

DO TRAINING PROGRAMMES GET THE UNEMPLOYED BACK TO WORK? A LOOK AT THE SPANISH EXPERIENCE*

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The paper analyses the effect of the public training programme of the National Employment Institute (INEM) for unemployed workers on employment prospects. Two groups of Spanish unemployed workers are compared between April 2000 and February 2001, one of which participated in training courses in the first quarter of 2000. Propensity score matching methodology is used to assess the causal effect of training courses on unemployment duration. The results suggest that medium-level courses reduce unemployment duration more than courses at other levels. The trained women reduce their unemployment spell more than the trained men, although the differences are not high enough to reduce the gender gap in the labour market significantly.

Key words: active labour market policies, training courses, unemployment duration and propensity score matching.

JEL classification: C31, J64, J68.

Governments spend great amounts of resources, basically from taxes, on implementing labour market policies. Programme analysis should play an important role in public decision-making. For analytical and policy purposes, the OECD splits labour market policies into so-called active and passive measures. Active Labour Market Policies (ALMPs) are intended to moderate cyclical downturns, reduce structural imbalances, support at-risk employers, and improve access of unemployed workers to jobs, job-related skills and the functioning of the labour market. Passive measures relate to spending on income transfers.

These programmes represent more than a third of total expenditure on unemployment benefits and may even exceed such benefits, as occurs in the Nordic countries. Until 2005, the OECD databases on ALMPs covered five main cate-

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gories: (i) Public Employment Services (PES) and administration, which includes job placement activities and refers job seekers to available slots on labour market programmes; (ii) measures targeted at the young unemployed such as training and employment programmes; (iii) subsidized employment focused on hiring subsidies, assistance for starting a business and direct job creation; (iv) measures for disabled workers, including vocational rehabilitation and sheltered work programmes; and (v) labour market training¹.

Applied research should be the first stage for governments in the process of learning the potential benefits of a labour market measure before implementing a policy. The analysis of experiments which simulate policies could be the optimal solution.

This demanding process is widespread in the USA. In the case of the EU, the analysis and assessment of ALMPs has been increasing at a rate comparable with the increase in the weight of these measures in public spending in recent years. Dar and Tzannatos (1999) present a review of evaluations of ALMPs in OECD countries during the 1990s. Betcherman, Olivas and Dar (2004) extend the analysis to developing and transition countries. The findings of these reviews confirm the wide range of results from the same policy across countries and groups of workers, so ALMPs need to be designed according to socio-economic circumstances. In the case of industrialized OECD countries, most active spending is allocated to training programmes, which account for 36 percent of total expenditure on ALMPs [see OECD (2003)].

The aim of this paper is to evaluate the effectiveness of the training courses for unemployed workers on their employment prospects. The training programme was implemented in Spain between 2000 and 2001, the National Plan for Training and Job Placement. I have a special database of administrative records provided by the National Employment Institute (INEM). It covers workers' employment transition and contains information on the personal characteristics of a set of workers who received training programmes in the first quarter of 2000 and a group of untrained unemployed workers.

Apart from the findings of impact evaluations in developed countries presented by Betcherman, Olivas and Dar (2004), there are interesting studies on labour market training programmes for unemployed workers related to this paper which also use employment transition issues as their outcome variable, especially among Northern and Western European countries. Gerfin and Lechner (2002) evaluate the effect of several ALMPs in Switzerland on individual employment prospects. One of them is a training programme and they get mixed results depending on the type of course. Lechner, Miquel and Wunsch (2007) analyse public sector sponsored training programmes for unemployed workers in Germany and find that they have negative effects on reemployment probability in the short

(1) Martin (2000) presents further details on public spending on labour market programmes in OECD countries. New programme categories and sub-categories were defined. Youth measures were not included in the main categories in favour of other actions, such as direct job creation. See further information in Statistical Annex, OECD (2005, 2006).

run and positive effects in the long run. Larsson (2003) presents similar effects of training courses in Sweden. Weber and Hofer (2003) find negative results for training programmes, except for women, in Austria. More recently, in transition economies, Rodriguez-Planas and Benus (2007) assess the effects of ALMPs in Romania in the late 1990s and their findings confirm positive effects of training courses on workers' reemployment probabilities.

Subsidised employment and labour market training are among the most widely implemented ALMPs in Spain. While the literature on evaluation of training programmes in developed economies is large, the number of studies in Spain is still small and administrative data is used to analyse the effect of policies after implementation. Mato (2002) and Mato and Cueto (2004) are promising examples of microeconomic analysis of training courses. The contribution of this paper to international literature is twofold. First, it increases our knowledge of training programmes in Southern Europe, a region where there is only limited evidence of the evaluation of ALMPs. Second, I provide results that give an insight into the programme design process of training courses to improve the labour market situation of unemployed workers.

The main findings of the paper can be briefly summarised as follows. Although the results are conditional on the potential limitation of the data structure and the selection process, I find that workers who receive medium-level training courses get jobs earlier than the other groups. More specifically, the reduction of the unemployment spell is nearly six weeks for this type of training course instead of three and a half weeks for high-level courses. Although the trained women reduce their unemployment spell more than the trained men, the training programme does not eliminate the gender gap in the labour market. Finally, the results do not confirm the existence of a "lock-in" effect for training courses, as suggested by Lechner, Miquel and Wunsch (2007).

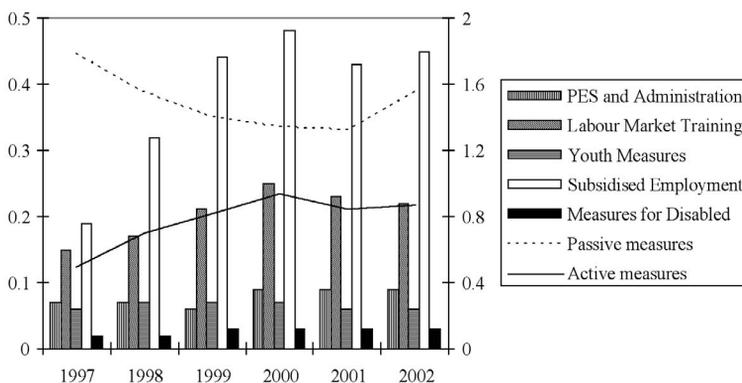
The rest of the paper is organised as follows: Section 1 presents information on ALMPs in Spain and the organisation of the training courses assessed. Section 2 provides details on the database and descriptive statistics. Propensity score matching estimation methodology and empirical implementation are discussed in Section 3. Section 4 displays the results and Section 5 concludes.

