International Journal of Engineering Education Vol. 28, No. 6, pp. 1257–1265, 2012
Printed in Great Britain

0949-149X/91 $3.00+0.00

What Impact Does Training Have on Employment Stability?*

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As consequence of constant changes and rapid expiration of knowledge that occur at all levels of the current information society, the education, training and selection of a profession is not a single decision for life which ends accessing at the first job, but a continuous process too. People who are seeking education and training try to take advantage of maximum benefit of their formation. In this context the aim of this paper is to provide empirical evidence of the effects of continuous training on Employment Stability in the Spanish labor market. The dependent variable includes two situations of the active workers: continuous and discontinuous employability. To distinguish between them an Employability Index Stability was calculated taking into account two factors: employed time and job security. The data obtained from a survey of a nationwide sample of 918 employed individuals has been analysed through a binary logit model. The coefficients estimated have revealed a positive and significant relationship between the probability of employment stability and continuous vocational training received. The results obtained in this study showed that the whole process of education of people influences the career choices and work-life. So it is important to redefine the role of educators and trainers, and adapt new teaching-learning methods to promote awareness and capacity building and skills that enable workers to enter and stay in a new working environment conditioned by important changes in techniques of education and economic and social systems.

Keywords: continuous training; employment stability; Spanish labor market; binary logit model

1. Introduction

Education and training are crucial for economic and social changes. After the famous Lisbon Summit in 2000 the EU set its ambitious goal 'to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion' [1–3]. According to the White Paper [4–6], and influenced by the thoughts of the OECD, the COM has used several policy documents [7–12] in this area which support the concept of globalisation and economic development through learning and training. Some of the most important elements in these documents are: linking Lifelong learning (LLL) to the needs of a knowledge-based economy and society; emphasizing the necessity of new basic skills to live and work in the knowledge economy; securing access to learning throughout the life course; recognition of adults non-formal learning and qualifications; emphasis on the use of Information Communication and Technology in LLL [13]. It also highlighted the need to create a genuine European area and market for qualifications and occupations and to address the lack of mutual transparency and the limited recognition of qualifications and skills at Community level. This problem was not a new one, but it was becoming more urgent because of completion of the single market. Consequently, in the last decade, the idea that the LLL constitutes one of the principal axes of the common policies of the EU has been strengthened. According to Council of Europe (resolution of 27 June) [4], LLL must be understood as all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective. This concept transcends all levels of education and training and encompasses all stages of life ('from cradle to grave') and the various forms of learning (formal, non-formal and informal) with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective. From LLL perspectives professional work cannot simply proceed from a fixed educational background; rather education must be smoothly as part of work activity. Learning new skills and new knowledge cannot be restricted o formal education setting. Effective learning needs to be integrated into the work process. Regardless of the efforts and progress made in terms of LLL, training is often considered as a variable plugged into an economic model. This short-sighted cycle of training and retraining cannot be broken unless we recognize that learning is a life long learning process that cannot be separated from working [14, 15].

In this context of LLL is necessary to consider the education and training as an open, attractive and accessible process in order to '... support learning at all ages and in a range of settings, empower citizens to manage their learning and work, particularly

* Accepted 20 July 2012.

making it easier for them to access and progress through diverse learning opportunities and career pathways' [7].

Thus the role of the teachers and trainers in the new European system of education not only is educate and train in the classroom environment but intended to promote significant support to individuals during their transition between levels and sectors of education and training systems and from school to adult and working life; to young people re-entering education or training after leaving school early; to persons re-entering the labour market after periods of voluntary or involuntary unemployment, or homemaking; to workers where sectoral restructuring requires them to change the nature of their employment.

According to the above the new challenges for educators at Century 21 are a close collaboration between them at different horizontal and vertical level of education and training system, apply a deep and wide diffusion the new methods of learning and reflecting on how these methodologies could be transferred to the context of teachers and trainers and formulating proposals to support policy learning in the development of validation of LLL not only as a new paradigm of formal and informal education but as an a reality of education.

