)	(0.0763)***	(0.3144)
	Add connections: accepting invitations	0.0757	0.1007	0.3373	0.2344
		(0.18799)	(0.1995)	(0.2174)	(0.2423)
	Constant	0.83333	0.6069	0.8636	0.5789
		(0.0898)***	(0.3392)	(0.0529)***	(0.3228)*
	Add connections: contacts on email account	0.15397	0.06395	-0.0398	-0.0243
		(0.1496)	(0.14898)	(0.1603)	(0.1691)
		0.3333	-0.3198	0.2955	-0.3504
	Constant	(0.11355)***	(0.23269)	(0.0703)***	(0.2273)
	Job seeking	-0.2467	-0.4051	-0.1059	-0.1084
		(0.1884)	(0.19803)**	(0.20848)	(0.2488)
	Constant	0.6111	0.16594	0.6364	0.3399
		(0.1174)***	(0.3208)	(0.0741)***	(0.32012)
	N	94	86	94	86
	Perceived Utility of Linkedin	-1.393	-1.055	1.4196	1.0877
		(1.046)	(1.1051)	(0.9748)	(1.1653)
	Constant	6.5294	5.779	6.2857	6.345
		(0.5716)***	(1.7856)***	(0.37935)***	(1.6552)***
Controls		No	Yes	No	Yes
	N	90	82	90	82

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 26 cont. Heterogeneous effects Behavioral measures Linkedin_ 6 months

Explanatory variables		Training program*DegreeEduc		Training program*DegreeOthers		Training program*DegreeSocial	
Dependent variables	Uses linkedin at least every week	-0.0079	-0.0532	0.1886	0.1277	0.051	0.0099
		(0.2791)	(0.2892)	(0.2293)	(0.2421)	(0.1975)	(0.2282)
	Constant	0.6666	0.7148	0.6053	0.74008	0.5862	0.6057
		(0.081)***	(0.3112)**	(0.0813)***	(0.31001)***	(0.094)***	(0.3131)*
	N	56	49	56	49	56	49
	Add more than 10 connections since February	0.49	0.04884	0.2078	0.21005	-0.0132	0.0933
		(0.2897)	(0.29909)	(0.2853)	(0.2902)	(0.2473)	(0.2722)
	Constant	0.4545	1.3364	0.412	1.3715	0.3704	1.136
		(0.0881)***	(0.3268)***	(0.087)***	(0.3216)***	(0.0954)***	(0.3347)***
	Add connections: interest fields/companies	0.0763	0.0605	-0.1214	-0.1391	0.4007	0.4095
		(0.1555)	(0.1543)	(0.0845)	(0.1059)	(0.1611)***	(0.1959)**
	Constant	0.0625	0.0695	0.0571	0.0235	0.0741	-0.0544
		(0.0439)	(0.1716)	(0.403)	(0.1802)	(0.052)	(0.1503)
	N	78	71	78	71	78	71
	Changes profil	0.0248	-0.0496	0.0203	0.0746	0.2481	0.0672
		(0.254)	(0.2573)	(0.2765)	(0.2712)	(0.1896)	(0.2175)
	Constant	0.5814	0.7574	0.6122	0.7744	0.5556	0.6154
		(0.7689)***	(0.3255)***	(0.0711)***	(0.3255)***	(0.0846)***	(0.3359)*
	Add connections: seeking by Known people	-0.231	-0.2056	-0.2981	-0.2939	0.2851	0.2334
		(0.2532)	(0.2562)	(0.2457)	(0.2278)	(0.1973)	(0.2265)
	Constant	0.6977	0.9458	0.6939	0.9062	0.75	0.8986
		(0.07158)***	(0.2826)***	(0.0673)***	(0.2686)***	(0.0738)***	(0.2995)***
	Add connections: linkedin's recommendation tool	-0.1952	-0.1548	0.3717	0.3118	-0.0755	0.0641
		(0.2647)	(0.28106)	(0.2814)	(0.30359)	(0.2231)	(0.24788)
	Constant	0.51163	0.0979	0.55102	0.16517	0.5833	0.1191
		(0.0779)***	(0.3153)	(0.07262)***	(0.3244)	(0.08397)***	(0.3094)
	Add connections: accepting invitations	0.2048	0.20557	0.0137	-0.0664	-0.4069	-0.33002
		(0.2026)	(0.2121)	(0.2382)	(0.2513)	(0.1958)**	(0.21811)
	Constant	0.8372	0.5756	0.8367	0.5496	0.8333	0.6406
		(0.0575)***	(0.3267)*	(0.05396)***	(0.3192)*	(0.0635)***	(0.30599)**
	Add connections: contacts on email account	0.0573	0.03173	0.0705	-0.0094	-0.0721	-0.036
		(0.2085)	(0.2031)	(0.1761)	(0.1628)	(0.16205)	(0.1842)
	Constant	0.2791	-0.3464	0.3061	-0.3503	0.25	-0.4072
		(0.0699)***	(0.2232)	(0.0673)***	(0.2391)	(0.0738)***	(0.2234)
	Job seeking	-0.2646	-0.2984	0.2008	0.2805	0.2388	0.22784
		(0.25597)	(0.27082)	(0.2658)	(0.2753)	(0.1817)	(0.2105)
	Constant	0.67442	0.3278	0.69388	0.399	0.6944	0.3839
		(0.07303)***	(0.3161)	(0.0673)***	(0.3234)	(0.0785)***	(0.3041)
	N	94	86	94	86	94	86
	Perceived Utility of Linkedin	0.3941	-0.0698	0.5192	0.0888	-2.2146	-1.282
		(1.189)	(1.2003)	(1.4203)	-1.5707	(1.1267)**	(1.1869)
	Constant	6.75	6.2526	6.4444	6.2723	6.091	6.7137
		(0.3666)***	(1.6526)***	(0.35591)***	(1.7176)***	(0.4121)***	(1.6058)***
Controls		No	Yes	No	Yes	No	Yes
	N	90	82	90	82	90	82