1. ALMPs IN SPAIN

The socio-economic situation in Spain and commitments made at the EU Summit Meeting in Luxembourg in 1997 led policy-makers to turn their attention to policies which favoured the capacity to create formal employment and the transition to a knowledge-based economy². Expenditure on active and passive measures followed opposite trends between 1997 and 2001, with the weight of passive policies falling from 1.78 to 1.32 percent of GDP and that of ALMPs increasing from 0.49 to 0.84 percent of GDP.

(2) The behaviour of unemployment in Spain has been a matter of great concern to economists, see e.g. Jimeno and Toharia (1996), Dolado, Felgueroso and Jimeno (2000), and Güell (2003).

Figure 1: Expenditure on labour market policies in Spain, 1997-2002



Note: The right vertical axis corresponds to percentages of GDP (% GDP) for passive and active measures and the left one reflects percentages of GDP for categories of ALMP.

Source: OECD, Employment Outlook (2001, 2003, 2004).

Figure 1 shows the behaviour of the spending on labour market measures and the main categories of ALMPs as percentages of Spanish GDP between 1997 and 2002. Spending on PES and administration and measures for disabled workers increased slightly and spending on measures for younger workers remained constant during the period. Moreover, expenditure on the two main measures grew up to 2000 and decreased slowly afterwards. Together, subsidised employment and labour market training programmes accounted for over 78 percent of total spending on ALMPs in the period 2000-2002³.

One of the most important elements in the institutional framework of the Spanish labour market is the National Plan for Training and Job Placement, implemented by the government in 1980. The original structure of the plan came from the rearrangement of training programmes and, from 1993 onwards, the emphasis has been on getting unemployed workers back into work. The plan includes an occupational training network for unemployed workers lacking the necessary skill levels. The aim is to provide skills required by the economy so as to place them in employment. The plan belongs neither to the education system, which depends on the Ministry of Education, nor to training for employed workers, controlled by the Foundation for Continuous Training (FORCEM)⁴.

(3) The expenditure on labour market training includes two sub-categories, training for unemployed adults and those at risk and training for employed adults. The former sub-category usually represented above 50% of the total expenditure of training in Spain between 1997 and 2002.

(4) FORCEM was constituted by employers' organisations and trade unions in May 1993. It takes charge of driving and spreading continuous training among firms and workers and promoting assistance.

Although any unemployed worker may benefit from the courses, the plan includes a set of target groups: (i) unemployed workers who receive benefit, (ii) long-term unemployed workers aged over 25 (registered as unemployed for over one year), (iii) young unemployed workers (under 25) whose previous job lasted at least 6 months, and (iv) disadvantaged groups, such as women who want to return to the active labour market, disabled and migrant workers.

The management and planning of programmes and the pre-selection of candidates correspond to the INEM or regional governments with devolved authority. The institutions responsible for devising the planning of courses are the INEM or regional PES, taking into account the main objectives of the Ministry of Employment and Social Affairs (MTAS), training needs of regions and industries explored by the occupational observatory of the MTAS and behaviour of hiring in the last three years.

The process of selecting workers for a course is twofold. The INEM draws up a shortlist of candidates considering planning objectives, course characteristics, skill requirements of unemployed workers and gender equality. On completion of courses, the INEM or regional PES must send information on achievement rates of courses, skills obtained by students, employment rate of workers and assessment of training centres on a yearly basis. The final selection of workers depends on the training centres which stage the courses.

The INEM and regional PES set up special training courses using their own resources. Municipal councils and provincial public bodies also organise courses for workers in rural areas. Finally, the private sector and other public-sector organisations may take part in training programmes. Any institution can qualify as a training centre, but it must have authorisation from the INEM or a regional PES to give classes. In order to meet the requirements, organisations must meet material conditions, such as appropriate administrative and teaching staff, habitability, health and safety conditions and other requisites related to the type of course.

Training centres should not receive any money from unemployed workers, because all resources for the activity will come from the INEM or regional PES. The subsidy depends on the information provided by the training centre on the type of course, the beginning and ending dates of the course, the number of students, and participation and failure rates.

Courses are free for unemployed workers and are covered by an attendance insurance policy. Workers may receive financial help as well as maintenance, accommodation and transport grants if the course lasts more than four hours a day. The maximum amount depends on the specialist field and level of each course, and on the distance between home and the training centre. In order to pass the course, workers must not accumulate more than three unexcused absences in any one month and they must make the most of the course. Upon successful completion of the course, candidates receive an official certificate for the corresponding occupation level. The list of official certificates is created by the MTAS in coordination with the official list of degrees drawn up by the Ministry of Education to establish a correspondence between the two validation systems.

The structure of the courses includes a practical part which is done in workshops or under the direct charge of a firm. Previously, the firm and the Public Ad-

ministration sign collaboration agreements. This on-the-job training does not imply any labour market relationship between students and firms. The firm may receive financial compensation per worker and practice hour.

Unemployed workers may go to the INEM employment office to get information on courses: type, duration, training centres, (expected) beginning dates and conditions for admission. A vocational counsellor proposes and provides details of courses which fit the needs of each unemployed worker. After the worker accepts the option, the final selection process depends on the training centre. Training courses are divided into four levels, as Table 1 displays:

Table 1: TRAINING COURSES	
Course Level	Target
Level 1: Broad Basis	This level provides knowledge and skills to make placement in the labour market easier, but it does not provide specific skills for a job. Aimed preferentially at young people.
Level 2: Occupation	Aimed at unskilled workers, it provides knowledge and skills for holding down a job.
Level 3: Specialization	Aimed at skilled workers who need to train for a new occupation.
Level 4: Adaptation and Occupation	Retraining and updating of knowledge so skilled workers can be promoted.

Source: INEM.

Apart from this general classification, training courses are divided into occupational families associated with economic sectors. Each family comprises occupational areas which include the courses. The following section presents further information on this structure.

2. DATABASE

I use administrative data provided by the INEM. The sample includes workers registered at INEM offices and was created by the INEM database management system and distributed in three data sets: (i) a file containing detailed information on unemployed workers who took and passed training courses in the first quarter of 2000; (ii) a file on untrained unemployed workers seeking jobs, monitored at three control dates (31 March 2000, 30 September 2000, 31 March 2001); and finally (iii) a daily database on contract history (as well as personal information) between 31 March 2000 and 31 March 2001.

The completion of training courses on 31 March 2000 is taking as the beginning of the unemployment period analysed in the paper, as Ham and Lalonde

(1996) establish for duration models. I concentrate on unemployed workers on 31 March 2000, aged below 60 with a job search period prior to the beginning of the training courses of less than two thousand days. As Rodriguez-Planas and Benus (2007) point out, information on employment history prior to participation is an important factor in the estimation process. Workers with incomplete information on (at least) two consecutive control dates and the final date of the unemployment period are discarded. Using these criteria, the recent labour market history of the workers in the sample is known in full.

