THE ROLE OF GENDER IN FURTHER TRAINING FOR SPANISH WORKERS: ARE EMPLOYERS MAKING A DIFFERENCE?

Rosa Aisa, María A. Gonzalez-Alvarez, and Gemma Larramona

ABSTRACT

This paper investigates whether gender differentials in three categories of nonformal educational training that exist among Spanish employees – firm-financed training, public-financed training, and self-financed training – using the Survey on Adult Population Involvement in Learning Activities (AES), conducted in 2011. Although this study finds no gender gap in the probability of overall training participation, there is a negative gap in firm-financed training for women. Since this study does not detect differential preferences for training between Spanish women and men employees, gender discrimination in access to firm-financed training is at the root of this gender gap. While this discrimination does not extend to training returns among employees who take part in firm-financed courses, taking part in such training increases the probability of obtaining a salary increase or promotion, and it is discrimination in the access to firm-financed training that leaves Spanish women employees at a disadvantage.

KEYWORDS

Continuing training, gender differences, labor market inequality

JEL Codes: J16, J71, M53

INTRODUCTION

One explanation of gender inequalities in occupational attainment is the existence of a gender gap in access to job-related continuing training (Donald Tomaskovic-Devey and Sheryl Skaggs 2002; Marie Evertsson 2004; Nathalie Havet and Catherine Sofer 2008). However, there is a lack of consensus in the existing literature on whether men or women train more. This discrepancy likely arises from the range of time periods and countries considered in these studies, which examine training in very different product- and labor-market structures and within different institutional and organizational frameworks. However, when these external elements are
controlled for, gender differentials in training persist. Thus, the question remains open to other factors to explain the gender gap. Mark Wooden and Audrey VaudenHeuvel (1997) establish that gender differences in training participation are likely to be due to different preferences for training between women and men workers. Evertsson (2004), along with Andrea Bassanini, Alison L. Booth, Giorgio Brunello, María De Paola, and Edwin Leuven (2007) and Martina Dieckhoff and Nadia Steiber (2011), point to supply factors, highlighting that gender discrimination practices in access to firm-financed training are at the root of gender gaps in training. The present paper analyzes gender differentials in access to job-related continuing training, considering both demand and supply factors, which depend, in turn, on the social, institutional, and organizational environment.

We begin by building a theoretical model that brings together the main features of theories explaining gender differences in job-related continuing training participation. In this model, an employee (man or woman) decides endogenously whether to participate in training. We assume that the employee considers both economic returns (for example, if the training increases wages or promotion opportunities, enhances career prospects, or provides added job security) and non-economic returns (for instance, if training increases job satisfaction or self-fulfillment derived from the learning process itself). The employer plays a role by determining these returns to training, in particular those linked to the firm, such as wages and promotion within the firm. The employee also considers the barriers to access to training, such as time or money restrictions (such as those linked to his or her family responsibilities). Once the individual demand for training is established, it may be restrained by training supply, which depends on the source of funding.

We consider three categories of training, depending on who finances the courses: firm-financed training, public-financed training, and self-financed training. The first category is particularly important because most reported job-related training appears to be employer funded, at least partially, even when training is viewed by workers as general (Alison L. Booth and Mark L. Bryan 2007; Giorgio Brunello and María De Paola 2009). The second category introduces the role of the public sector as the provider of job-related training, and the third category reflects employee contributions to training costs. Since the supply of the first two categories of training is a function of the institutional framework that, at the same time, modifies the incentives of employees to participate in training, the institutional structure is introduced in our model. This theoretical framework emphasizes the returns and cost asymmetries arising from both the type of training and the gender of the employee, in such a way that the adjustment between demand and supply gives us a rationale for gender gaps with respect to training. In particular, for firm-financed training with neither monetary nor time costs
for the employee, if the employee (man or woman) pursues returns from the current employer, such as a wage increase or a promotion, he or she will choose firm-financed training over other types, due to the higher returns and the absence of costs. If the employee pursues external returns, for instance, a change in career orientation, he or she may find firm-financed training to be less than optimal. Thus, women’s lower participation in firm-financed training could have two interpretations: women could be more interested in returns beyond the scope of the employer decision, for example, a reorientation of their careers, or women could be experiencing gender discrimination from employers.

For our empirical analysis, we use the Survey on Adult Population Involvement in Learning Activities (AES), provided by the Spanish Statistical Office (INE), containing detailed information on the incidence of continuing training among the Spanish adult population in 2011. Interestingly, although the European Institute for Gender Equality assigned Spain a general score of 54 points in 2010, the same score as the EU-27 mean, Spain’s score is 11 points below the EU-27 mean in terms of training equality at work. What explains this gap in terms of training equality in Spain? We find that having family responsibilities, a temporary contract, or a part-time job explain part of this imbalance, but, even after controlling for personal and family-related characteristics, as well as a number of job-related attributes, being a woman per se diminishes the probability of participation in firm-financed training. Moreover, since we detect no variance in the motivations for training among women and men, the evidence suggests that Spanish women face discrimination in their access to firm-financed training. The key question is whether public or self-financed training supply can offset this gender gap; and the answer appears to be, no. Using control variables, we detect no public-financed or self-financed training gender gap in favor of women.

A REVIEW OF THE ECONOMIC LITERATURE

The economic literature on gender issues in access to training has focused on, first, detecting whether the degree of training participation is significantly different between men and women (Table 1) and, second, analyzing whether more gender differentials emerge with respect to training returns. Table 1 shows that while some studies find that women receive less continuing training than men, others see no significant differences in the rates of participation in continuing training by gender, or find a positive training gap for women. It is clear that the type of training considered plays an important part in explaining gender differences in training participation, and it also seems clear that factors such as technology evolution, sector, industry, and occupational structure could explain differences in the rate of training among men and women.
## Table 1 Effect of gender on training participation

| Evidence of a negative gender gap | Number of countries and year |
|-----------------------------------|-----------------------------|
| Dominique Goux and Eric Maurin (2000) | Participation in firm-provided training is lower for women | 1; 1993 |
| Exertsson (2004) | Women are less likely to participate in formal on-the-job training | 1; 1994–8 |
| Bassanini et al. (2007) | Being a woman in Greece reduces the probability of total training by 0.8 percentage points, *ceteris paribus* | 11; 1995–2001 |
| Melanie K. Jones, Paul L. Latreille, and Peter J. Sloane (2008) | Women are less likely to receive employer-funded off-the-job training | 1; 1994–5 and 2000–1 |
| Patrick Lee O’Halloran (2008) | Men receive on-the-job training of a longer duration | 1; 1979–2004 |
| Uschi Backes-Gellner, Yvonne Oswald, and Simone N. Tuor (2011) | Being a woman has a negative effect on the probability of participating in employer-provided/financed training that occurs during working hours, or both | 1; 2006 and 2009 |
| Dieckhoff and Steiber (2011) | Male employees are more likely to train than their female colleagues | 25; 2004–5 |

| Evidence of no gender gap | Number of countries and year |
|--------------------------|-----------------------------|
| Giorgio Brunello (2001) | No significant differences in the probability of receiving total training between men and women. General and firm-specific training are considered together | 13; 1994–6 |
| Wiji Arulampalam, Alison L. Booth, and Mark L. Bryan (2004) | No significant gender differences appear in terms of participation in work-related training in Austria, Belgium, Italy, Ireland, the Netherlands, and UK | 10; 1994–2000 |
| Bassanini et al. (2007) | No significant gender differences in terms of total training incidence are detected in Denmark, the Netherlands, Belgium, France, Italy, Spain, Austria, and Finland | 11; 1995–2001 |