Appendix 15: Table 27

Table 27 Heterogeneous effects Behavioral measures Job Offers *Vida Activa* _ 6 months

Explanatory variables		Training program*Female		Training program*Degreesciences	
Dependent variables	Received job offers *Vida Activa*	0.0917	0.1588	0.0325	0.09189
		(0.1922)	(0.2129)	(0.25196)	(0.2922)
	Constant	0.7778	1.045	0.7045	0.9865
		(0.1001)***	(0.3623)**	(0.0703)***	(0.35112)**
	Applied to job offers	-0.132	-0.1278	-0.3924	-0.3982
		(0.2173)	(0.2343)	(0.26302)	(0.2895)
	Constant	0.5556	0.3957	0.5	0.4213
		(0.1197)***	(0.3364)	(0.077)***	(0.3367)
	Shared job offers	-0.1389	-0.2381	0.0771	-0.073
		(0.2191)	(0.2348)	(0.2721)	(0.2946)
	Constant	0.4444	0.2657	0.523	0.3582
		(0.1197)***	(0.3625)	(0.077)***	(0.3464)
Controls		No	Yes	No	Yes
	N	94	86	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others, Job search in Linkedin

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 27 cont. Heterogeneous effects Behavioral measures Job Offers *Vida Activa* _ 6 months

Training program*DegreeEduc		Training program*DegreeOthers		Training program*DegreeSocial	
0.4892	0.5335	0.0505	0.0419	-0.3821	-0.4111
(0.2244)**	(0.22795)**	(0.2144)	(0.2176)	(0.2069)*	(0.2453)*
0.7674	1.0052	0.6735	0.98863	0.6389	0.91598
(0.0658)***	(0.35799)**	(0.0685)***	(0.36178)**	(0.0818)***	(0.3474)**
-0.4268	-0.4723	0.339	0.3016	0.3382	0.2865
(0.2585)*	(0.2685)*	(0.2533)	(0.2578)	(0.222)	(0.2521)
0.4884	0.42597	0.592	0.5081	0.6111	0.4966
(0.0779)***	(0.34176)	(0.0718)***	(0.3458)	(0.08304)***	(0.3525)
-0.3667	-0.272	-0.2341	0.05315	0.3626	0.3327
(0.2642)	(0.2784)	(0.2785)	(0.30272)	(0.2064)*	(0.2144)
0.4651	0.3504	0.531	0.37368	0.5	0.28795
(0.0777)***	(0.3491)	(0.0729)***	(0.3615)	(0.0852)***	(0.3622)
No	Yes	No	Yes	No	Yes
94	86	94	86	94	86