There are features of the database which may produce biased estimates. As commented in the previous section, the process of selecting workers for the courses is not random. Candidates are placed on the eligible list according to criteria of the INEM, regional PES and training centres. The INEM selects a group of untrained unemployed workers with similar characteristics to the target group using personal characteristics (gender, age, education level and occupational information). Although the selection of trained workers is random, the candidate selection process generates two potential problems common to many applied studies which use administrative databases: endogeneity and unobserved heterogeneity. Initially, unemployed workers search for a job. The lack of opportunities in the labour market encourages them to participate in a course, so there may be endogeneity between training courses and unemployment duration. The problem of unobserved heterogeneity is explained by self-selection. Unless these effects are not important or offset each other, estimates are not interpreted appropriately⁵.

The 2001 labour market reform introduced urgent measures to increase and improve employment quality, given the high use of fixed-term contracts. The reform was based on two instruments: (i) a new indefinite contract with lower firing costs than the ordinary one, and (ii) the reduction of payroll taxes paid by firms to foster creation of/conversion to indefinite contracts. The reform extended measures first adopted in 1997 to further groups of workers. For a summary of Spanish labour market policies, see Dolado, Garcia-Serrano and Jimeno (2002), Kugler, Jimeno and Hernanz (2002) and Arellano (2005). As the reform may have different effects on trained and untrained workers, the analysis period is limited to 28 February 2001, before the implementation of the reform. The number of workers affected by the timing restriction is small (around one percent of the total sample).

The sample is also reduced because of limitations arising from censored data. Data with censorship as of 30 September 2000 is eliminated. Considering the theory proposed by Miller (1981) and Kalbfleisch and Prentice (1980), censored data on 28 February 2001 are assumed to be included in Type I censorship. Asymptotic results would be considered with Type I censorship if confidence intervals and tests were used. Results do not vary substantially when this set of observations is eliminated.

(5) The use of frailty models or survival models with unobservable heterogeneity is proposed to analyse the importance of this problem [see Lancaster (1990)]. Results indicate negligible unobserved heterogeneity in Accelerated Failure Time models, especially for those which distinguish by course level and gender.

Apart from those observations without complete information on all variables, particular groups of workers are also excluded from the estimation process, such as people with financial or social hardships. Moreover, firms can enter into a collaboration agreement with the INEM and regional PES to stage training courses if they hire at least 60 percent of the students after the course. The information on the type of contract obtained by workers makes it possible to eliminate estimation biases, as those workers are hired under a work-experience contract (*contrato en prácticas*) or a training contract (*contrato de formación*). All these workers make up less than three percent of the total sample, so separate estimates for them are not available.

Nor are disabled workers included in the final sample. An estimation process is carried out for this group because disabled workers belong to the most significant target groups of the training programme. The results suggest that those who participated in a training course were hired earlier, but the differences are not statistically significant. Disabled workers account for two percent of the total sample, so the small number of trained workers may affect the external and internal validity of the results negatively and reduce the precision of the estimates.

The final sample comprises 11,572 unemployed workers. 4,303 of them participated in the training programme in the first quarter of 2000. Several homogeneity conditions are imposed to avoid estimation bias: there are no other alternative courses available to untrained workers, and no worker in the sample was involved in any training course before the first quarter of 2000⁶.

Training courses cover a wide variety of economic activities, as Table 2 shows for the final sample. The most popular courses broken down by economic activity were those related to Administration and Office Services and Business Support Services, which accounted for nearly half of the workers trained. However, there are significant differences by gender. Around 60 percent of women trained participated in courses relating to the two activities indicated above, compared to just 30 percent of men. On the other hand, 30 percent of the men trained took part in courses associated with the Transport Equipment Industry, Construction, and Transport and Communications, in which only five percent of women took part. The high dispersion of workers prevents a proper analysis of the effect of the courses broken down by economic activity.

Table 3 presents descriptive statistics for the final sample. The figures present similarities between trained and untrained workers, except for residence and expected economic activity of the next job. Trained workers prefer white-collar jobs and a high proportion of untrained workers select jobs associated with Catering, Protection and Sales. Although the proportion of trained workers in Madrid is higher, the gap narrows for the most densely populated provinces.

Taking into account each course level, the most significant differences come from the worker's place of residence, education level and expected economic activity

(6) A less restrictive assumption is homogeneity in knowledge derived from the courses. Another option consists of assuming that alternative training is captured by other observed variables. The effect of the training programme is net in these circumstances.

Table 2: NUMBER OF WORKERS TRAINED BY GENDER, COURSE LEVEL AND ECONOMIC ACTIVITY

Economic activities	Men				Women			
	Level 1	Level 2	Level 3	Level 4	Level 1	Level 2	Level 3	Level 4
Agricultural sector								
Agriculture	0	35	0	0	0	23	0	0
Fishing	0	17	0	0	0	0	0	0
Manufacturing Sector								
Cottage Industries and Handicraft	0	2	0	0	0	10	0	0
Transport Equipment Industry	0	165	9	0	0	90	0	0
Engineering	0	30	4	7	0	2	4	0
Agro-industries	0	3	1	0	0	23	0	0
Stationery Industries	0	7	1	0	0	17	1	0
Basic Metal Industries	0	65	0	0	0	6	0	0
Chemicals	0	1	1	0	0	3	11	0
Textiles, Leather and Substitutes	0	1	2	0	0	29	5	0
Forest Industries	0	24	0	0	0	16	0	0
Staging and Installations	0	58	15	0	0	7	0	0
Maintenance and Repair	0	83	0	0	0	12	0	0
Energy and Water Generation and Supply	0	11	0	0	0	0	0	0

Table 2: NUMBER OF WORKERS TRAINED BY GENDER, COURSE LEVEL AND ECONOMIC ACTIVITY (continuation)

	Men				Women				
Construction									
Construction	0	193	3	0	0	19	0	0	0
Service sector									
Administration and Office Services	0	149	63	0	0	690	319	0	0
Trade	0	20	21	0	0	56	52	0	0
Teaching and Research	0	15	12	5	0	60	35	25	25
Business Support Services	0	89	74	150	0	177	161	167	167
Information and Artistic Expression	0	11	0	15	0	18	2	16	16
Health	0	32	1	1	0	157	0	5	5
Banking and Financial Services	0	4	10	0	0	12	20	0	0
Support Services	3	19	0	8	4	116	9	16	16
Transport and Communications	0	86	64	0	0	13	8	0	0
Tourism, Hotel and Catering Services	0	17	46	3	0	71	154	6	6
Number of individuals	3	1,137	327	189	4	1,627	781	235	235

Source: INEM database.