1.1 Employment stability and employability background

The broad lines of the Lisbon strategy were making the Union the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion'. In this context, continuous training in Spain has undergone enormous development thanks to the appearance of specific public policies. These policies have helped to both finance and spread occupational training throughout the business world before the financial crisis. Despite these serious efforts in terms of CVT, the current economic crisis has revealed important weaknesses in the Spanish employment market and labor relations. Within this framework, there exist substantial labor market inequalities, depending on the particular contract, but also in gender, age, ethnicity and the training and qualification and region geographical (Autonomous Community), women, youth and immigrants. The lack of capacity of the economy Spanish labor to integrate young people and highly qualified, mostly university graduates, is evident. These changes are particularly manifest in continuous loss in the Spanish employment or stability employment. So in the last years the high temporary and job instability has been and are two characteristics that accompany the Spanish labor market. Labor reforms started in the 2006 from the government to mitigate the effect of temporality and instability were able to control the increase in the rate of temporary have now been eroded by the financial and economic crisis.

In this framework, the concept of employability is making way for quite some time, contrast to the traditional job stability concept as result of the transformation of the relationship between training and work. In the old conception of unique worklife and also excluding other possible uses, there are new concepts involving greater commitment by firms. In this sense Employment Stability (ES) is a set of perceptions that depending not only on the employer but also on employees. The latter will have ES providing they do not lose their capacity to innovate and guarantee that they will constantly add value to the employers interested in their services, irrespective of social status, age or beliefs. Employable individuals, therefore, will have ES, defined as the ability to become or remain employed. Employability is defined as 'the probability of a given unemployed population finding employment in a given period of time' or 'an individual's ability to find employment on the labor market', when said individual has a series of skills, know-how and experience that ensure access to said employment [16–19]. Employability derives from a complex learning process and other economics and labor market circumstances. According to Jacoby [20, 21] the firms cannot guarantee ES in the long term but the employees can provide employability by supplying their employees with training and experience, increasing their value for the labor market. An employee can have ES if he/she is capable of innovating and helping to satisfy his/her employer's needs, thus counteracting other factors that could favour his/her replacement. So, labor is not only productive, then, but also creative. The CVT is a key factor in tackling problems related to integration or reintegration in the labor market. In fact, it is the only reciprocity factor in ES, in the sense of employability, is the fact that firms promise to help to develop their employees' skills and that employees promise to manage their careers and develop their skills, so that they can 'obtain and maintain employment, change jobs without difficulty' (ILOTERM[1]). In other words, ES should be understood as a shared responsibility between employer and employee, aimed at ensuring the latter's effective participation in his/her working environment.

The first contributions on the importance of training are in the Theory of Human Capital. According to Becker [22] the human capital of an

[1] International Labor Organization: http://www.ilo.org/public/english/employment

individual depends not only on educational attainment, but also the skill and training thus has received in his job. The main assumption is that the investment in training produces an advantage in relation to those that form, a collective and positive effect on the production of trained workers, which in turn exerts a positive impact on the productivity of businesses levels and consequently over total nation productivity and competitiveness. Considerable efforts have been made at Spanish level to evaluate the effects of CVT on the economic incentives for employees (productivity and wages) [23–25]. They have shown that the relationship between training and quantitative parameters (employee productivity before and after training and cost/benefit ratio of training initiatives per employee) is less important (in terms of statistical significance) than the relationship with qualitative parameters (increased mobility opportunities, promotion and/or professional success in general and job performance/satisfaction). Fewer studies have been developed on the impact of training on other qualitative dimensions, such as stability, job security and employability, even there is some empirical evidences that the probability of employees losing their jobs is related to their training [26–32].

The aim of the study is to quantify the effect of CVT variables and ascertain their relationship with ES as a qualitative binary variable distinguishing between continuous ES and discontinuous ES. Empirically, we test our hypothesis that continuous training supports probabilistically greater job security and/or employment stability. In order to analyse this relationship ES relating to permanence in the labor market (total time employed) and employment security (ESE) (number of contracts signed). Regarding CVT, several variables have been selected that provide valuable information about the intensity and characteristics of the training offered (type, level, areas, difficulty, location and socio-professional (age, gender, initial education levels and labor category). To analyze the impact of continuous training on employment stability we use data for the period 2002–2004.