Appendix 16: Table 28

Table 28. Heterogeneous effects_3 months

Explanatory variables		Training program*Female		Training program*Degreesciences	
Dependent variables	Employed	-0.1351	-0.133	-0.0731	-0.0208
		(0.1603)	(0.1724)	(0.2102)	(0.2257)
	Constant	0.166	0.3248	0.1818	0.4176
		(0.0898)*	(0.2679)	(0.0595)***	(0.2561)
	Plans to be Self_employed	-0.04	-0.1102	0.0552	0.1092
		(0.2096)	(0.2238)	(0.259)	(0.2859)
	Constant	0.5	0.5727	0.2955	0.6297
		(0.1204)***	(0.3241)*	(0.0703)***	(0.3151)**
	Full-time employed	0.0341	0.023	0.2358	0.3047
		(0.0917)	(0.1084)	(0.146)	(0.169)*
	Constant	0.9444	0.8339	0.93182	0.84597
		(0.0552)***	(0.1924)***	(0.0388)***	(0.1544)***
	Job search	-0.101	-0.1067	0.0085	0.207
		(0.0714)	(0.0741)	(0.0389)	(0.0489)
	Constant	0.944	1.033	0.9773	1.0826
		(0.0552)***	(0.0569)***	(0.0229)***	(0.0731)***
	Complementary training	0.331	0.223	-0.0268	0.0244
		(0.206)	(0.216)	(0.2548)	(0.2728)
	Constant	0.5	0.2908	0.3636	0.2636
		(0.1204)***	(0.6136)	(0.0741)***	(0.6097)
	N	94	86	94	86
	Confidence levels finding a job until the end of 2013	1.686	1.411	-0.2955	1.7455
		(1.3733)	(1.471)	(2.0151)	(2.07351)
	Constant	7.666	8.424	6.444	7.788
		(0.7089)***	(1.745)***	(0.44431)**	(1.8577)***
Controls					
	N	73	71	73	71

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others, Has unemployment benefit, Has plans to become self-employed, Job search in Linkedin, Modify CV, Uses Linkedin every week, Employed, Job seeking

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 28 cont. Heterogeneous effects_3 months

Explanatory variables		Training program*DegreeEduc		Training program*DegreeOthers		Training program*DegreeSocial	
Dependent variables	Employed	-0.2593	-0.2113	-0.0005	0.1157	0.1603	0.07662
		(0.2143)	(0.1962)	(0.2033)	(0.1942)	(0.142)	(0.1696)
	Constant	0.1395	0.3823	0.2041	0.4414	0.2778	0.5603
		(0.054)**	(0.2602)	(0.0588)***	(0.2487)*	(0.0763)***	(0.2483)**
	Plans to be Self_employed	0.1781	0.147	0.076	0.1528	-0.1584	-0.223
		(0.2388)	(0.2735)	(0.2783)	(0.3032)	(0.221)	(0.2395)
	Constant	0.3953	0.6342	0.3265	0.6501	0.3333	0.6367
		(0.0762)***	(0.3184)**	(0.0685)***	(0.3203)**	(0.0801)***	(0.3143)**
	Full-time employed	0.1049	0.1161	-0.088	-0.1051	-0.25	-0.2077
		(0.12299)	(0.1323)	(0.0591)	(0.0785)	(0.1033)**	(0.122)**
	Constant	0.9069	0.8314	0.878	0.8044	0.8333	0.8742
		(0.0453)***	(0.1652)***	(0.4786)***	(0.165)***	(0.0635)***	(0.1625)***
	Job search	0.0079	0.0394	0.0141	0.0346	-0.031	-0.081
		(0.0392)	(0.05188)	(0.0403)	(0.0531)	(0.0969)	(0.1233)
	Constant	0.9767	1.0844	0.9796	1.0874	1	1.133
		(0.0235)***	(0.07422)***	(0.02064)***	(0.0729)***	4.4E-17 ***	(0.0995)***
	Complementary training	0.01197	-0.1379	-0.4324	-0.0441	0.31092	0.3332
		(0.24996)	(0.2689)	(0.2573)*	(0.258)*	(0.2152)	(0.23045)
	Constant	0.3721	0.2406	0.3469	0.1534	0.4166	0.3576
		(0.07533)***	(0.6026)	(0.0695)***	(0.5905)	0.08397)***	(0.5585)
	N	94	86	94	86	94	86
	Confidence levels finding a job until the end of 2013	1.472	1.755	0.712	0.56026	0.2308	-1.613
		(1.82)	(1.8998)	(1.4876)	(1.617)	(1.3873)	(1.564)
	Constant	6.7297	7.9339	6.59	7.731	6.231	7.363
		(0.4636)***	(1.8476)***	(0.4674)***	(1.877)***	(0.5646)***	(1.901)***
Controls							
	N	73	71	73	71	73	71