| Evidence of a positive gender gap | Number of countries and year |
|-----------------------------------|-----------------------------|
| Wooden and VandenHeuvel (1997) | Female positive gap in on-the-job training participation | 1; 1993 |
| Patricia A. Simpson and Linda K. Stroh (2002) | Overall levels of training participation are higher for women than for men | 1; 1995 |
| Arulampalam, Booth, and Bryan (2004) | Women are more likely than men to participate in work-related training in Denmark, Finland, Italy, and Spain | 10; 1994–2000 |
| Jones, Latreille, and Sloane (2008) | Women are more likely to receive on-the-job training and off-the-job training without employer support | 1; 1994–5 and 2000–2001 |
| Bassanini et al. (2007) | In Anglo-Saxon countries, women take training more frequently than men by 2.5 percentage points, *ceteris paribus* | 11; 1995–2001 |
| O’Halloran (2008) | Women have a higher incidence of on-the-job training | 1; 1979–2004 |
Moreover, the sociological literature provides a broader context for the analysis of training, as part of a larger concept, the quality of work (a multidimensional concept that covers skill level, degree of autonomy, opportunities for skill development, job security, and work–family balance). From this point of view, Duncan Gallie (2007) claims that differences in institutional systems could explain differences in the organization of training that affect training incidence and training returns. Gallie supports the employment regime theory, distinguishing three institutional structures: the inclusive regime (such as the Scandinavian countries), the dualist regime (such as Germany, France, and Spain), and the market regime (such as the UK). Inclusive employment regimes support employment policies more favorable to universal training opportunities, likely leading to a more equitable distribution of training. In dualist regimes, access to training can be expected to be highly stratified in favor of those in permanent contracts, to the detriment of temporary or part-time employees (Martina Dieckhoff, Jean-Marie Jungblut, and Philip O’Connell 2007). Market regimes have a tendency toward minimal terms-of-employment regulations.

As an alternative to the employment regime theory, the production regime theory emphasizes the existence of “varieties of capitalism” (Peter A. Hall and David Soskice 2001; Bob Hancké, Martin Rhodes, and Mark Thatcher 2007) and distinguishes between liberal (UK and Ireland) and coordinated (Germany and Scandinavian countries) market economies. Spain and France belong to a third production type, the Mediterranean regime, where the state plays an important coordinating role, but liberal features remain. In liberal market economies, skills are general (that is, suitable for different jobs), while in coordinated market economies skills are more specific. Therefore, the production regimes perspective predicts that employers play a lesser role in skill formation in liberal market economies than in coordinated market economies (Michael Tahlin 2007). However, if school-based skills are highly general, then specific skills will have to be learnt within the firm to compensate for the lack of specialization in initial education (Giorgio Brunello 2001).

Since we analyze training in Spain, three institutional characteristics should be noted. First, education prior to labor market entry is very general, such that continuing training becomes very important for both employees and employers. Second, as is typical of a Mediterranean production regime, the government plays a key role in terms of training. Today, Spanish continuing training is overseen by the Tripartite Foundation for Training in Employment, whose governing body comprises representatives from the Spanish National Employment Service, which belongs to the ministry of Employment and Social Security, employer organizations, and trade union associations. The activities supported by the Tripartite Foundation can be grouped into demand-driven training (focused on firm needs).
and supply-driven training (focused on the professional development of workers). Demand-driven training schemes include company-specific programs that involve training activities during working hours, financed by the firm. Firms involved in training activities pay a vocational training levy and receive in return a payroll-tax reduction. Supply-driven training is focused on workers (employed or unemployed) and is funded by public subsidies granted to the most representative business and trade union associations, organizations for the self-employed, and other business confederations, all of whom may offer courses to workers at no cost, outside normal paid working hours. The Spanish Autonomous Communities also develop supply-driven training programs in their geographical regions, which leads to certain regional differences. Third, firm-financed training in Spain has traditionally concentrated on the most-favored workers, as expected in a dualist employment regime. Using data from the 1994 European Community Household Panel, Carlos Peraita (2005) finds that firm-financed training is focused on the better-educated Spanish employees, working in high-wage occupations. Bassanini et al. (2007) obtain a similar finding from the European Community Household panel for the period 1995–2001. They provide individual regressions by country and use total training as the dependent variable. Neither Peraita (2005) nor Bassanini et al. (2007) detect gender differences in terms of firm-financed training and total training participation, respectively. However, the Spanish authorities appear to perceive a lack of opportunities for women workers, in terms of continuous training. In the last negotiated reform of the training system within the social dialogue framework, in 2007 (Royal Decree-Law 395/2007) and in the 2012 labor reform (Law 3/2012), the Spanish government gives priority in training to women. To the best of our knowledge, there has been no recent econometric analysis of training incidence among Spanish employed women since these laws were passed.

Apart from training participation, returns to training have also received the attention of prior studies. Training appears to have effects on wages and on promotion, but the sign in terms of gender is still an open question. Using data from the Swedish Survey of Living Conditions in the mid 1990s, Evertsson (2004) finds that, among those who receive more remunerative training, such as training that increases promotion opportunities, women’s annual earnings do not increase whereas men’s annual earnings do. However, Eduardo Melero (2010), with data from the UK, finds that women workers who receive training increase their chances of being promoted, whereas men do not. Again, we should remember that the institutional and educational structures of these countries are quite different, making cross-country comparisons problematic. Recently, the interest in non-economic returns to training has increased. For instance, using data from the British Household Panel Survey for the period 1999–2008, Vurain Tabvuma, Yannis Georgellis, and Thomas Lange (2015) find
that orientation training has a positive impact on the job satisfaction of women only in the public sector, and they give as explanation that this type of training – which helps to ameliorate work–life conflicts, which are more frequent among women – is more helpful in the public sector. In the case of men employees, orientation training is positively related to overall job satisfaction in both the public and the private sector. No recent empirical evidence about the returns to training by gender in Spain has been found.

THEORETICAL MODEL

We consider an employee (man or woman) who derives utility from goods consumption $c$, and nonmonetary returns to training participation. Training falls into three categories, depending on the source of funding: participation in training financed by the firm ($t_f$), participation in training financed by the public sector ($t_p$), and participation in training self-financed by the employee ($t_s$). We assume the following individual utility function:

$$U^i = V_i(c) + Z_i(t_f, t_p, t_s) - \Phi_i(t_f, t_p, t_s) i = male, female$$

where $c$ is the level of consumption goods, $Z_i(\cdot)$ denotes the utility gains derived from each type of training – that is, nonmonetary returns to training, such as job satisfaction, or personal gains like self-fulfillment or occupational prestige – and $\Phi_i(\cdot)$ denotes the loss of utility derived from the effort associated with each type of training. This loss of utility could be related, for example, to the opportunity cost of giving up alternative activities (such as childcare or other housework or leisure activities). Note that each type of training is linked to different returns and costs. In this sense, purely general training will probably have to be self-financed by the employee and will be linked to greater personal gains, such as self-fulfillment or reorientation of a career; that is, $Z_i^{t_s} > Z_i^{t_f}$.

Gender is also a source of asymmetries. The gender role theory establishes that individuals living in a traditional environment usually accept men as the main breadwinners and women as the main homemakers (Paula England 2005), and, therefore, the utility costs derived from training will be greater for women than for men. Our model allows us to easily incorporate this aspect of gender role theory, by assuming that $\Phi_{male}(\cdot) < \Phi_{female}(\cdot)$. A larger or smaller gender gap will depend on the gender regime in which the employee lives. Although European Union countries (and North America) are immersed in a process of transition from a domestic gender regime to a public gender regime, individual countries have generally followed three different routes in this process (Sylvia Walby 2004): the social-democratic, public-service route followed by Scandinavian countries, where women enjoy public services that allow them to increase
their paid employment and their training participation; the market-led route, followed by the United States and characterized by the market as a provider of services; and the regulatory route, followed by the Eurozone countries, where policies to promote gender equality and social cohesion play a key role.