The paper is organized as follow. In the next section 2 are presented the data, sample composition and variables included in the logit model which is associated to continuous and discontinuous employment stability. The results and discussion obtained from estimation of the binary logit model, main effect and categories compared are given in the Section 3. In the Section 4 are summarized the most important conclusion achieved by the empirical study.

2. Empirical study

2.1 Sample and data collection

The data was obtained from a personal survey addressing employed individuals in the spring of 2006. The survey consisted of 27 questions. It was designed to gather information about each subject's CVT and ES for the 2002–2004 periods. It was divided into three sections: nature of continuous training (number of initiatives, areas, typology, difficulty, location, origin of the initiatives, objective, etc.), variables measuring employability/stability (time as employed and unemployed and number of contracts signed) and socio-professional profile of subjects (age, gender, previous education, functional working area and professional category). The sample information's are shown in Table 1.

The Table 2 shows the critical values of the indicators that define in the present study the concept of the employment stability as the maximum time that a worker remains in a company and in the labor market such as time unemployed, number of companies who have worked and number of contracts signed in three years time horizon or 36 months.

The average number of months of unemployment is 1.12 with a maximum of 30 months. For 16.5% of the sample who respond that they have been unemployed between 2002–2004 results indicate that slightly more than half of them have remained unemployed for less than six months, 30% between six months and one year and the rest over a year. The mode value for the number of companies where the worker has worked were 2, ranging from 1 and 6 as minimum and maximum, respectively. While the

Table 1. Sample and data collection.

	Active employees who have received training between 2002–2004
Sample calculation	Infinite population formula
Geographic coverage	Regions: Madrid, C. Valenciana, Castilla-León, Aragón
Economic sectors	Industry, Construction, Commerce and Services
Sample size	918 active workers
Standard error (SE)	± 4.5% (confidence interval (CI) 95.5%))
Data of fieldwork	Between April–May 2006
Interview	All interviews has been completed by 2 employee for firms to 50 employee, 3 for firms between 51 and 100, and 4 employee for firms with more than 100

Source: Analysis of questionnaire.

Table 2. Employment stability and employability

Variables	Statistics	Deviation standard	Extreme values	
			Min.	Max.
Time unemployed	1.2 (means)	3.4	0	30
Number of firms working	2 (mode)	–	1	6
Number of contracts signed	2 (mode)	–	1	8

Source: Analysis of questionnaire.

maximum of contracts signed in this period by a worker was 8.

The composition of the sample regarding of the worker profile is presented in the Table 3. Respect to gender, the difference between male and female were about 5 percentage points. Around of the 70% of the sample were younger than 45 years old. The major parts of the workers had basic, secondary and bachelor education level. The largest professional category specified by the 58.4% of the workers, was qualified worker.

2.2 *Binary logit model*

The usefulness of discrete choice models compared to traditional econometrics lies that the former allows the modeling of qualitative variables through the use of techniques of discrete variables. One is logit model that allows modeling of dichotomous latent variable. Logistic regression is a method statistical analysis commonly used and very effective when to compare the probability of occurrence of two states of a phenomenon. In this case the logit model has been used to analyze the probability of a worker to obtain greater employment stability as a function of continuing education received.

Table 3. Employees profile

Personal-Professional variables	Percentage (%)
Sex	
• Male	52.6
• Female	47.4
Age	
• Under 45 years	71.4
• Over 45 years	28.6
Initial level of education	
• No education	1.4
• Basic education	24.9
• Secondary education	32.8
• Bachelor	23.1
• Diploma	10.5
• Degree	7.3
Professional Category	
• Executives	4.0
• Middle managers	9.3
• Technician	17.2
• Qualified worker	58.4
• Unqualified worker	11.2

Source: Analysis of questionnaire.

We observe two market state related with employment stability in the Spanish market labor: continuous and discontinuous stability, Therefore the employment stability include two concepts: the time that workers permanence in the labor market and the job security. The first concept is refers the ability to maintaining employment or obtaining a new employment is required. Whereas the job security concept is related to number of the contract signed per workers in the same enterprise. Both concepts are related to continuous and discontinuous ES.