Table 3: SELECTED DESCRIPTIVE STATISTICS BY TRAINING STATUS

Variables	Sample	Trained				Untrained	
		Total	Level 1	Level 2	Level 3		Level 4
Woman	57.31	61.52	57.14	58.86	70.49	55.42	54.82
Age	28.83 (8.95)	28.74 (8.07)	24.86 (2.91)	28.90 (8.40)	28.35 (7.39)	28.80 (7.61)	28.88 (9.43)
Courses managed by INEM	–	3.81	0.00	4.52	3.25	0.71	–
Courses managed by regional government	–	96.19	100.00	95.48	96.75	99.29	–
Military Service	92.31	92.94	85.71	92.08	94.49	94.58	91.94
Province residence							
Madrid	4.07	43.46	0.00	44.46	33.48	63.68	15.92
Barcelona	27.24	1.79	0.00	2.24	0.99	0.94	5.42
Other provinces >1.000.000 inhabitants	30.09	16.99	0.00	17.87	17.15	11.08	33.31
Education level							
No Education	9.30	7.18	28.57	9.30	4.15	0.94	10.55
Primary Education	39.61	36.90	42.86	41.42	33.67	15.80	41.22
Secondary Education	21.25	19.96	0.00	17.94	22.47	26.89	22.01
Technical College	15.75	14.39	14.29	14.44	14.35	14.15	16.56
University Education	14.09	21.57	14.28	16.90	25.36	42.22	9.66

Table 3: SELECTED DESCRIPTIVE STATISTICS BY TRAINING STATUS (continuation)

Variables	Sample	Trained				Untrained	
		Total	Level 1	Level 2	Level 3		Level 4
Language skills							
No language skills	45.06	44.09	42.86	45.77	40.79	41.74	45.63
English	34.85	38.72	28.57	37.01	40.34	45.75	32.56
French	8.98	9.20	28.57	9.37	8.94	8.49	8.85
German	1.29	1.74	0.00	1.52	2.71	0.71	1.03
Other official languages in Spain	8.99	5.34	0.00	5.17	6.68	3.07	11.14
Other languages	0.83	0.91	0.00	1.16	0.54	0.24	0.79
Marital status							
Single	77.46	80.25	71.43	78.33	82.58	86.79	75.81
Married	20.26	17.68	28.57	19.32	15.61	12.27	21.78
Widowed	0.36	0.30	0.00	0.40	0.18	0.00	0.40
Divorced	1.92	1.77	0.00	1.95	1.63	0.94	2.01
Driving license							
Level B1	63.79	66.98	28.57	65.70	69.32	69.81	61.91
Level B2	0.42	0.39	0.00	0.40	0.36	0.47	0.44
Level C1+ C2	1.57	1.44	28.57	1.45	1.26	1.41	1.64
Level D	0.83	0.93	0.00	0.90	1.08	0.71	0.77
Level E	0.42	0.42	0.00	0.51	0.27	0.24	0.42
Other options	32.97	29.84	42.86	31.04	27.71	27.36	34.82

Table 3: SELECTED DESCRIPTIVE STATISTICS BY TRAINING STATUS (continuation)

Variables	Sample	Trained				Untrained	
		Total	Level 1	Level 2	Level 3		Level 4
Labour market history							
Do not receive benefits	63.73	65.02	71.43	64.98	65.25	64.62	62.97
Receive benefits	18.68	17.08	0.00	16.75	17.24	19.10	19.63
Receive subsidy expect for workers over 52 or related to Agriculture	8.19	7.58	0.00	7.02	0.66	5.90	8.54
Receive subsidy for workers over 52	0.44	0.33	0.00	0.25	0.36	0.71	0.51
Help has already finished	8.96	9.99	28.57	11.00	7.49	9.67	8.35
Job search duration prior to the beginning of training courses (months)	7.37 (9.40)	9.13 (10.15)	9.11 (9.98)	9.46 (10.77)	8.49 (8.70)	8.68 (9.48)	6.32 (8.76)

Table 3: SELECTED DESCRIPTIVE STATISTICS BY TRAINING STATUS (continuation)

Variables	Sample	Trained				Untrained	
		Total	Level 1	Level 2	Level 3		Level 4
Expected economic activity of the next job							
Armed Forces	0.04	0.00	0.00	0.00	0.00	0.00	0.07
Legislators, senior officials and managers	0.71	0.30	0.00	0.25	0.45	0.24	0.95
Scientific and knowledge professionals	11.71	16.94	14.29	12.52	20.67	36.09	8.61
Technicians and associate professionals	10.95	11.53	14.29	10.20	12.10	18.63	10.61
Clerks	20.04	23.64	14.28	21.89	28.43	22.64	17.91
Service workers and shop and market sales workers	22.76	20.89	14.28	22.07	21.93	10.61	23.87
Skilled agricultural and fishery workers	1.68	1.23	0.00	1.52	0.54	1.18	1.94
Skilled craft, manufacturing, extraction and building trade workers	10.70	9.53	0.00	12.52	4.33	3.77	11.39
Plant and machine operators	4.25	3.88	14.29	4.16	3.61	2.59	4.47
Non-skilled workers	17.16	12.06	28.57	14.87	7.94	4.25	20.18

The table reports means and percentages for the groups indicated. Standard errors are in parentheses where appropriate. The provinces with over one million inhabitants in 2001 were (in alphabetical order) Alicante, Asturias, Barcelona, Cadiz, La Coruña, Madrid, Málaga, Murcia, Sevilla, Valencia and Biscay. Source: INEM database.

of the next job. The higher the course level, the greater the probability of having a university degree, selecting a job associated with a skilled economic activity and living in Madrid. Female participation on training courses was similar to female representation in the untrained group except for level 3 courses (Specialization), where women exceeded 70 percent. The courses were managed mainly by the regional PES; only four percent of the workers trained took a course managed by the INEM.

Descriptive statistics by gender (Table 4) present similar characteristics to the previous tables. The distribution of workers by gender and expected economic activity of the next job is similar to that shown above for training courses. Women select jobs related to the Service Sector and men prefer the Manufacturing Sector. Finally, men are more likely to have low education and job search duration, live in the most densely populated provinces and receive no benefits.