As for the budget constraint, we assume that each individual is endowed with 1 unit of time that can be allocated between working and training. We consider that each training category leads to a different wage return \( w_i(t_f, t_p, t_s) \). Training that is firm specific, or training that is general but offers a specific combination of skills tied to a particular firm, probably better satisfies the requirements of the employer who also decides wages, promotion opportunities, and employment security – in analytic terms, this requires that \( w_{t_f}^i > w_{t_s}^i \). Gender emerges again as a source of asymmetries. Human capital theory, focused on the economic incentives to invest in training, establishes that care responsibilities lead to shorter and more discontinuous working lives among women and, therefore, to shorter periods in which the investment in training can be recovered (Alan Manning and Joanna Swaffield 2008). This, in turn, implies that \( w_{t_f}^{male} > w_{t_f}^{female} \). Similarly, cost asymmetry is also incorporated in our theoretical framework. Following Harald U. Pfeifer (2008), we consider that firm-financed training does not involve either monetary or time-opportunity costs from the employee’s perspective, public-financed training involves a time-opportunity cost, and training fully financed by the employee entails both monetary and time-opportunity costs. Note that, since each training type is linked to different returns, and different costs of training are different for men and women, this differentiation plays a significant role in the individual training demand. The budget constraint takes the following form:

\[
c + p_s t_s \leq (1 - t_p - t_s) w_i(t_f, t_p, t_s), \quad i = \text{male, female}
\]

(2)

where \( p_s \) is the price the employee pays for a course without firm or public financing. Although this model is static, dynamic factors can be introduced by considering \( w_i \) as the present value of the wage or economic return stream during the working life, and \( Z_i(t_f, t_p, t_s) \) as the present value of the nonmonetary returns. The wage stream varies significantly, for instance, if women return to a part-time job after childbirth, which usually entails a penalty in terms of downward mobility (Jacqueline Scott 2010). Furthermore, such women may find training to be more necessary than for men of equal age, to signal their commitment to work (Bernd Fitzenberger and Grit Muehler 2011). The term \( \Phi_i(t_f, t_p, t_s) \) also changes as the life cycle evolves. For example, women in charge of their children’s upbringing will have higher utility costs linked to training than before their maternity. Utility costs can also be considered at their present value.
It is logical to consider that the variables $t_f$ and $t_p$ are bounded by the amount of training supplied by the firm ($T_f^i$) and by the public sector ($T_p^i$). According to the taste and statistical discrimination theory of Shelley J. Correll, Stephan Benard, and In Paik (2007), the training participation gap between men and women could be a consequence of employer discriminatory practices. Statistical discrimination occurs when employers believe that women have a weaker attachment to the job than men, and therefore, employers may not view it as worthwhile to invest in training for women (involving direct training costs and/or indirect costs to production). The employer takes the decision, comparing the increase in productivity linked to training, with the costs of training, subject to the financial restrictions. Taste discrimination does not rely on economic motivation; it is exclusively based on the cultural stereotypes held by the employer. Whatever the source of gender discrimination, it provokes a shortage of firm-financed training supply among women. Taking $T_f^i$ as the upper bound of firm-financed training, it is feasible to interconnect the rationale of the worker and the employer regarding training. Gender discrimination, or occupational gender segregation, would mean that

\[ T_f^{\text{female}} < T_f^{\text{male}}. \]

This restriction may also reflect a particular feature of production regime theory, with respect to skill formation. The importance of specific skills in a coordinated market economy implies a greater difficulty for women to acquire specific skills because of a higher risk of discrimination by employers who may be reluctant to train employees with a higher probability of career interruptions (Margarita Estébez-Abe 2005). Similarly, dualist employment regimes appear to suffer from a high gender polarization risk (Gallie 2007). Thus, although firms tend to invest in firm-specific continuing training, or in general training if poaching rates are low, this tendency may be either more or less noticeable depending on whether the employment regime is inclusive or dualist, whether the production regime is coordinated or liberal, and whether the initial skill formation is general or vocational. In other words, the institutional structure affects the incentives – of employers, employees, and the public sector – to invest in continuing training. This can be incorporated in the model as an externality, in such a way that monetary and nonmonetary returns to training are better represented by the functions $w(t_f, t_p, t_s, I)$ and $Z_t(t_f, t_p, t_s, I)$, respectively; training costs of the employee are better represented by $\Phi(t_f, t_p, t_s, I)$; and the supply of firm-financed training and public-financed training is improved, given by $T_f^i = T_f^i(I)$ and $T_p = T_p(I)$, respectively, where $I$ denotes the institutional structure.
THE ROLE OF GENDER IN FURTHER TRAINING

Taking previous considerations into account, each individual (man or woman) faces the following problem:

\[
\text{Max} \quad U^i = V(c) + Z^i(t_f, t_p, t_s, I) - \Phi^i(t_f, t_p, t_s, I) \quad i = \text{male, female}
\]

Subject to \(c + p_i t_s \leq (1 - t_p - t_s) w^i(t_f, t_p, t_s, I)\)

\[
0 \leq t_f \leq T^i_f(I)
\]

\[
0 \leq t_p \leq T^i_p(I)
\]

\[
t_p + t_s < 1 \quad c > 0, \quad t_s \geq 0
\]

The interior solution for each type of training, for example, \(0 < t_f < T^i_f(I), 0 < t_p < T^i_p(I), \text{and } 0 < t_s < 1\), meets the following necessary conditions, respectively (the problem is solved in Supplemental Online Appendix A, available on the publisher’s website):

\[
Z^i_{t_f} + V'(1 - t_p - t_s) w^i_{t_f} = \Phi^i_{t_f} \quad (3)
\]

\[
Z^i_{t_p} + V'(1 - t_p - t_s) w^i_{t_p} = \Phi^i_{t_p} + V' w^i(t_f, t_p, t_s, I) \quad (4)
\]

\[
Z^i_{t_s} + V'(1 - t_p - t_s) w^i_{t_s} = \Phi^i_{t_s} + V' w^i(t_f, t_p, t_s, I) + V' p_{t_s} \quad (5)
\]

The above expressions establish that an individual decides to increase (decrease) their participation in each training type if the sum of the returns derived from this training exceeds (is less than) the sum of its marginal costs. The employee (man or woman) who pursues returns from their employer – that is, a wage increase or promotion within the firm or enhanced employment security – will choose firm-financed training over other forms of training, due to its greater returns and minimal time and/or monetary costs. However, equation (3) will become invalid when the supply of training by the employer is insufficient to cover the employee demand. There is no adjustment between training demand by employee and training supply by employer. If that happens, the employee will turn to public-financed training, implying a cost in terms of time or will decide to self-finance their training, incurring both time and monetary costs, although perhaps with a goal of returns that are better focused on the specific needs of the employee. One or other option will be taken, depending on the capacity of the public supply of training to meet employee demands. Thus, those women who want to obtain returns from their employer will turn to public-financed training and/or self-financed training if access to firm-provided training is more restricted for them than for men. However, those women who want returns unconnected to their employer – that is, a reorientation of their careers – will likely engage in public-financed training or self-financed training, depending on their personal circumstances and the institutional structure of the labor market.
EMPIRICAL ANALYSIS

For this analysis we use the INE’s AES, the Spanish counterpart of the European Adult Education Survey coordinated by Eurostat; it focuses on the educational and learning activities of the Spanish adult population, between ages 18 and 65, during 2011. The data also include a large set of demographic and socioeconomic characteristics, educational background, job attributes, and firm characteristics. The survey differentiates between formal education, nonformal education, and informal learning. Formal education is:

education provided in the system of primary schools, secondary schools, universities, and other formal education institutions that normally comprise an ongoing ladder of full-time education for children and young persons, which generally begins at 5–7 years of age and continues until the person reaches 20–25 years of age.

Nonformal education entails “those organized and sustained educational activities that do not correspond exactly with the aforementioned definition of formal learning.” Nonformal learning may therefore take place both inside and outside the educational institutions and serve all ages. Informal learning is defined as being “deliberate, but less organized and less structured, and may include learning events (activities) taking place in the family, in the workplace, and in the daily life of every person.” For this analysis, we focus on the nonformal educational activities of employees. The survey was taken by 8,138 workers, 3,591 of whom participated in nonformal educational activities. For those who experienced multiple nonformal training courses, the information used in the analysis relates to one randomly selected course (the AES survey does not provide information about duration of training courses, which limits our analysis).