Appendix 17: Table 29

Table 29. Heterogeneous effects_6 months

Explanatory variables		Training program*Female		Training program*Degreesciences	
Dependent variables Employed		0.1225	0.0188	0.0118	-0.02168
		(0.2189)	(0.2305)	(0.2715)	(0.3482)
	Constant	0.444	1.2412	0.3636	1.2346
		(0.1197)***	(0.423)**	(0.07411)***	(0.4095)***
	N	94	74	94	74
	Plans to be Self_employed	-0.10323	-0.13694	0.081	0.1594
		(0.2082)	(0.22634)	(0.2592)	(0.2979)
	Constant	0.6111	0.31054	0.5682	0.3838
		(0.1174)***	(0.3647)	(0.0763)***	(0.3572)
	Full-time employed	-0.0654	-0.099	0.1989	0.258
		(0.0952)	(0.1142)	(0.1306)	(0.1565)*
	Constant	0.9444	0.7255	0.9545	0.7889
		(0.0552)***	(0.19067)***	(0.0321)***	(0.1512)***
	N	94	86	94	86
	Job search	0.081	0.0837	0.0455	-0.0855
		(0.0459)*	(0.0612)	(0.0942)	(0.064)
	Constant	1	0.801	0.9545	0.7676
		1.39E-17 ***	(0.1585)***	(0.0321)***	(0.1774)***
	N	94	74	94	74
	Complementary training	0.5432	0.514	0.1623	0.0457
		(0.2127)**	(0.2362)**	(0.2694)	(0.3249)
	Constant	0.6111	0.2549	0.4545	0.0964
		(0.1173)***	(0.3574)	(0.07672)***	(0.3361)
Controls		No	Yes	No	Yes
	N	94	86	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree Sciencies, Degree Others, Has unemployment benefit, Has plans to become self-employed, Job search in Linkedin, Modify CV, Adapt Communication

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,...

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 29 cont. Heterogeneous effects_6 months