3. IDENTIFICATION STRATEGY, ESTIMATION METHOD AND EMPIRICAL IMPLEMENTATION

The theoretical approach is based on the terminology of Heckman, Lalonde and Smith (1999) referring to the model of Roy (1951) and Rubin (1974). Workers belong to one of two mutually exclusive states, the treatment state and the non-treatment state. In this paper, the treatment group is made up of workers who participated in a training course, and the rest are included in the control group. The outcome variable is the number of days of unemployment between the end of the training course and the first day of the new job.

To overcome the Fundamental Evaluation Problem, the evaluation problem is redefined to estimate conditional population moments using parameters of interest. One of the most important parameters of interest is the average treatment effect on the treated (ATT) [see Heckman, Lalonde and Smith (1999) and Blundell and Costa-Dias (2002)]. In order to deal with the identification problem of the ATT, the Conditional Independence Assumption (CIA) is required.

Demographic characteristics, such as gender and age, and information on education level are important factors for determining participation and the outcome variable. Language skills supplement education level when it comes to getting a job, especially in the service sector and in regions whose economy depends on tourism and the catering business.

As Gerfin and Lechner (2002) and Weber and Hofer (2003) state, the treatment selection process is also subject to the (recent) labour market history of the worker, such as information on job search duration prior to the beginning of training courses and the existence of benefits and other economic aid.

Participation decisions may also depend on family conditions, and marital status affects men and women differently. Firms usually prefer women without family burdens who work full-time. Moreover, the return of married women to the labour market after motherhood is made more difficult by human capital depreciation [see Gutiérrez-Domènech (2002)]. Training programmes may help overcome these difficulties.

Table 4: SELECTED DESCRIPTIVE STATISTICS BY TRAINING STATUS AND GENDER

Variables	Men								Woman															
	Sample				Trained				Untrained				Sample				Trained				Untrained			
	Total	Level 1	Level 2	Level 3	Level 4	Total	Level 1	Level 2	Level 3	Level 4	Total	Level 1	Level 2	Level 3	Level 4	Total	Level 1	Level 2	Level 3	Level 4				
Age	30.13 (9.81)	28.98 (8.65)	23.00 (0.00)	28.79 (8.92)	29.22 (8.00)	29.76 (8.05)	30.71 (10.30)	27.86 (8.11)	28.59 (7.69)	26.25 (3.30)	28.97 (8.01)	27.99 (7.10)	28.03 (7.16)	27.37 (8.35)	27.86 (8.11)	28.59 (7.69)	26.25 (3.30)	28.97 (8.01)	27.99 (7.10)	28.03 (7.16)	27.37 (8.35)			
Courses managed by INEM	-	3.56	0.00	4.05	3.36	1.06	-	-	3.97	0.00	4.86	3.20	0.43	-	-	3.97	0.00	4.86	3.20	0.43	-			
Courses managed by regional government	-	96.44	100.00	95.95	96.64	98.94	-	-	96.03	100.00	95.14	96.80	99.57	-	-	96.03	100.00	95.14	96.80	99.57	-			
Military Service	81.98	81.64	66.67	80.74	81.35	87.83	82.16	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00			
Province residence																								
Madrid	28.02	49.64	0.00	50.48	34.25	71.96	17.11	24.77	39.59	0.00	40.26	33.16	57.02	14.93	24.77	39.59	0.00	40.26	33.16	57.02	14.93			
Barcelona	4.51	1.81	0.00	2.20	0.61	1.59	5.88	3.74	1.78	0.00	2.27	1.15	0.43	5.04	3.74	1.78	0.00	2.27	1.15	0.43	5.04			
Other provinces > 1,000,000 inhabitants	30.49	20.17	0.00	20.93	23.24	10.58	35.69	24.82	15.00	0.00	15.73	14.6	11.49	31.34	24.82	15.00	0.00	15.73	14.6	11.49	31.34			
Education level																								
No languages	12.43	12.38	0.00	15.83	7.04	1.06	12.45	6.97	3.93	50.00	4.73	2.94	0.85	8.98	6.97	3.93	50.00	4.73	2.94	0.85	8.98			
Primary Education	42.77	41.49	100.00	47.14	37.00	14.28	43.42	37.26	34.04	0.00	37.43	32.27	17.02	39.40	37.26	34.04	0.00	37.43	32.27	17.02	39.40			
Secondary Education	20.02	19.20	0.00	15.83	22.63	33.86	20.43	22.16	20.44	0.00	19.42	22.41	21.28	23.31	22.16	20.44	0.00	19.42	22.41	21.28	23.31			
Technical College	14.37	12.62	0.00	11.61	12.23	19.58	15.26	16.78	15.49	25.00	16.41	15.24	9.79	17.64	16.78	15.49	25.00	16.41	15.24	9.79	17.64			
University Education	10.41	14.31	0.00	9.59	21.10	31.22	8.44	16.83	26.10	25.00	22.01	27.14	51.06	10.67	16.83	26.10	25.00	22.01	27.14	51.06	10.67			

Table 4: SELECTED DESCRIPTIVE STATISTICS BY TRAINING STATUS AND GENDER (continuation)

Variables	Men					Woman								
	Sample		Trained		Untrained	Sample		Trained		Untrained				
	Total	Level 1	Level 2	Level 3	Level 4	Total	Level 1	Level 2	Level 3	Level 4				
Language skills														
No language skills	47.25	47.95	66.67	49.43	44.65	44.44	46.89	43.43	41.67	25.00	43.21	39.18	39.57	44.59
English	32.85	35.26	0.00	34.21	34.55	43.39	31.64	36.34	40.87	50.00	38.97	42.77	47.66	33.33
French	9.27	9.78	33.33	9.85	11.01	6.88	9.01	8.76	8.84	25.00	9.03	8.07	9.79	8.71
German	1.15	1.21	0.00	1.06	2.14	0.53	1.13	1.40	2.08	0.00	1.84	2.94	0.85	0.95
Other official languages in Spain	8.73	4.83	0.00	4.31	6.73	4.76	10.69	9.18	5.67	0.00	5.78	6.66	1.70	11.52
Other languages	0.75	0.97	0.00	1.14	0.92	0.00	0.64	0.89	0.87	0.00	1.17	0.38	0.43	0.90
Marital status														
Single	77.49	83.69	100.00	82.59	86.55	85.18	74.36	77.44	78.09	50.00	75.35	80.92	88.09	77.02
Married	20.53	14.98	0.00	15.83	12.84	13.76	23.33	20.05	19.38	50.00	21.76	16.77	11.06	20.50
Widowed	0.30	0.24	0.00	0.35	0.00	0.00	0.33	0.41	0.34	0.00	0.43	0.26	0.00	0.45
Divorced	1.68	1.09	0.00	1.23	0.61	1.06	1.98	2.10	2.19	0.00	2.46	2.05	0.85	2.03
Driving license														
Level B1	64.98	66.79	33.34	65.17	70.34	70.90	64.07	62.91	67.10	25.00	66.07	68.89	68.94	60.12
Level B2	0.61	0.55	0.00	0.62	0.30	0.53	0.64	0.29	0.30	0.00	0.24	0.38	0.42	0.28
Level C1+C2	2.04	2.05	33.33	1.93	2.14	2.11	2.04	1.21	1.06	25.00	1.11	0.90	0.85	1.30
Level D	1.25	1.69	0.00	1.50	2.45	1.59	1.03	0.51	0.45	0.00	0.49	0.51	0.00	0.55
Level E	0.67	0.54	0.00	0.79	0.00	0.00	0.73	0.24	0.34	0.00	0.31	0.38	0.43	0.18
Other options	30.45	28.38	33.33	29.99	24.77	24.87	31.49	34.84	30.75	50.00	31.78	28.94	29.36	37.57