The survey also provides information about the reasons to train: (1) improves job performance or career prospects; (2) increases the chances of remaining at work; (3) increases the chances of finding another job/profession; (4) to start their own business; (5) attendance is obligatory; (6) provides useful skills for everyday life; (7) increases knowledge on a subject of interest; (8) to obtain a certificate or diploma; (9) to meet new people. Table 2 shows the importance of each of these reasons for the pooled sample and by gender. Almost three-quarters of the employees, men and women equally, train to improve job performance or enhance their career prospects. Gender differences are observed in some respects, for instance when attendance is obligatory: only 10 percent of women attend courses because it is mandatory, while this percentage is 10 points higher for men. Since these reasons to train are quite different, we consider it adequate to study separately overall training and work-related training. From 3,591 employees who participated in nonformal educational activities
Table 2 Motivations to train by gender, 2011

| Motivation                                                                 | Pooled | Men | Women |
|---------------------------------------------------------------------------|--------|-----|-------|
| 1. Improves job performance or career prospects                            | 72.15  | 71.66 | 72.66 |
| 2. Increases the chances of remaining at work                               | 28.29  | 28.39 | 28.19 |
| 3. Increases the chances of finding another job/profession                  | 15.54  | 14.66 | 16.44 |
| 4. To establish own business                                               | 2.14   | 2.64  | 1.64  |
| 5. Attendance is obligatory                                                | 15.59  | 20.65 | 10.40 |
| 6. Provides useful skills for everyday life                                | 31.41  | 27.51 | 35.42 |
| 7. Increases knowledge on a subject of interest                            | 53.36  | 50.63 | 56.16 |
| 8. To obtain a certificate                                                 | 20.25  | 19.88 | 20.62 |
| 9. To meet new people or for fun                                           | 4.48   | 4.01  | 4.97  |

Source: AES, INE.

(overall training), 3,019 participate in courses taken for work-related reasons numbered from 1 to 5 (work-related training).

Workers were asked whether training expenditures were incurred, and whether financial support came from their employer or from public institutions. They were also asked whether the course was held during working hours. This information is available for 1,525 individuals participating in work-related training (see Table 3). We classify individual continuous training into three categories: (1) Firm-financed training, including all courses that are either monetary- or time-financed by the firm; (2) public-financed courses, financed by public programs and taking place outside working hours; and (3) self-financed courses, any training paid for by the employee, outside working hours.

In Table 3, the descriptive statistics regarding training activities are reported, showing sample means of training participation in different types of course, separated by gender. Interestingly, overall training participation is around 44 percent, slightly higher among women (44.9 percent) than men (43.4 percent), whereas this difference is reversed when we only consider work-oriented training: 36.8 percent of women train while this percentage is 37.4 percent for men, although the difference is not statistically significant. However, if different categories of training are considered, women’s average participation rates in self-financed or public-financed courses are significantly higher than those of men, whereas men participate significantly more often in firm-financed courses. While 70.5 percent of men participate in employer-financed courses, or courses held during working hours, this ratio is only 51.1 percent for women. The male–female gap in firm-provided training is almost 19 points, while women tend to participate more in other types of training.

The AES survey also offers information on whether workers obtained any of the following benefits from training: (1) getting a new job; (2)
### Table 3 Gender differences in training by source of funding, 2011

|                                  | Pooled |       | Men  |       | Women |       | Diff  |  t-ratio |
|----------------------------------|--------|-------|------|-------|-------|-------|-------|----------|
|                                  | N      | %     | N    | %     | N     | %     |       |          |
| **Total sample of employees**    | 8,138  | 4,193 | 3,945| 4,193 | 3,945 | 4,193 | 3,945 |          |
| Participation in training        | 3,591  | 44.1% | 1,821| 43.4% | 1,770 | 44.9% | −1.5  | −1.3     |
| Participation exclusively in     | 3,019  | 37.1% | 1,567| 37.4% | 1,452 | 36.8% | 0.6   | 0.53     |
| work-related training            |        |       |      |       |       |       |       |          |

### Subsample of trained employees where the funding source is known

|                                  | Pooled |       | Men  |       | Women |       | Diff  |  t-ratio |
|----------------------------------|--------|-------|------|-------|-------|-------|-------|----------|
|                                  | N      | %     | N    | %     | N     | %     |       |          |
| Participation in work-related    | 1,525  | 776   | 749  | 776   | 749   | 776   |       |          |
| training                         |        |       |      |       |       |       |       |          |
| • Firm-financed training         | 930    | 61%   | 547  | 70.5% | 383   | 51.1% | 18.9% | *** 7.9 |
| • Public-financed training       | 270    | 17.7% | 106  | 13.7% | 164   | 21.9% | −4.2% | *** −4.23 |
| • Self-financed training         | 325    | 21.3% | 123  | 15.8% | 202   | 27%   | −11.2%| *** −5.35 |

*Note:*** , ** denote statistical significance at the 1, 5, and 10 percent levels, respectively.*

*Source: AES, INE.*

promotion at the firm; (3) increase in salary; (4) ability to perform new tasks; (5) improved performance at work; (6) met new people or other personal reasons; (7) updated knowledge on a subject of interest. As we can see in Table 4, the incidence of work-related benefits from training (returns 1–5) is higher when we consider only work-oriented training, while overall training provides greater nonwork-related benefits, such as meeting new people or updating general knowledge. However, we detect no gap in returns from work-related training. Women appear to benefit more than men from training by getting a new job, an increase in wages, or developing new skills at work, while men appear to benefit more in terms of promotions or improvements in work performance.

Dieckhoff and Steiber (2011) find that employed men and women tend to have similar rates of work-oriented training, using panel data from the 2004/2005 European Social Survey of twenty-three countries, including Spain (see Table 1). However, they do detect a gender gap to the disadvantage of women, when control variables are introduced. We now check whether the econometric analysis establishes, the existence of a gender training gap, using 2011 AES data, via the following procedure.
Table 4 Perceived returns from training by gender, 2011

| Overall training         | Work-related training     |
|--------------------------|---------------------------|
|                          | Pooled | Men  | Women | Pooled | Men  | Women |
| 1. Get a new job         | 16.15  | 14.44| 17.91 | 18.15  | 16.08|20.39  |
| 2. Promotion at the firm | 13.17  | 13.78| 12.54 | 14.84  | 15.12|14.53  |
| 3. Higher salary         | 3.54   | 3.13 | 3.95  | 3.91   | 3.45 |4.41   |
| 4. Able to do new tasks  | 7.99   | 8.07 | 7.91  | 8.48   | 8.30 |8.68   |
| 5. Improved performance at work | 24.03 | 24.66| 23.39 | 26.07  | 26.16|25.96  |
| 6. Meet new people or other personal reasons | 9.94 | 8.29 | 11.64 | 8.61   | 7.15 |10.19  |
| 7. Update knowledge of a subject of interest | 54.22 | 51.24|57.29  | 53.13  | 49.90|56.61  |

Source: AES, INE.

The first step is to discover whether gender differences in overall training and work-related training exist, after controlling for a range of factors. We find no gender gap in favor of men for overall training, although we do find it when only work-oriented training is considered. Second, we repeat the analysis differentiating courses by the source of funding: firm-, public-, or self-financed training. We detect a gender gap in favor of men for firm-financed training, but no gender gap is found for public- and self-financed training. Since this gender gap in firm-financed training may be due to the fact that women and men do not pursue the same training returns, which would push them to select different training types, we investigate whether men and women have different motivations to take up training. We find no gender differentials in training preferences. The final step is the analysis of the effect of the source of funding and gender on the returns from training. As expected, our analysis confirms that firm-financed training provides significantly higher returns from the employer: promotions in the current job, higher salary and wages, and so on, compared to public- and self-financed training. Taking into account that women participate less in firm-financed training, this finding leaves women at a disadvantage.