Explanatory variables		Training program*DegreeEduc		Training program*DegreeOthers		Training program*DegreeSocial	
Dependent variables	Employed	0.2713	0.3367	0.2587	0.343	-0.1618	-0.2324
		(0.2586)	(0.2558)	(0.2538)	(0.2478)	(0.2256)	(0.2591)
	Constant	0.4186	1.421	0.4082	1.3685	0.3611	1.3288
		(0.0769)***	(0.4501)***	(0.0718)***	(0.389)***	(0.082)***	(0.41302)***
	N	94	74	94	74	94	74
	Plans to be Self_employed	0.24602	0.2786	0.3852	0.36311	-0.5054	-0.52512
		(0.25451)	(0.2588)	(0.2586)	(0.2736)	(0.21697)**	(0.2478)**
	Constant	0.60465	0.391	0.51743	0.43821	0.4722	0.3432
		(0.0762)***	(0.3567)	(0.07225)***	(0.3436)	(0.08503)***	(0.32552)
	Full-time employed	-0.2046	-0.1889	-0.0127	-0.02	-0.0769	-0.064
		(0.14597)	(0.1495)	(0.0625)	(0.082)	(0.114)	(0.1238)
	Constant	0.9069	0.7571	0.9183	0.7662	0.9167	0.7855
		(0.4526)***	(0.1617)***	(0.0399)***	(0.163)***	(0.0471)***	(0.1574)***
	N	94	86	94	86	94	86
	Job search	0.0368	0.9	0.1259	0.1189	-0.0833	-0.0801
		(0.0879)	(0.1426)	(0.1582)	(0.1263)	(0.0471)*	(0.0686)
	Constant	0.9535	0.779	0.9592	0.8052	0.9167	0.77102
		(0.033)***	(0.1754)***	(0.0289)***	(0.1465)***	(0.471)***	(0.1774)
	N	94	74	94	74	94	74
	Complementary training	0.2032	0.211	-0.4102	-0.4073	0.00487	0.0511
		(0.2647)	(0.2818)	(0.2789)	(0.2798)	(0.22799)	(0.2607)
	Constant	0.4651	0.1242	0.4082	-0.0553	0.4444	0.0876
		(0.0777)***	0.34202	(0.072)***	(0.339)	(0.08464)***	(0.3388)
Controls		No	Yes	No	Yes		
	N	94	86	94	86	94	86

Appendix 18: Table 30

Table 30. Heterogeneous effects_confidence levels January 2013_ 6 months

Explanatory variables		Training program*Female		Training program*Degreesciences	
Dependent variables	Self qualities	0.0053	0.03533	-0.2573	-0.0821
		(0.23422)	(0.24069)	(0.3103)	(0.3221)
	Constant	2.0556	1.8025	2	1.7806
		(0.0552)***	(0.2318)***	(0.0569)***	(0.2324)***
	Self flaws	-0.10876	-0.0381	-0.5726	-0.6173
		(0.17629)	(0.1657)	(0.1989)**	(0.21686)**
	Constant	2	2.044	1.932	2.016
		4.97E-09 ***	(0.1559)***	(0.0388)***	(0.17413)***
	Oral presentation	0.0992	0.02712	-0.2772	-0.3717
		(0.16797)	(0.16604)	(0.1982)	(0.2129)*
	Constant	2	1.9177	1.977	1.8781
			(0.1497)***	(0.06135)***	(0.1795)***
Controls		No	Yes	No	Yes
	N	94	86	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 30 cont. Heterogeneous effects_confidence levels January 2013_ 6 months

Training program*DegreeEduc		Training program*DegreeOthers		Training program*DegreeSocial	
-0.0233	0.00373	-0.02041	-0.1593	0.3738	0.3541
(0.1834)	(0.19588)	(0.2444)	(0.2583)	0.2538	0.3015
1.9767	1.7869	1.9796	1.7576	2.0278	1.6848
(0.05302)***	(0.2315)***	(0.0551)***	(0.2386)***	(0.0633)***	(0.23029)***
-0.1194	-0.1046	0.1698	0.0781	0.2534	0.4055
(0.13472)	(0.1379)	(0.18145)	(0.1787)	0.2125	(0.2112)*
1.9535	2.0545	1.93878	2.0758	1.9722	1.9155
(0.03282)***	(0.1716)***	(0.035)***	(0.18549)***	(0.02799)***	(0.1841)***
-0.0361	-0.0617	-0.1859	-0.1019	0.3645	0.38399
(0.1738)	(0.17741)	(0.2105)	(0.2245)	(0.1666)**	(0.18107)**
1.9535	1.9014	1.9796	1.887	2.0278	1.8219
(0.04698)***	(0.1751)***	(0.0551)***	(0.1932)***	(0.0489)***	(0.17573)***
No	Yes	No	Yes	No	Yes
94	86	94	86	94	86