In order to introduce a binary variable in the analysis, related to continuous and discontinuous ES, an Employment Stability Index (ESI) was calculated. This calculation involves two variables: permanence in the labor market and job security. The first is related to the time the person is working continuously and the second to the conservation a job for enough time to encourage subjects to participate in training initiatives. The horizon of the study is three years (2002–2004) or 36 months. The index is calculated as follows:

$$ESI = \frac{Permanence\ on\ labour\ market\ (36\ months\ -\ number\ of\ months\ unemployed)}{Job\ security\ (number\ of\ contracts\ signed\ in\ three\ years)} \quad (1)$$

The category of continuous or discontinuous ES is calculated with reference to ESI value, if:

$$\begin{cases} 18 \leq ESI \leq 36\ (months) \rightarrow the\ worker\ has\ continued\ ES \\ ESI \prec 18\ (months) \rightarrow the\ worker\ has\ discontinued\ ES \end{cases} \quad (2)$$

In the traditional logit model if y represents ES, $y = 1$ reflects continuous ES and $y = 0$ discontinuous ES. The model's estimation, through the maximum likelihood method, predicts that subjects affected by training-related and other relevant variables (x_{1-i}), will be in the continuous ES situation with a probability of $p_1 = p$ and in the discontinuous ES situation with a probability of $p_0 = 1 - p$.

The logistic coefficient (β_i) is calculated by comparing the probability that of the employees were in the continuous or discontinuous ES:

$$\frac{p_{\ continued\ ES}}{(1-p)_{\ discontinued\ ES}} = e^{\beta_0} + e^{\beta_1 x_1} + \ldots\ldots e^{\beta_i x_i} \quad (3)$$

Table 4. Variables in the model

Dependent variable ES: random variable that can takes the value 1 and 0 if the worker was in a continuous and discontinuous SE, respectively (period 2002–2004).

Independent explanatory variables

A) CVT variables

1. Degree of difficulty of courses (1 medium; 0–advanced).
2. Intention of CVT route to advanced levels (1–yes; 0–no).
3. Types of CVT courses: (1–specific; 0–general).
4. Course location: (1–within the firm's premises; 0–elsewhere).
5. Promoter initiative CVT courses (1–bouth firm's management and employees; 0–otherwise).
6. Training area: (1–Computer; 2–Sales and marketing; 3 Production area; 4–Others area).
7. Purpose of training courses: (1–improve job prospects; 0–owen satisfaction).

B) Personal-Professional variables

1. Initial level of education (1–basic education; 2–secondary education; 3–bachelor; 4–Diploma; 5–Degree.
2. Professional category: (1–Executives and middle managers; 2–Technician; 3–Qualified worker; 4–Unqualified worker).
3. Years in the same professional category (1–over 10; 0–less than 10).
4. Age: (1–under 45; 0–over 45.
5. Gender: (1–male; 0–female).

C) Control variable

Economic sectors: 1–Industry; 2 Construction; 3. Commerce; 4. Services.

Source: Analysis of questionnaire.

In the case of variables with more than two categories the Helmert test was used to contrast discrepancies between these [34]. Each category, except the last, is compared against the average effect of the following category. The variables introduced into the model are shown in Table 4.

3. Results and discussion

The discussion of the results has realised in odds ratio terms. These coefficients allow us to compare the likelihood of the continuous ES versus the discontinuous ES. The goodness of fit test of Hosmer Lemeshow for the proposed model has a value of 8.6891 with 8 degrees of freedom and probability 0.3692, indicating a proper fit. The model correctly predicted the 83.5% on a total of 891 cases included in the analysis (Fig 1). The interpretation of the logit model coefficients is the degree of change in the logit of the outcome for a one-unit change in the predictor. The positive sign of the coefficient indicate that the likelihood of the occurrence of the event increase and the vice versa. Also odds ratios (OR) are the exponentiated logit