We run a logit regression model to predict worker training participation in the pooled sample of men and women workers. Let us consider first
the pooled sample, with $T$ being the unobserved benefits of receiving any kind of training. These benefits are associated with individual personal characteristics, together with job and firm characteristics and barriers to training. A specific worker will be participating in continuous training as long as $T$ is greater than zero. In practice, $T$ is unobserved and is replaced in the estimated models by its binary counterpart $C$, which takes a value of 1 if the worker participates in any type of training, and 0 otherwise. Since $X$ is a vector of personal and job characteristics and barriers, and $\mu$ the error term, the decision may be seen as a latent variable model, in which the net benefit of training for the employee is given by:

\[
\begin{cases}
T = \beta X + \mu, \\
C = 1 \text{ if } Training > 0 \\
C = 0 \text{ if } Training \leq 0
\end{cases}
\]

Specifically, the estimations are based on the following model:

\[
\Pr(\text{ob}(C)) = \alpha_0 + \sum_i \alpha_i X_i + \mu
\]

The variables included in $X$ are personal characteristics, such as gender, age, partner, children, nationality, and educational level, together with other job-related attributes such as job tenure, size of firm, job position, representation of women in the occupation, economic sector, and whether the contract is temporary or part time. Representation of women in the occupation is measured by the gender concentration that allows us to examine the actual percentage of women employed in a given occupation. Barriers to training and learning concerns are also included to capture the intrinsic and extrinsic characteristics of training. Certain variables indicating a personal inclination to gain knowledge are included, such as an interest in self-learning, and whether the worker has been actively looking for information on courses. Further, the lack of time due to family responsibilities, or the presence of age- or health-related problems, poses difficulties regarding participation in training activities. The list of variables considered in the econometric analysis and their descriptive statistics can be found in Supplemental Online Appendix B, available on the publisher’s website.

Table 5 presents the determinants of receiving overall and work-related training by employees in Spain. The most important finding is that gender has no significant effect on the probability of participation in overall training, indicating that the incidence of training among employees in Spain does not present a gender bias when personal characteristics, difficulties, learning concerns, job, and firm characteristics are all controlled for. However, we do find a significant gender gap...
### Table 5: Determinants of receiving overall and work-related training

|                        | Overall training |             | Work-related training |             |
|------------------------|-----------------|-------------|-----------------------|-------------|
|                        | Coefficient     | Std. Err.   | Coefficient           | Std. Err.   |
| **Personal characteristics** |                 |             |                       |             |
| Woman                  | $-0.0071$       | $0.0481$    | $-0.0968$ **          | $0.0480$    |
| Age                    | $-0.0055$ ***    | $0.0021$    | $-0.0056$ ***         | $0.0021$    |
| Partner                | $0.0428$        | $0.0408$    | $0.0381$              | $0.0407$    |
| Has children under age 25 | $0.0481$   | $0.0486$    | $0.0509$              | $0.0487$    |
| Woman with children    | $-0.0561$       | $0.0678$    | $0.0358$              | $0.0679$    |
| Spanish citizenship    | $0.1108$ *      | $0.0603$    | $0.1322$ **           | $0.0610$    |
| **Skills (reference: no education)** |                 |             |                       |             |
| Basic skills           | $0.1289$ ***    | $0.0493$    | $0.1162$ **           | $0.0501$    |
| Medium skills          | $0.1117$ *      | $0.0618$    | $0.0903$              | $0.0624$    |
| High skills            | $0.3444$ ***    | $0.0603$    | $0.2955$ ***          | $0.0602$    |
| **Job and firm characteristics** |                 |             |                       |             |
| Tenure                 | $0.0017$        | $0.0060$    | $-0.0023$             | $0.0060$    |
| Tenure squared         | $0.0001$        | $0.0002$    | $0.0001$              | $0.0002$    |
| **Number of workers within the firm (reference: size, 1–10)** |                 |             |                       |             |
| Size, 11–19            | $0.1650$ ***    | $0.0586$    | $0.0433$              | $0.0590$    |
| Size, 20–49            | $0.1934$ ***    | $0.0512$    | $0.1530$ ***          | $0.0515$    |
| Size, 50–249           | $0.2580$ ***    | $0.0514$    | $0.2006$ ***          | $0.0517$    |
| Size, 250 or more      | $0.3803$ ***    | $0.0531$    | $0.2981$ ***          | $0.0529$    |
| **Job category (reference: managers)** |                 |             |                       |             |
| Scientists and intellectuals | $0.0409$  | $0.1161$    | $0.0039$              | $0.1148$    |
| Technicians            | $-0.1363$       | $0.1104$    | $-0.1122$             | $0.1096$    |
| Administrative support | $-0.1425$       | $0.1209$    | $-0.1418$             | $0.1208$    |
| Clerk                  | $-0.1112$       | $0.1174$    | $-0.0818$             | $0.1167$    |
| Senior/high-level official | $-0.2808$| $0.1999$    | $-0.2104$             | $0.2039$    |
| Mid-level official     | $-0.1389$       | $0.1201$    | $-0.1005$             | $0.1196$    |
| Low-skilled officials  | $-0.0483$       | $0.1314$    | $-0.0564$             | $0.1320$    |
| Unskilled worker       | $-0.3066$ **    | $0.1341$    | $-0.2887$ **          | $0.1346$    |
| **Female concentration** | $-0.0316$  | $0.1121$    | $0.0026$              | $0.1135$    |
| **Sector (reference: rest of services)** |                 |             |                       |             |
| Agriculture            | $-0.3300$ **    | $0.1339$    | $-0.3351$ **          | $0.1405$    |
| Industry               | $-0.1618$ ***   | $0.0581$    | $-0.0553$             | $0.0583$    |
| Construction           | $0.1434$ *      | $0.0786$    | $0.1939$ **           | $0.0789$    |

(Continued)
Table 5 Continued

|                  | Overall training | Work-related training |
|------------------|------------------|----------------------|
|                  | Coefficient      | Std. Err.            | Coefficient      | Std. Err.            |
| Commerce         | −0.1404 **       | 0.0596               | −0.0540          | 0.0599               |
| Transportation   | −0.1014          | 0.0857               | −0.0118          | 0.0879               |
| Catering         | −0.1614 *        | 0.0840               | −0.0942          | 0.0853               |
| Public administration | 0.0825    | 0.0631               | 0.0400           | 0.0634               |
| Education        | 0.1531 **        | 0.0718               | 0.1695 **        | 0.0695               |
| **Type of contract** |                |                      |                    |                      |
| Temporary contract | 0.0962        | 0.0502               | 0.1172 **        | 0.0499               |
| Part-time job    | −0.0764          | 0.0535               | −0.0697          | 0.0536               |
| **Difficulties** |                |                      |                    |                      |
| Family responsibilities | −0.0503  | 0.0383               | 0.0018           | 0.0382               |
| Age or health problems | −0.2418  | 0.1333               | −0.3186 **       | 0.1422               |
| **Concerns**     |                |                      |                    |                      |
| Languages        | 0.2025 ***       | 0.0390               | 0.1583 ***       | 0.0393               |
| Self-learning    | 0.1602 ***       | 0.0452               | 0.1508 ***       | 0.0446               |
| Seeking information | 0.4689       | 0.0406               | 0.3991 ***       | 0.0402               |
| for courses      |                |                      |                    |                      |
| Regional variables | yes           |                      | yes              |                      |
| Constant         | −0.6153 **       | 0.1740               | −0.6661 ***      | 0.1742               |
| Number of obs.   | 7,741            | 7,741                 |                    |                      |
| Pseudo $R^2$     | 0.11             | 0.08                  |                    |                      |
| Goodness of fit (Ho: Model correctly specified) $p$-value | 0.61 | 0.06 |  

Notes: ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

for work-related training; in particular, women have a lower probability of participation in this type of training. With respect to other personal characteristics, age has a negative impact on the probability of participation in overall and work-related training. However, having children appear to have no influence, and no significant effect is detected by interacting being a woman and having children. As expected, we find a positive association between acquired formal education and subsequent training. Spain is a country with a very general education prior to labor market entry, which makes training and education highly complementary. With respect to job-related characteristics, differences in training incidence are also evident across economic sectors. The size of the firm affects the probability of receiving overall and work-related training, and temporary employees have a higher probability of taking part in work-related training. With respect
to barriers to training, having family responsibilities appears to have no impact on training participation. Age- or health-related difficulties do affect negatively the probability of training participation. Finally, as expected, learning concerns such as language skills, self-learning, and actively seeking courses positively affects the probability of taking overall and work-related training.