Appendix 19: Table 31

Table 31. Heterogeneous effects_confidence levels May 2013_ 6 months

Explanatory variables		Training program*Female		Training program*Degreesciences	
Dependent variables	Self qualities	0.0276	-0.1668	-0.4079	-0.551
		(0.3422)	(0.3498)	(0.39134)	(0.4325)
	Constant	3.2778	2.9073	3	3.041
		(0.17602)***	(0.5435)***	(0.1354)***	(0.5823)***
	Self flaws	-0.2154	-0.2389	-0.1153	-0.2427
		(0.3961)	(0.4373)	(0.4952)	(0.6078)
	Constant	4	4.3485	3.8864	4.438
		(0.1969)***	(0.6847)***	(0.1281)***	(0.6432)***
	Oral presentation	0.4078	0.34389	-0.8851	-0.78376
		(0.4293)	(0.46623)	(0.5782)	(0.75051)
	Constant	4.3333	5.2422	3.7045	5.0389
		(0.2124)***	(0.73948)***	(0.13375)***	(0.6772)***
Controls		No	Yes	No	Yes
	N	94	86	94	86

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 31 cont. Heterogeneous effects_confidence levels May 2013_ 6 months

Training program*DegreeEduc		Training program*DegreeOthers		Training program*DegreeSocial	
0.1611	0.1535	-0.0269	0.102	0.22515	0.1137
(0.4157)	(0.3942)	(0.5569)	(0.5388)	(0.3572)	(0.3792)
3.0465	3.0893	3.041	3.0007	3	2.8142
(0.1343)***	(0.5779)***	(0.1178)***	(0.5391)***	(0.1391)***	(0.5547)***
0.5577	0.54043	0.3718	0.5127	-0.1944	-0.2149
(0.4004)	(0.4222)	(0.5855)	(0.639)	(0.3739)	(0.4208)
3.9535	4.492	3.9592	4.5492	3.8889	4.4741
(0.1343)***	(0.6542)***	(0.1102)***	(0.6326)	(0.1435)***	(0.6005)***
0.6799	0.691	-0.2515	-0.1628	0.7237	0.48484
(0.4625)	(0.4675)	(0.5123)	(0.5666)	(0.45399)	(0.46146)
3.884	5.138	3.8163	5.065	3.9722	5.058
(0.1584)***	(0.6673)***	(0.1435)***	(0.68065)***	(0.1528)***	(0.6884)***
No	Yes	No	Yes	No	Yes
94	86	94	86	94	86

Appendix 20: Table 32

Table 32. Heterogeneous effects of training on income sources_6months

Explanatory variables		Training program *Female		Training program *Degreesciences	
Dependent variables	Unemployment benefit	-0.0786	-0.0468	-0.2248	-0.1394
		(0.2199)	(0.16197)	(0.26913)	(0.1097)
	Constant	0.5	0.5421	0.54545	0.55702
		(0.1204)	(0.2963)*	(0.07672)***	(0.2489)**
	Own salary	0.1394	0.002	-0.1786	-0.2104
		(0.2169)	(0.11384)	(0.2705)	(0.12744)*
	Constant	0.3888	-0.43283	0.29545	-0.04457
		(0.11743)***	(0.2496)	(0.0703)***	(0.22178)**
	Salary of someone within the household	0.3608	0.4206	-0.3827	-0.3133
		(0.2122)*	(0.2202)*	(0.2352)	(0.2691)
	Constant	0.7222	1.1832	0.6136	0.96066
		(0.10789)***	(0.29745)***	(0.07502)***	(0.3164)***
	Salary of someone not belonging to household	0.2727	0.24404	-0.2918	-0.2415
		(0.14058)*	(0.14696)*	(0.20867)	(0.23598)
	Constant	0.2222	0.05498	0.02273	-0.07753
		(0.1001)**	(0.21587)	(0.0229)	(0.17829)
	Savings	0.2576	0.22907	-0.2216	-0.1447
		(0.1095)**	(0.1112)**	(0.1287)*	(0.11967)
	Constant	0.16666	0.04574	0.0227	-0.0739
		(0.08977)*	(0.1668)	(0.2296)	(0.15435)
	Financial assets	0.2576	0.2291	-0.2216	-0.14469
		(0.1095)**	(0.1112)**	(0.12870)*	(0.11967)
	Constant	0.1666	0.04575	0.02273	-0.0739
		(0.08977)*	(0.16677)	(0.0229)	(0.1543)
	N	94	86	94	86
	Capital rents	-0.0270	-0.0279	0.2273	0.00826
		(0.02727)	(0.0272)	(0.02298)	(0.01569)
	Constant	-6.77e-17	-0.0764	0.02273	-0.07096
			(0.08076)	(0.02298)	(0.07757)
	Trainings	-0.0588	-0.0047	-0.03333	-0.00221
		(0.05838)	(0.00769)	(0.03253)	(0.00844)
	Constant	2.26e-16	0.0193	3.99e-17	0.0204
		(7.34e-17)***	(0.03544)	(6.94e-18)***	(0.03611)
	Firing compensations	0.05	0.0747	0.14286	0.16482
		(0.04985)	(0.0694)	(0.13530)	(0.149633)
	Constant	-6.94e-17	0.0888	1.11e-16	0.06183
		(4.39e-17)	(0.0856)		(0.06556)
Controls		No	Yes	No	Yes
	N	90	83	90	83