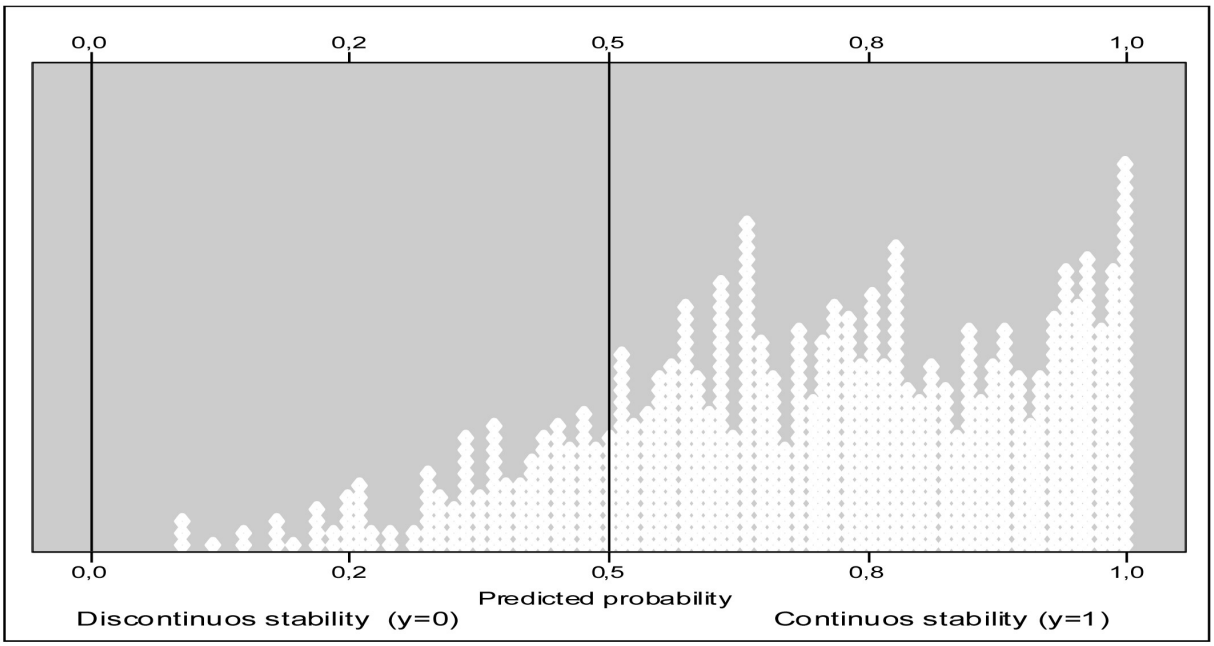

Fig 1. Prediction of probability for the dependent variable. Source: Logit model output. Each white diamond represents the cases in the study. The cutoff is 0.5

coefficient can be interpreted as the factor change in the odds of the outcome being a 1 as compared to the odds of the outcome being a zero for a one-unit change in the predictor [33].

All results of the model estimated are show in the Table 5.

The general estimation results indicate that only four of six training's variables are significant and

Table 5. Results of the estimation.