Focusing only on work-related training, Table 6 presents simple logit regressions for each of the three training modes: firm-financed, public-financed, and self-financed training. It should be noted that there could be a sample selection that biases the probability of participating in each type of training, arising from the fact that certain factors affecting the probability of participation in work-related training, and those affecting the probability of participation in each type of course, could be linked. This possibility of selection bias has been controlled for and proved to be nonsignificant. The most important result is that women are less likely to participate in firm-financed courses than men, while this gender gap does not emerge in public- and self-financed training. We also find two expected results. First, the larger the company, the greater the probability of taking part in firm-financed training and the lower the probability of getting public-financed training. Rita Asplund (2005) explains that smaller firms could be more concerned about trained employees being hired away by competitors and could also be more financially constrained. Moreover, large firms pay higher wages and, hence, have lower employee turnover (Harry J. Holzer and Jess Reaser 1999; Edwin Leuven and Hessel Oosterbeek 1999). Second, Spain belongs to a dualist employment regime, as seen in the lower incidence of firm-financed training among temporary and part-time employees. At the same time, these employees participate more in public-financed training, which may be the result of efforts by the national employment service to attain a more equitable training distribution. Sectors do not affect the probability of taking a self-financed course but do affect firm- and public-financed courses. Finally, with respect to difficulties in access to training, it should be noted that family responsibilities positively affect the probability of taking part in self-financed training; it is probable that workers decide to pay for their own training if they are able to find a better work–family–training balance, relative to other training categories that could have less flexible schedules.

Women appear to be disadvantaged in receiving firm-financed training. If women are seeking employer benefits (better wages, better career prospects, improved job security), then the lower incidence of firm-financed training among women, when external factors are controlled for, can be characterized as discrimination. If women have other reasons to take up training, then those goals per se could explain women’s low rates of participation in firm-financed training. We go one step further in our
Table 6 Determinants of participation in firm-, public- and self-financed training

| Personal characteristics | Firm-financed training | Coefficient | Std. Err. | Public-financed training | Coefficient | Std. Err. | Private-financed training | Coefficient | Std. Err. |
|--------------------------|------------------------|-------------|-----------|--------------------------|-------------|-----------|---------------------------|-------------|-----------|
| Woman                    | −0.2213 *              | 0.1165      | 0.0730    | 0.1302                   | 0.1917      | 0.1258    |
| Age                      | 0.0091 *               | 0.0054      | 0.0082    | 0.0058                   | −0.0183 *** | 0.0060    |
| Partner                  | 0.1413                 | 0.0951      | −0.1107   | 0.1082                   | −0.0960     | 0.1036    |
| Has children under age 25| 0.2732 **              | 0.1181      | −0.1391   | 0.1348                   | −0.2744 **  | 0.1327    |
| Woman with children      | −0.0065                | 0.1582      | 0.1220    | 0.1789                   | −0.0364     | 0.1747    |
| Spanish citizenship      | 0.0434                 | 0.1526      | 0.1304    | 0.1653                   | −0.1075     | 0.1577    |
| Skills (reference: no education) |                |            |           |                          |             |           |
| Basic skills             | −0.1838                | 0.1295      | −0.0431   | 0.1438                   | 0.2791      | * 0.1460  |
| Medium skills            | −0.2950 *              | 0.1593      | −0.1934   | 0.1834                   | 0.5136 ***  | 0.1777    |
| High skills              | −0.2086                | 0.1432      | −0.1609   | 0.1598                   | 0.3799 **   | 0.1614    |
| Job and firm characteristics |                        |            |           |                          |             |           |
| Tenure                   | 0.0094                 | 0.0157      | 0.0188    | 0.0166                   | −0.0274     | 0.0180    |
| Tenure squared           | −0.0001                | 0.0004      | −0.0006   | 0.0005                   | 0.0007      | 0.0005    |
| Number of workers within the firm (reference: size, 1–10) | | |
| Size, 11–19              | −0.0045                | 0.1449      | −0.2581   | 0.1611                   | 0.2505      | 0.1557    |
| Size, 20–49              | 0.1875                 | 0.1254      | −0.2049   | 0.1352                   | −0.0276     | 0.1374    |
| Size, 50–249             | 0.3567 ***             | 0.1255      | −0.3155 **| 0.1379                   | −0.1323     | 0.1401    |
| Size, 250 or more        | 0.2302 *               | 0.1260      | −0.3404 **| 0.1398                   | 0.0352      | 0.1367    |
| Job category (reference: managers) | | |
| Scientists and intellectuals | −0.4255 *          | 0.2288      | 0.1627    | 0.2635                   | 0.4518      | * 0.2740  |
| Technicians              | −0.0136                | 0.2259      | −0.2310   | 0.2622                   | 0.2214      | 0.2728    |
| Administrative support   | −0.4233 *              | 0.2558      | 0.0332    | 0.2975                   | 0.5234      | * 0.3093  |
| Clerk                    | −0.2818                | 0.2529      | −0.0419   | 0.2914                   | 0.4983      | * 0.2957  |
| Senior/high-level official| −0.4628                | 0.5409      | 0.3263    | 0.5495                   | 0.3508      | 0.5671    |
| Mid-level official       | −0.0906                | 0.2652      | 0.0642    | 0.3080                   | 0.0892      | 0.3143    |

(Continued).
### Table 6 Continued

|                        | Firm-financed training | Public-financed training | Private-financed training |
|------------------------|------------------------|--------------------------|---------------------------|
|                        | Coefficient | Std. Err. | Coefficient | Std. Err. | Coefficient | Std. Err. |
| Low-skilled officials  | −0.4080    | 0.2935    | 0.3010      | 0.3419    | 0.3370      | 0.3467    |
| Unskilled worker       | −0.5551 * | 0.2904     | 0.2217  | 0.3299    | 0.4980      | 0.3470    |
| Female concentration   | 0.2254     | 0.2559    | −0.0830    | 0.2942    | −0.1868     | 0.2947    |
| Sector (reference: rest of services) |          |            |            |            |            |            |
| Agriculture            | 0.3779     | 0.4910    | −0.3174    | 0.5370    | −0.1153     | 0.4116    |
| Industry               | 0.1538     | 0.1392    | −0.3981 ** | 0.1711    | 0.1085      | 0.1520    |
| Construction           | 0.3667 *   | 0.2071    | −0.2465    | 0.2324    | −0.2910     | 0.2482    |
| Commerce               | 0.1537     | 0.1427    | −0.2491    | 0.1686    | −0.0084     | 0.1530    |
| Transportation         | 0.1145     | 0.2108    | −0.7742 ** | 0.2992    | 0.2678      | 0.2169    |
| Catering               | 0.0754     | 0.1952    | −0.3146 ** | 0.2174    | 0.1279      | 0.2071    |
| Public administration   | −0.0907    | 0.1424    | 0.1831     | 0.1596    | −0.0642     | 0.1669    |
| Education              | −0.2866 *  | 0.1422    | 0.3629 **  | 0.1489    | −0.0134     | 0.1484    |
| Type of contract       |            |            |            |            |            |            |
| Temporary contract     | −0.4540 ***| 0.1133    | 0.3963 *** | 0.1230    | 0.1793      | 0.1174    |
| Part-time job          | −0.5902 ***| 0.1261    | 0.4682 *** | 0.1399    | 0.2011      | 0.1312    |
| Difficulties           | −0.1042    | 0.0870    | −0.0493    | 0.0990    | 0.1841 *    | 0.0980    |
| Family responsibilities |            |            |            |            |            |            |
| Age or health problems | 0.5405     | 0.3944    | −1.6293 ** | 0.5524    | 0.3089      | 0.3867    |
| Regional variables     | yes        | yes       | yes        |            |            |            |
| Cons                   | −0.2463    | 0.3955    | −0.7890 *  | 0.4327    | −0.4934     | 0.4609    |
| Number of obs.         | 1,469      | 1,472     | 1,472      |            |            |            |
| Pseudo $R^2$           | 0.15       | 0.12      | 0.11       |            |            |            |
| Goodness of fit (Ho: Model correctly specified) | 0.359 | 0.152 | 0.66 |

*Note:* ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

Analysis in attempting to detect gender differences in the initial motivation to take up training. We distinguish two categories: (1) motivations directly related to the current job, such as improving job performance or career prospects within the firm, and increasing job security; and (2) motivations focused on a career change, such as improving the chances of finding a better job or gaining the knowledge to establish an own business.
### Table 7: Determinants of employee motivations to train

|                           | Related to present job | Career change |
|---------------------------|------------------------|---------------|
|                           | Coefficient            | Coefficient   |