Table 4: SELECTED DESCRIPTIVE STATISTICS BY TRAINING STATUS AND GENDER (continuation)

Variables	Men					Woman							
	Sample		Trained		Untrained	Sample		Trained		Untrained			
	Total	Level 1	Level 2	Level 3	Level 4	Total	Level 1	Level 2	Level 3	Level 4			
Labour market history													
Do not receive benefits	55.73	60.45	33.33	60.95	60.24	58.20	53.35	69.69	67.79	67.35	69.79	70.89	
Receive benefits	25.20	22.65	0.00	22.69	22.94	22.22	26.49	13.83	13.60	0.00	14.85	13.98	
Receive subsidy except for workers over 52 or related to Agriculture	8.12	6.22	0.00	5.89	7.34	6.35	9.07	8.23	8.42	0.00	7.81	10.63	8.11
Receive subsidy for workers over 52	0.97	0.72	0.00	0.62	1.22	0.53	1.10	0.05	0.08	0.00	0.00	0.00	0.02
Help has already finished	9.98	9.96	66.67	9.85	8.26	12.70	9.99	8.20	10.01	0.00	11.80	7.17	7.00
Job search duration prior to the beginning of training courses (months)	6.78 (8.74)	7.90 (8.94)	3.57 (3.10)	7.76 (8.81)	7.88 (8.38)	8.82 (10.58)	6.21 (8.58)	7.81 (9.84)	9.90 (10.77)	13.28 (11.79)	10.64 (11.81)	8.75 (8.82)	6.42 (8.51)

Table 4: SELECTED DESCRIPTIVE STATISTICS BY TRAINING STATUS AND GENDER (continuation)

Variables	Men					Woman				
	Sample		Trained		Untrained	Sample		Trained		Untrained
	Total	Level 1	Level 2	Level 3	Level 4	Total	Level 1	Level 2	Level 3	Level 4
Expected economic activity of the next job										
Armed Forces	0.10	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00
Legislators, senior officials and managers	1.38	0.54	0.00	0.44	0.53	1.80	0.21	0.15	0.00	0.00
Scientific and knowledge professionals	8.99	11.71	0.00	7.65	17.43	7.61	13.74	20.21	15.92	22.02
Technicians and associate professionals	12.33	12.92	33.34	10.20	13.46	12.03	9.92	10.65	0.00	11.52
Clerks	11.66	13.35	0.00	11.87	16.51	10.81	26.28	30.07	25.00	33.42
Service workers and shop and market sales workers	11.94	12.02	33.33	11.87	14.68	11.90	30.82	26.45	0.00	29.20
Skilled agricultural and fishery workers	2.55	2.42	0.00	2.82	1.22	2.62	1.03	0.49	0.00	0.62
Skilled craft, manufacturing, extraction and building trade workers	21.94	21.56	0.00	26.65	12.54	22.14	2.32	2.00	0.00	2.64
Plant and machine operators	7.61	7.85	0.00	7.48	11.01	7.49	1.75	1.40	25.00	1.84
Non-skilled workers	21.50	17.63	33.33	21.02	12.23	23.45	13.93	8.58	25.00	10.57
Number of individuals	4,940	1,656	3	1,137	327	3,284	6,632	2,647	4	1,627

The table reports means and percentages for the groups indicated. Standard errors are in parentheses where appropriate. The provinces with over one million inhabitants in 2001 were (in alphabetical order) Alicante, Asturias, Barcelona, Cadiz, La Coruña, Madrid, Malaga, Murcia, Seville, Valencia and Biscay. Source : INEM database.

The databases of the National Statistics Institute (INE) reveal that Andalusia, Extremadura, Ceuta and Melilla showed a high unemployment rate (nearly 25 percent), while the rate did not exceed 8 percent in Aragon, Navarra, the Balearic Islands and La Rioja in 2000. Along with the capture of (unobserved) local labour market conditions, information on province of residence is important for the participation process because courses are managed by regional PES. The databases of the INEM also show the influence of geographical factors on the outcome variable. In general, there is an inverse relationship between the unemployment exit rate from training courses and the regional unemployment rate.

The economic activity in which the next job is expected to be found also affects selection criteria because this variable is an indicator of the type of training programme taken. Unemployment duration also depends on economic prospects and the particular labour demand of employers in each economic sector. This information supplements the control for local labour market conditions as pointed out by Lechner, Miquel, and Wunsch (2007).

Driving licences and military service may reflect other effects arising from the interaction of age, gender and education. The influence of these two variables for workers specialized in specific economic activities, such as transport and communications, justifies their use.

Compared to databases used in other papers mentioned above, I consider that the information of the INEM database provides sufficient evidence to justify the CIA. After the presentation of the arguments, and as Larsson (2003) points out, the final decision to accept the validity of the CIA in the paper is made by the reader.

To avoid the dimensionality problem associated with the exact matching, I use the propensity score approach. I estimate the propensity score using a discrete choice model, specifically, a probit model. The dependent variable is the treatment status of the worker and the independent variables are personal characteristics (gender, age, province of residence, education level, language skills and marital status), labour market factors (receipt of benefits, job search duration and expected economic activity of the next job) and other supplementary information (driving licence and military service).

Apart from the CIA, there is a second condition for determining the average treatment effect using the propensity score, the Balancing Property (BP) [see Rosenbaum and Rubin (1983)]. The BP is taken into account in the process of estimating the propensity score, using a weaker version of the assumption. Observations are allocated into blocks depending on their estimated value of the propensity score. The number of blocks is identified in such a way that the mean propensity score is not different for treated and controlled units in each block. The estimates are accepted if the first moments of each variable are similar for the treated and controlled units included in any block. Otherwise, the estimates do not represent causal treatment effects.