	Dependent variable: ES: 1–641 (69.8%); 0–277 (30.2%)					
					IC 95%	
Independent variables	β	**S.E**	**Wald test**	e^{β} **(OR)**	**Lower**	**Upper**
			CVT variables			
Degree of difficulty						
– Medium (1)	0.217	0.108	**4.023*****	1.243	1.185	2.122
Type of training course						
– Specific (1)	0.513	0.126	**4.071*****	1.671	1.254	3.164
Course location						
– Within the firm's premises (1)	0.378	0.323	1.375(ns)	1.458	0.776	2.1748
Promoted initiative course						
– Booth firm's management and employees (1)	0.382	0.115	**3.320****	1.465	1.343	2.674
Training area	–	–	**22.697*****	–	–	–
– Computer	0.848	0.380	2.231(ns)	2.334	1.909	2.903
– Sales and marketing	1.462	0.197	7.421***	4.314	4.139	25842
– Production area	1.957	0.775	4.525***	7.079	6.518	8.245
– Others area	–	–	–	–	–	–
Purpose of training course	0.088	0.152	0.578	1.009	0.891	1.343
– Improve job prospect (1)						
			Personal-Professional variables s			
Initial level of education	–	–	**5.875****	–	–	–
– Primary	0.234	0.840	0.011(ns)	1.024	0.260	1.702
– Secondary	0.170	0.282	0.625(ns)	1.033	0.769	1.506
– Bachelor	0.003	0.231	0.000(ns)	0.984	0.639	1.576
– Diploma	0.521	0.299	**3.040****	1.683	0.937	3.025
– Degree	–	–	–	–	–	–
Professional category	–	–	**8.570*****	–	–	–
– Executive and middle manager	1.941	0.780	**6.103****	6.965	4.510	7.976
– Technical	0.642	0.045	**6.316****	1.900	1.352	2.876
– Qualified worker	0.838	0.255	**10.806*****	2.311	1.403	4.932
– Unqualified worker	–	–	–	–	–	–
ears in the same professional category	0.384	0.105	**3.671***	**1.232**	1.105	1.562
– Over 10 (1)						
Age	0.688	0.252	**7.486*****	**1.990**	1.216	3.259
– Under 45 (1)						
Gender	0.451	0.112	**4.020****	**1.443**	1.225	2.171
– Male (1)						
			C) Control variable			
Economic sectors	–	–	**23.552*****	–	–	–
– Industry	0.177	0.259	0.468 (ns)	0.743	0.719	1.981
– Construction	0.268	0.198	1.832 (ns)	0.962	0.864	1.02
– Commerce	0.391	0.207	**3.548****	1.478	0.989	2.220
– Services	–	–	—	–	–	–
Constant	1.472	0.434	**11.518*****			

Goodness of feet statistics
–2LL = 789.33
Pseudo R^2 = 0.267
R^2 Cox & Snell = 0.203
R^2 Nagelkerke = 0.547
Statistical H-L = 8.6891 (8 gl. p = 0.3692)

Cases included in the model: 891.
Correctly predicted cases: Total: 744/891 (83.5%); Continuous stability. 550/642 (85.6%); Discontinuous stability: 194/277 (73.6%).
***. **. * **statistic significance at the 1%, 5% and 10% respectively.** ns = no significant.
The analysis has been realised with STATA. 8 software.
Source: Logit model output.

thus determine the employment stability. The sign and significantly of the coefficients indicate a positively relationship between training and continuous ES. The probability of employees enjoying continuous ES increases with some factors that are described below:

- If training courses are of a medium level and include specialised content, the probability of ES increases by 24.3% and 67.1%, respectively. The employees attending specialised courses on a medium level are 1.2 and 1.6 times more likely to have continued ES than those who do not. On the other hand, the IC associated to the OR for training course level suggests that the improvement could only be 18% for employees attending courses of a medium level. However, when courses include specialised contents this increase grows twofold.
- The positive relationship between promoter of the initiative training and ES is particularly significant. The increase is nearly 50% when the initiative for taking the course is agreed between employer and employee. The OR is from 4 to 7 times higher if training courses fall into the areas of Marketing and Sales rather than IT, Production and Other areas.
- Being a man aged under 45 represents an OR of up to 1.9 and 1.4 times more than being a woman of the same age. The IC calculated for the gender variable suggests an advantage to men of over 22.5%.
- Employees falling into the category of management or middle management are up to six times more likely to have ES than a technician. This result is repeated when the latter is compared to qualified worker. Qualified workers are 10 times more likely to have employment stability than unqualified workers. In addition, diploma degree holders are 68.3% more likely to have employment stability than full degree graduates.
- Employees in the commerce sector are 1.5 times more likely to work for more than 18 months over 3 years than construction workers. The differences between other sectors are not significant.
- With regard to sex and age variables, be male and having less than 45 years is an advantage superior to 1,9 and 1,4 times compared to being female or having more than 45 years (Fig. 2).