**Personal characteristics**

| Characteristic            | Coefficient | Coefficient |
|---------------------------|-------------|-------------|
| Woman                     | 0.0763      | 0.1843      |
| Age                       | 0.0035      | −0.0116     |
| Partner                   | −0.0639     | −0.1479     |
| Children under age 25     | −0.0544     | −0.1905     |
| Woman with children       | 0.3972      | −0.2838     |
| Spanish citizenship       | 0.1213      | −0.1205     |

**Skills (reference: high skills)**

| Skill                        | Coefficient | Coefficient |
|------------------------------|-------------|-------------|
| Medium skills                | 0.0750      | −0.1077     |
| Basic skills                 | 0.0328      | −0.2036     |
| No education                 | −1.4855 *** | −0.8583     |

**Job and firm characteristics**

| Characteristic              | Coefficient | Coefficient |
|-----------------------------|-------------|-------------|
| Tenure                      | 0.0226 **   | −0.0481 *** |

**Number of workers within the firm (reference: size, 1–10)**

| Size                        | Coefficient | Coefficient |
|-----------------------------|-------------|-------------|
| Size, 11–19                 | −0.1467     | −0.0243     |
| Size, 20–49                 | −0.1059     | −0.3081 *   |
| Size, 50–249                | 0.0808      | −0.5962 *** |
| Size, 250 or more           | −0.1769     | −0.2189     |

**Job category (reference: managers)**

| Category                    | Coefficient | Coefficient |
|------------------------------|-------------|-------------|
| Scientists and intellectuals | 1.2562 ***  | −0.2999     |
| Technicians                  | 0.5445      | −0.0872     |
| Administrative support       | 0.3636      | 0.1885      |
| Clerk                        | 0.1578      | 0.0786      |
| Senior/high-level official   | 0.2367      | −0.2540     |
| Mid-level official           | 0.0417      | −0.0267     |
| Low-skilled officials        | −0.1822     | 0.2302      |
| Unskilled worker             | −0.2643     | 0.4292      |
| Female concentration         | 0.0503      | −0.6402 *   |

**Sector (reference: agriculture)**

| Sector                      | Coefficient | Coefficient |
|------------------------------|-------------|-------------|
| Industry                     | −1.3259     | −0.3929     |
| Construction                 | −1.7612 **  | −0.7112     |
| Service                      | −1.2387 *   | −0.1661     |

**Professional situation**

| Situation                   | Coefficient | Coefficient |
|------------------------------|-------------|-------------|
| Temporary employee           | −0.0947     | 0.6263 ***  |
| Part-time job                | −0.4258 **  | 0.1747      |

(Continued).
Table 7 shows that women’s motivations to train are similar to those of men, and thus it appears that the lower rates of participation in firm-financed training among Spanish women employees are due to employer discrimination.

We have seen that men and women appear to have the same preferences toward work-related courses; we now analyze the effect of the source of financing, and whether men and women perceive similar or different returns/benefits from those courses. Our purpose is to determine the existence of possible double discrimination, in terms of access and in terms of benefits, when women take up firm-financed training. We consider two types of training return for the same sample of courses: the first are returns from the present employer – for example, promotion at the firm, higher wages, and so on (see Table 4). The second are those returns that are external, not directly linked to the actual employer – for instance, getting a new job, doing new tasks, updated knowledge on a subject of interest, and meeting new people (or other personal reasons). Table 8 shows that the gender variable has no effect on training returns from either source. In other words, Spanish women employees do not suffer from double discrimination, but we do find, as expected, a positive relationship between obtaining employer-based returns and taking up firm-financed training. Thus, since firm-financed training provides significantly higher employer returns, the existence of discrimination against women in access
to firm-financed training is sufficient to put Spanish women employees at a disadvantage in terms of their returns (promotion, salaries, and so on).

**CONCLUSIONS**

This paper set out to answer three questions related to gender differentials in continuous training for Spanish employees, using survey data that include detailed information about their training activities. The first question is whether there are any gender differences exist in the probability of participation in continuous training. Our results indicate that probabilities of overall training participation are the same for men and women, but the probability of participation in work-related training is higher for men.

This brings us to our second question, whether there are differences in the probability of taking part in training that depend on the source of the funding. We find that firm-financed training is positively biased toward men, but no gender gap is detected for public- and self-financed training. It could be that gender differences in participation in different types of training are due to different preferences or motivations to train between men and women. If women share the same motivations as men, then the source of a lower participation rate in firm-financed training among women, when we control for external factors – such as firm or job characteristics and adverse family circumstances – would likely be employer discrimination. If women are seeking different benefits from training, this different goal would itself explain women’s lower participation rate in firm-financed training. However, since we find no such difference, our empirical analysis supports the existence of employer discrimination.

This brings us to our third question, addressing gender differences in returns from training; and our results show that training returns are the same for men and women. Nevertheless, we do confirm a positive relationship between participation in firm-financed training and obtaining returns from the employer. Put another way, taking part in firm-financed training increases the probability of getting a wage increase, a promotion, or improved on-the-job performance. Thus, the existence of discrimination against women in the access to firm-financed training is sufficient to leave Spanish women employees at a disadvantage, even though they do not suffer a double discrimination in the returns obtained from their employers when they do participate in firm-financed training.

Not only women, but also temporary and part-time employees experience barriers to access to firm-financed training in Spain, as would be expected in a dualist employment regime. Interestingly, this work can be seen as supporting a role for the state by compensating for this disadvantage through public training supply in the case of temporary and part-time jobs. On the contrary, despite legislation in Spain that specifically identifies women as a priority group, and in a context of consensus on continuous
Table 8 Determinants of training benefits

| Provided by the employer | All other returns |
|--------------------------|-------------------|
|                          | Coefficient | Odd ratio | Coefficient | Odd ratio |
| **Financed by (reference private)** |          |          |              |          |
| Firm                     | 0.9381  ***  | 2.5550   | –0.8658  ***  | 0.4207   |
| Public                   | 0.6505  ***  | 1.9165   | –0.2517     | 0.7775   |
| **Personal characteristics** |          |          |              |          |
| Woman                    | –0.0882   | 0.9155   | 0.0226      | 1.0228   |
| Age                      | 0.0039    | 1.0039   | 0.0076      | 1.0076   |
| Partner                  | 0.0043    | 1.0043   | –0.0302     | 0.9702   |
| Children under age 25    | –0.2457   | 0.7822   | –0.1946     | 0.8232   |
| Woman with children      | 0.0238    | 1.0241   | 0.3016      | 1.3521   |
| Spanish citizenship      | –0.4177   | 0.6586   | 0.3253      | 1.3844   |
| **Skills (reference: high skills)** |          |          |              |          |
| Medium skills            | 0.2184    | 1.2440   | 0.0957      | 1.1004   |
| Basic skills             | 0.1580    | 1.1712   | 0.2739      | 1.3150   |
| No education             | 2.6376    | 13.9799  | –0.8325     | 0.4350   |
| **Job and firm characteristics** |          |          |              |          |
| Tenure                   | –0.0029   | 0.9971   | 0.0024      | 1.0024   |
| **Number of workers within the firm (reference: size, 1–10)** |          |          |              |          |
| Size, 11–19              | –0.0356   | 0.9650   | –0.3035     | 0.7382   |
| Size, 20–49              | 0.4431  ** | 1.5576   | –0.4438  ** | 0.6416   |
| Size, 50–249             | 0.2226    | 1.2494   | –0.2228     | 0.8002   |
| Size, 250 or more        | 0.2884    | 1.3343   | –0.3774  ** | 0.6856   |
| **Job category (reference: managers)** |          |          |              |          |
| Scientists and intellectuals | –0.6000 | 0.5488   | 0.0675      | 1.0698   |
| Technicians              | –0.7456  * | 0.4745   | –0.1175     | 0.8892   |
| Administrative support   | –0.6867   | 0.5032   | 0.1045      | 1.1101   |
| Clerk                    | –0.8479  ** | 0.4283   | –0.1371     | 0.8719   |
| Senior/high-level official | –0.7669 | 0.4645   | 0.1905      | 1.2098   |
| Mid-level official       | –0.8412  * | 0.4312   | –0.3652     | 0.6941   |
| Low-skilled officials    | –0.4548   | 0.6346   | –0.6712     * | 0.5111   |
| Unskilled worker         | –1.2724  *** | 0.2802   | –0.0253     | 0.9750   |

(Continued)
training between the social partners and the government, it seems to us that the lower participation of women in firm-financed training is not offset with greater access to public training. In our opinion, the Spanish authorities should make a greater effort to design and implement gender-equality and training policies jointly. Implementing gender-equality proposals separately from training measures oriented to women makes for poor coordination of goals.