There are several ways to match observations to the two groups. One of the best known matching methods is the Kernel method, which matches each treated unit to a weighted average of all control units. The weight is inversely proportional to the distance between the propensity score of the treated and controlled units. This method allows the use of a common control group for different treatment

sub-groups. The weight of any controlled observation varies as a function of the characteristics of the treated units.

The Kernel method depends on two elements, the kernel function and the bandwidth. I consider two alternative well-known kernel functions in the estimation process, the Gaussian function and the Epanechnikov function. The selection of the bandwidth is a difficult problem and there is a large literature on the subject [e.g. Li and Racine (2007) for further references]. A classic solution proposed by Silverman (1986) is known as the “normal reference rule-of-thumb” approach. The reference rules for the Gaussian and the Epanechnikov kernel functions are respectively, $1.06 \times N^{-1/5}$ and $2.34 \times N^{-1/5}$, where N is the number of observations in the estimation process. The values of the Silverman’s rule-of-thumb are between 0.15 and 0.19 for the Gaussian function and between 0.33 and 0.42 for the Epanechnikov function in the paper. Other tighter values are also used, between 0.01 and 0.11, in order to study the robustness of the estimates. The standard errors are derived using bootstrapping.

4. IMPACTS OF TRAINING PROGRAMMES

The differences in descriptive statistics and potential problems of endogeneity and unobserved heterogeneity due to gender and course level support the idea of evaluating these groups separately.

Men and women do not necessarily behave in the same way when faced with unemployment after training courses. As shown by the databases of the INE and the INEM on the Spanish labour market in 2001, the female unemployment rate remained around 20 percent and accounted for nearly 60 percent of total unemployment, while the male unemployment rate was below 10 percent. Women are classified as a target group in the training programme because policy-makers use ALMPs as an instrument in the fight against gender segregation.

Along with training status in the final sample, distinction by course level is also included in the estimation process. Each course level has particular objectives and methods and focuses on specific target groups. The estimation process explained in Section 3 is applied to treatment status and each course level (except level 1) using all the controlled units available. The number of participants in level 1 (Broad Basis) courses is too few for appropriate conclusions to be drawn from estimates. The sample size argument rejects the use of a more specific classification of the training programme in the estimation process.

Table 5 shows the estimated average change of unemployment duration (in days) for the treatment group compared to the control group for the final sample, using the Gaussian kernel function and Silverman’s rule-of-thumb as bandwidth. The information used in the estimation process covers sociodemographics (age, gender, marital status, education level, language skills and province of worker’s residence), next job (expected economic sector and type of contract), labour market conditions (job search duration and benefits received, if any) and supplementary details (military service and driving licence).

The table is divided into three parts: full sample, women and men. The rows present the ATT estimates, their respective standard error, the number of observa-

Table 5: ATT ESTIMATES BY GENDER AND TRAINING STATUS

	Training status	Level 2	Level 3	Level 4
ATT	-38.925*** (2.359)	-38.472*** (2.742)	-41.773*** (4.190)	-24.397*** (5.810)
Control group	11,782	11,782	11,782	11,782
Treatment group	5,896	3,848	1,447	591
Balancing Property	No	No	No	No
Only men				
ATT	-37.632*** (2.880)	-39.452*** (3.531)	-41.906*** (6.696)	-23.225*** (8.681)
Control group	4,888	4,888	4,888	4,888
Treatment group	2,092	1,449	391	249
Balancing Property	Yes*** -0.001	Yes -0.001	Yes -0.001	Yes** -0.005
Only women				
ATT	-43.226*** (3.979)	-41.942*** (3.546)	-47.268*** (4.458)	-24.413*** (8.803)
Control group	6,894	6,894	6,894	6,894
Treatment group	3,804	2,399	1,056	342
Balancing Property	Yes* -0.001	Yes* -0.001	No	Yes* -0.001

* Significant at 10% level, ** significant at 5% level, *** significant at 1% level, standard errors in parentheses.

The first and second rows show the ATT estimate and the corresponding standard error. The third and fourth rows include the number of observations in the treatment and control groups used in the estimation process.

The last row indicates whether the weak version of the BP is satisfied or not. For affirmative responses, the significance level of the test is also included. The usual value is 0.01, otherwise the value is presented. The symbol * in this row represents the number of non-significant binary variables dropped in the estimation process to accept the BP. Further information upon request.

Source: INEM database.

tions of treatment and control groups and information on the first moment condition of the BP. As commented above, the BP is required to validate the estimates, so those which do not satisfy the condition only constitute a reference for the rest. The more homogeneous the sample, the easier it is to fulfil the BP⁷. This is another reason for dividing the sample by gender and course level.

(7) In several cases, the elimination of one particular binary variable helps meet the BP. This is done only if the variable is not statistically significant.

The columns refer to options on training courses, with a general distinction between treated and controlled units (treatment status) and each course level. Level 1 courses are not included due to the small size of the corresponding treatment group.

Any estimate for the full sample (first part of Table 5) cannot be interpreted as causal treatment effects because the BP is not satisfied in all the options, although the figures provide several common ideas for the other estimates. The negative values suggest that trained workers have a significantly lower unemployment duration. The impact of the training programme is usually beneficial in reducing unemployment duration since the reduction is statistically different from zero in every case. With no distinction by gender, the estimates suggest that participants in courses leave unemployment earlier than other participants.

However, all training courses for unemployed workers do not produce the same results in terms of employment prospects. The figures reveal differences between course levels and students on level 2 (Occupation) and level 3 (Specialization) courses perform better than those on level 4 (Adaptation and Occupation). Moreover, figures differ by gender, and trained women show better results than trained men, but the courses do not help women reduce the gender gap in contracts significantly.

Level 3 courses show the best results for both men and women, reducing unemployment duration by nearly six weeks. Workers who receive level 2 courses reduce their unemployment spell by more than five weeks and students on the high-level courses find a job, at most, three and a half weeks earlier. The results confirm that all training programmes do not have the same efficiency to help unemployed workers find a job earlier. This finding is in line with the conclusions of Gerfin and Lechner (2002) for vocational training programmes in Switzerland.

Women benefit slightly more from the training programme, because the trained women reduce unemployment more than the trained men do. Differences in training effect by gender are small except for level 3 courses, since the BP is not satisfied for women in this level. Gender differences in programme effects have been found in several other evaluation studies that analyse ALMPs, see e.g. Kluge, Lehmann and Schmidt (2002) for Poland, Lechner, Miquel and Wunsch (2007) in East Germany, and Heckman, Lalonde and Smith (1999) for several cases in Western economies.