4. Conclusions

In the present paper, centred in the Spanish market labor, there has been postulated the general hypothesis that training exert a positive and significant effect on the employment stability. The empirical evidence shows that some CVT variables' significantly increase employees' chance of having continued Employment Stability. They include specialised training, a medium-advanced level, agreement between employee and employer and training within certain areas. These opportunities increase even further if the employee is a technician or qualified worker, if he/she has remained in one of these categories for over 10 years and is employed in the commerce. Regarding educational levels, the only significant advantage is found for diploma over degree graduates. The two groups with a greater probability of having employment stability

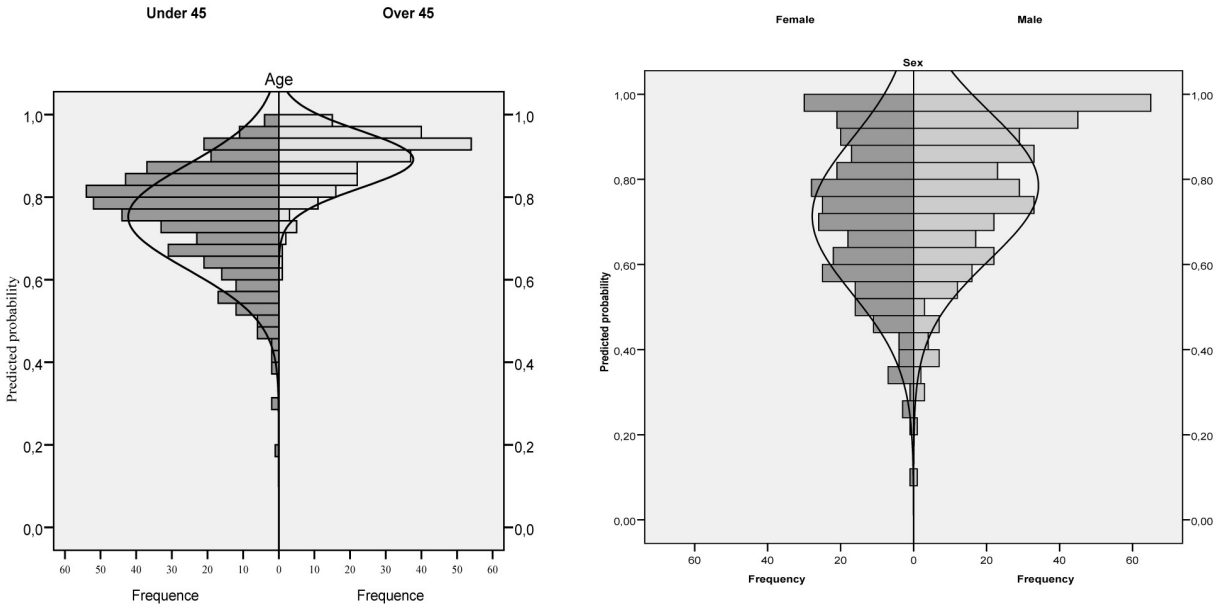

Fig 2. Frequency of cases for age and gender according to the probability obtained in the analysis. Source: Logit model output.

are men, and people under 45. The empirical results support the general hypothesis that CVT is an efficient tool for combating unemployment; it is an incentive in favour of business activity and workers' job stability. But the effects of the training are not isolation and depending of the other factors such as economic and market labor situations. And it has to be supported by reforms and restructuring of the labor market respecting a balance between flexibility, mobility, stability and safety. Finally, a redefinition of the human resource strategies businesses is necessary. So, is important that training is not used as a mere maneuver of the 'experiences labor' or as a means of increasing only the profit of the company. Employers and employees must find the point of mutual benefit to increase the training effectiveness and meet the challenges of a exigent labor market.

In this context it is important provide a guidance within the education and training system, and especially at school level, as has an essential role to play in ensuring that individuals could develop educational career and taking decisions on a firmly based. An effective process of education and training help to develop an effective self-management of their learning and career paths. Also is a key instrument for education and training institutions to improve the quality and provision of learning and prepare a generation of educators and trainers capable for meeting future needs.

Acknowledgments—This work is part of the project 'The individual impact of the continuous training on the stability and employability in Spain', which has been supported by Tripartite Agreements for Continuing Training (FTFE-Spain). The authors thank specially the consultancy FORTEC S.L. (Zaragoza) and the Confederation of SMEs (CEPYME)-Aragón to making available the necessary means for supporting and realization of the fieldwork.

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