Standard errors between brackets

* 10 % significance level; ** 5% significance level *** 1% significance level

Notes:

Controls includes Female, Age, Degree Education, Degree in Sciencies, Degree Others, Employed

Degree in Social Sciences: Philosophy, Psychology, Antropology, Law, History,…

Degree Others: Sports, Design, Physiotherapy, Geography (not included on the remaining degrees)

Degree in Education: related to educational sector (Teaching)

Degree in Sciences: Maths, Physics, IT, Engineering, Architecture

Table 32 cont. Heterogeneous effects of training on income sources_6months

Explanatory variables		Training program *DegreeEduc		Training program *DegreeOthers		Training program *DegreeSocial	
Dependent variables	Unemployment benefit	-0.2657	-0.1103	0.3413	0.5097	0.2422	0.11384
		(0.2645)	(0.13361)	(0.2791)	(0.2335)**	(0.22306)	(0.1568)
	Constant	0.5349	0.55232	0.5918	0.69153	0.58333	0.55696
		(0.0777)***	(0.25116)**	(0.07176)***	0.23758)***	(0.08397)***	(0.23811)**
	Own salary	0.1935	-0.0415	0.3179	0.06866	-0.17398	0.02311
		(0.2583)	(0.0645)	(0.2514)	(0.11702)	(0.22348)	(0.08117)
	Constant	0.3721	-0.4385	0.36735	-0.41675	0.33333	-0.3495
		(0.07533)***	(0.22992)*	(0.0704)***	(0.2258)*	(0.0803)***	(0.23116)
	Salary of someone within the household	0.0927	0.1589	0.1769	0.2078	-0.18713	-0.3198
		(0.2677)	(0.2845)	(0.2733)	(0.27883)	(0.2248)	(0.24425)
	Constant	0.6047	0.9965	0.59184	1.0300	0.58333	0.91667
		(0.0762)***	(0.3185)***	(0.07176)***	(0.33266)***	(0.08397)***	(0.03369)***
	Salary of someone not belonging to household	-0.00872	-0.0319	0.2331	0.2396	0.0307	0.3752
		(0.07788)	(0.09057)	(0.1448)	(0.1594)	(0.1268)	(0.1447)
	Constant	0.11628	-0.0675	0.10204	-0.0043	0.1111	0.05216
		(0.04996)**	(0.1909)	(0.4419)**	(0.1718)	(0.05353)**	(0.20855)
	Savings	0.0727	0.0011	0.26122	0.2739	0.0093	0.00314
		(0.0591)	(0.0615)	(0.13393)**	(0.14753)*	(0.06978)	(0.05159)
	Constant	0.06977	-0.0657	0.06122	0.00224	0.08333	-0.0275
		(0.0397)*	(0.16273)	(0.03500)	(0.13782)	(0.0471)*	(0.16709)
	Financial assets	0.00726	0.00113	0.26122	0.273899	0.00926	0.00314
		(0.0591)	(0.06153)	(0.13393)**	(0.14753)*	(0.06978)	(0.0516)
	Constant	0.06977	-0.06568	0.06122	0.0022	0.08333	-0.0275
		(0.0397)*	(0.16273)	(0.03500)*	(0.13782)	(0.0471)	(0.16709)
	N	94	86	94	86	94	86
	Capital rents	0.02439	0.00790	-0.16666	-0.1615	0.029412	0.01245
		(0.02464)	(0.01241)	(0.15564)	(0.14972)	(0.02964)	(0.01702)
	Constant	0.02439	-0.0704	1.13e-16	-0.09146	0.029412	-0.06553
		(0.02464)	(0.07713)	(9.81e-17)	(0.09723)	(0.02964)	(0.073308)
	Trainings	-0.03333	-0.0104	0.125	0.13619	-0.04	-0.00573
		(0.03353)	(0.01332)	(0.11962)	(0.13175)	(0.04009)	(0.0095)
	Constant	4.16e-17	0.01988	5.55e-17	0.03784	6.59e-17	0.01804
		(6.94e-18)***	(0.03591)	(1.70e-17)***	(0.04345)	(6.94e-18)***	(0.035192)
	Firing compensations	-0.03333	-0.03479	-0.03448	-0.01574	-0.04	-0.05759
		(0.033526)	(0.03610)	(0.034662)	(0.02438)	(0.04009)	(0.0563)
	Constant	4.16e-17	0.04939	5.72e-17	0.05109	6.94e-17	0.1011
		(6.94e-18)***	(0.057287)	(1.20e-17)***	(0.05824)	(6.94e-18)***	(0.09963)
Controls		No	Yes	No	Yes	No	Yes
	N	90	83	90	83	90	83