I have checked the robustness of my findings by using the Gaussian and the Epanechnikov kernel functions and changing alternative bandwidths, between 0.01 and the highest value of the rule-of-thumb (near 0.42). For brevity, only some estimates are formally reported. Tables 6 and 7 display the ATT estimates for the two kernel functions mentioned above. The results seem to be quite robust to the choice of the kernel function. With respect to the bandwidths, the estimates suggest that the smaller the bandwidth used in the estimation process, the smaller (higher) the impact in absolute value of participating in level 2 and 3 (level 4) courses on the unemployment spell. In any case, every estimate is significantly different from zero and the differences do not affect the prior qualitative conclusions commented above.

Table 6: ATT ESTIMATES – GAUSSIAN KERNEL FUNCTION

	Bandwidth	0.01	0.03	0.07	0.11	Rule-of-thumb
	Training status	-36.827	-37.185	-38.167	-38.757	-38.925
	Level 2	-37.350	-37.740	-38.462	-38.671	-38.472
	Level 3	-39.647	-38.782	-39.122	-39.886	-41.773
	Level 4	-28.028	-26.949	-25.775	-25.090	-24.397
Only men	Training status	-33.354	-33.666	-35.134	-36.345	-37.632
	Level 2	-36.354	-36.462	-37.038	-37.990	-39.452
	Level 3	-31.644	-32.187	-34.477	-36.725	-41.906
	Level 4	-29.488	-28.948	-26.226	-24.255	-23.248
Only women	Training status	-42.359	-42.021	-42.537	-43.069	-43.226
	Level 2	-43.189	-43.717	-43.547	-43.170	-41.942
	Level 3	-42.570	-43.135	-43.271	-44.177	-47.268
	Level 4	-26.468	-26.556	-24.495	-23.822	-24.413

All estimates are significant at 1% level.

Source: INEM database.

Table 7: ATT ESTIMATES – ONLY FIXED-TERM CONTRACTS

	Bandwidth	0.01	0.03	0.07	0.11	Rule-of-thumb
	Training status	-36.129	-37.030	-37.200	-37.680	-39.034
	Level 2	-37.053	-37.380	-37.760	-38.082	-38.577
	Level 3	-40.880	-39.554	-38.630	-38.899	-41.473
	Level 4	-28.756	-27.843	-26.932	-26.256	-24.397
Only men	Training status	-33.453	-33.516	-33.712	-34.330	-37.849
	Level 2	-36.570	-36.600	-36.475	-36.560	-39.617
	Level 3	-32.948	-32.802	-32.103	-33.325	-41.451
	Level 4	-30.201	-29.137	-29.008	-27.660	-23.111
Only women	Training status	-42.208	-42.091	-42.097	-42.166	-43.460
	Level 2	-42.998	-43.496	-43.699	-43.615	-42.099
	Level 3	-42.626	-42.607	-43.268	-43.238	-46.731
	Level 4	-23.711	-27.165	26.350	-25.437	-24.572

All estimates are significant at 1% level except for the value in course level 4 for women and bandwidth equal to 0.01, which is significant at 5% level.

Source: INEM database.

5. CONCLUDING REMARKS

The economic efforts of governments on Active Labour Market Policies (ALMPs) to reduce unemployment rate is widely known. These instruments should be analysed to assure the suitability of the expenditure. Although micro-econometric evaluation of ALMPs is widespread in Northern and Western Europe, the number of studies in Southern Europe is relatively low compared to the scale of public expenditure on these measures. This paper fits into the initiative of applied labour market research in the EU to meet the need for evaluation. I focus on one of the most attractive (and expensive) categories of ALMPs: training programmes for unemployed workers.

The aim of the paper is to study the National Plan for Training and Job Placement. The plan is implemented by the INEM or regional governments with devolved authority. A set of unemployed workers who participate in a training programme in the first quarter of 2000 is compared with a group of untrained (unemployed) workers. Using the number of days between the end of the course and the first day of the next job as the outcome variable from April 2000 to February 2001, propensity score matching methods are applied to evaluate the causal effect of the different types of course on the unemployment duration of men and women for transitions from unemployment to employment.

The conclusions are conditional on the potential existence of endogeneity and unobserved heterogeneity. These problems are derived from limitations of the data structure and the need for random experiments to evaluate ALMPs appropriately. It is ultimately up to the reader to judge the results by weighing up the institutional setting and the available data.

If these two factors are not important or cancel each other out, then the results suggest that the training programme reduces unemployment duration but does not eliminate gender segregation in the labour market because women only benefit slightly more from the courses than men. The effect is greater for participants in medium-level courses (Occupation and Specialization) and trained women get better results than trained men, although these training courses cannot offset the gender gap in the labour market since the average unemployment duration in the sample is 165 days for men and 191 days for women (the figures are 137 and 166 days for trained groups, respectively). The results do not confirm the existence of a “lock-in” effect, as suggested by Lechner, Miquel and Wunsch (2007) for training courses in East Germany, Larsson (2003) for younger workers in Sweden and Weber and Hofer (2003) for men in Austria. The findings are in line with those presented by Kluve, Lehmann and Schmidt (2002) in Poland, and Rodriguez-Planas and Benus (2007) in Romania, among others.

In March 2000, EU heads of state and governments launched the “Lisbon Strategy” aimed at making the EU the most competitive and dynamic knowledge-driven economy and achieving full employment by 2010. The policy recommendations for training programmes in Spain consist of the implementation of the demands of the Lisbon Strategy. First, training courses should promote medium and high level courses to improve productivity, lifelong learning and new technologies, adapting training skills to the knowledge economy and society. Second, policy-makers should generate means of stimulating the participation of women, older

workers and other disadvantaged groups of workers in the courses to reduce disincentives for labour market participation and increase the employment rate.



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RESUMEN

El artículo analiza el efecto del programa de formación público del Instituto Nacional de Empleo (INEM) para trabajadores desempleados sobre las perspectivas de empleo. Dos grupos de desempleados españoles son comparados entre abril de 2000 y febrero de 2001, uno de ellos participó en los cursos de formación en el primer trimestre de 2000. Se utiliza metodología de emparejamiento con probabilidad de participación para evaluar el efecto causal de los cursos de formación en la duración del desempleo. Las estimaciones sugieren que los cursos de nivel medio redujeron más la duración del desempleo que los de otros niveles. Las mujeres formadas reducen más el periodo de desempleo que los hombres formados, aunque las diferencias no son suficientemente grandes para reducir las desigualdades de género en el mercado de trabajo de forma significativa.

Palabras clave: políticas activas de empleo, cursos de formación, duración del desempleo, emparejamiento con probabilidad de participación.

Clasificación JEL: C31, J64, J68.