Appendix 21: Literature Review: an Overview

Literature Review: Summary

Autor/ Year	Country	Intervention	Methodology	Outcomes	Results
Bloom, N. et al. 2011	India	Free consulting of management practices	RCT (Randomized control trials)	Firm's output, productivity, efficiency, logistics, organizational behaviour, reduction in inventory	Indian textiles firms that were offered free consulting substantially improved performance (output, productivity, efficiency…)
Card, David 1988	United States	CETA program of 1976	Logistic probability models	Employment rates	Positive impact of training after 3 years
Card, D et al., 2011	Dominican Republic	ALMP's Juventud y Empleo program: training and counselling	RCT (Randomized control trials)	Employment, hours of work, monthly earnings and hourly wages	Employment and hourly wages are modest and positive but not statistically significant raise on monthly earnings is significant
Crépon, B. et al, 2007	France	French training system for jobseekers (FTSJ)	Multiple-spells duration model	Training spells durations and unemployment recurrence	Training does not led to further employment rates and this effect is even more negative over time and if the duration of training is also longer
Doer. A et al, 2013	Germany	ALMP's: German Training Voucher	DID (Difference-in- Difference)	Employment and monthly earnings	Positive effects in short –term for employment and monthly earnings
Fairlie W. Robert et al., 2012	United States	Gate Growing America Through Entrepreneurship) program	RCT (Randomized control trials)	Self-employment rates	Increased average business ownership and overall employment in the short-term
Gerfin. M et al. (2002)	Switzerland	ALMP's: Temporary wage subsidy	Propensity score matching	Employment rates	Positive effects on employment rates

Hombert. J et al, 2014	France	French labour reform: subsidized entrepreneurship training	DID (Difference- in -Difference)	Self-employment rates	Firm creation‘s growth is significant for single proprietors
Lechner, Michael et al., 2011	Germany	ALMP’s: German government sponsored training (GST)	Propensity score matching	Employment rates and spells	Long- term effects on employment and earnings, specially with retraining
Lechner, Michael et al., 2012	Germany	ALMP’s: job search programmes, training (further vocational training) and subsidized employment	Propensity score matching	Employment rates	larger share of subsidized employment and longer further vocational training harm companies in the long term
Martins, S.P et al. 2014	Portugal	ALMP’s *Convocatórias* activation program	RDD (Regression discontinuity design)	Reemployment on UBRs unemployed for six months or more	Positive effects in terms of reemployment.
Mckenzie et al. 2014	Turkey	ALMP’s: Turkish National Employment Agency’s vocational training	RCT (randomized control trials)	Employment rates	Small and statistically insignificant positive impacts of training on the probability of being employed
Van Reenen, John, 2003	United Kingdom	British New Deal	DID (Difference-in- Difference)	Switching from unemployment to employment due to the New Deal Programme	Significant increase of employment among the target individuals