More work is needed to identify the underlying factors behind gender discrimination in access to firm-financed training. For instance, an analysis should be carried out of whether conscious or unconscious employer prejudices are at the root of this discrimination. If future empirical evidence supports the existence of discrimination linked to workplace culture, diversity training could be a good first step in addressing employer’s gender prejudices (Regine Bend, Alexander Fleischmann, and

| Provided by the employer | All other returns |
|-------------------------|------------------|
| **Coefficient**         | **Odd ratio**    |
| **Coefficient**         | **Odd ratio**    |

| Female | 0.3137 | 1.3685 | -0.4689 | 0.6257 |
| concentration | | | | |
| Sector (reference: agriculture) | | | | |
| Industry | 1.3130 ** | 3.7172 | 0.5753 | 1.7777 |
| Construction | 1.3659 ** | 3.9193 | 0.3874 | 1.4732 |
| Service | 1.3679 ** | 3.9273 | 0.6224 | 1.8634 |
| Professional situation | | | | |
| Temporary employee | 0.0422 | 1.0431 | 0.4547 *** | 1.5757 |
| Part-time job | -0.2525 | 0.7768 | 0.1624 | 1.1763 |
| Concerns | | | | |
| Languages | 0.2422 * | 1.2740 | 0.5906 *** | 1.8050 |
| Self-learning | 0.3818 *** | 1.4649 | 0.4465 *** | 1.5628 |
| Seeking information for courses | 0.1160 | 1.1230 | 0.2705 ** | 1.3106 |
| Regional variables | yes | yes | yes | yes |
| Constant | -0.6398 | 0.5274 | 0.3232 | 1.3815 |
| Number of obs. | 1,803 | 1,924 |
| Pseudo $R^2$ | 0.06 | 0.09 |
| Goodness of fit | F(9.1546) | F(9.1648) |
| $F$-adjusted test | 0.546 | 0.719 |
| statistic $p$-value | | | |

Note: *** , ** , * denote statistical significance at the 1, 5, and 10 percent levels, respectively.
Roswitha Hofmann (2009). Diversity training programs increase awareness of management biases, combat stereotypes, and promote inclusiveness, encouraging managers to develop diagnostic skills and change the processes and structures that lead to gender bias in organizations. This concern is on our future research agenda.

Rosa Aisa  
Faculty of Economics and Business - Economic Analysis, University of Zaragoza  
Gran via 2, 50005 Zaragoza, Spain  
e-mail: raisa@unizar.es

María A. Gonzalez-Alvarez  
Economic Strategies and Initiatives, SL  
Arzobispo Morcillo 21, 2° C 50006, Zaragoza, Spain  
e-mail: mara.gonzalez@esisl.com

Gemma Larramona  
Faculty of Economics and Business - Economic Analysis, University of Zaragoza  
Gran via 2, 50005 Zaragoza, Spain  
e-mail: gemmalar@unizar.es

NOTES ON CONTRIBUTORS

Rosa Aisa is Professor in the Department of Economic Analysis of the Faculty of Economics at the University of Zaragoza, Spain. Her research focuses on issues related to longevity, and her contributions have been published in leading academic journals. As a member of a spin-off from the University of Zaragoza, ESI (Economic Strategies and Initiatives), she has participated in numerous employment studies that have also been published in high-quality academic journals. Following her recent induction to the women’s scientific researchers’ association (AMIT), her topics of interest also include feminist economic perspectives. More details can be found at https://sites.google.com/site/rosaaisafecem/home/more-research.

María A. Gonzalez-Alvarez is Project Manager of Economic Strategies and Initiatives. She also teaches economics at the University of Zaragoza. Her work has appeared in Economic Development and Cultural Change, North American Journal of Economics and Finance, and Tourism Economics. Her research centers on the social impacts of labor market policies, gender and employment, work–life balance, and work organization. As an economics and development specialist, she works on poverty reduction, off-farm work, household economics, and capacity building. As a consultant, she has participated in research projects at the World Bank and development projects financed by the European Community.
Gemma Larramona is Associate Professor in the Department of Economic Analysis of the University of Zaragoza, where she teaches microeconomics and labor market economics. In 2008, she obtained a competitive scholarship from the Fulbright Commission of Belgium to develop a project at the University of Pennsylvania on the movement of workers between countries. Her research centers on flows in the labor market, and she has participated in several international conferences on this topic. Her publications appear in journals such as *Journal of Economic Dynamics and Control, Economics Modeling,* and *International Migration,* as well as in various books published by Edward Elgar.

**NOTES**

1. General training increases individual productivity in a range of employment opportunities, while specific training does not help the worker’s mobility to other firms.
2. 1 indicates total gender inequality, and 100 indicates full equality.
3. Daron Acemoglu and Jörn-Steffen Pischke (1998) also establish that the current employer’s superior knowledge of its own employee’s abilities creates ex-post monopsony power, which enhances firm-financed training, even if the training is general.
4. Compulsory training is not considered in this model.
5. A detailed description of the methodology is available at [http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft13/p459&file=inebase&L=1](http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft13/p459&file=inebase&L=1).
6. Since the units selected for inclusion are chosen using probabilistic methods, simple random sampling allows us to make generalizations (for example, statistical inferences) because each course has the same probability of being chosen. Moreover, the percentage of those who take more than one course is small, around 16 percent of the sample, and similar for men and women.
7. Comparing both samples, those who answered the questions about financial support and those who did not, we found no significant differences regarding gender and other personal characteristics. In any case, one possible explanation of the fall in the number of responses may be that respondents do not know who is financing the course, if it is a public institution or the firm. Therefore, our estimations may be affected by a selection bias problem, and our results should be interpreted with caution.
8. Available data provide information about individual perceptions of these returns.
9. We have used Linktest, implemented by Stata, as a goodness-of-fit test in order to detect a specification error. The test was not significant at the 5 percent level in all estimated models – that is, the models are reasonably well-specified.
10. Note that a significant female dummy coefficient indicates a gender gap in training if a mean return for both genders in all explanatory variables is assumed.
11. This result holds when we consider each return of Table 4 separately as the dependent variable.

**REFERENCES**

Acemoglu, Daron and Jörn-Steffen Pischke. 1998. “Why Do Firms Train? Theory and Evidence.” *Quarterly Journal of Economics* 113(1): 79–119.
Arulampalam, Wiji, Alison L. Booth, and Mark L. Bryan. 2004. “Training in Europe.” Journal of the European Economic Association 2(2-3): 346–60.

Asplund, Rita. 2005. “The Provision and Effects of Company Training: A Brief Review of the Literature.” Nordic Journal of Political Economy 31: 47–73.

Backes-Gellner, Uschi, Yvonne Oswald, and Simone N. Tuor. 2011. “Part-Time Work and Employer Provided Training: Boon to Women and Bane to Men?” Economics of Education Working Paper Series 0058, University of Zurich, Institute for Strategy and Business Economics.

Bassanini, Andrea, Alison L. Booth, Giorgio Brunello, Maria De Paola, and Edwin Leuven. 2007. “Workplace Training in Europe.” In Education and Training in Europe, edited by Giorgio Brunello, Pietro Garibaldi, and Etienne Wasmer, 8–13. Oxford: Oxford University Press.

Bend, Regine, Alexander Fleischmann, and Roswitha Hofmann. 2009. “Queer Theory and Diversity Management: Reading Codes of Conduct from a Queer Perspective.” Journal of Management and Organization 15(5): 625–38.

Booth, Alison L. and Mark L. Bryan. 2007. “Who Pays for General Training in Private Sector Britain?” Research in Labor Economics 26: 83–121.

Brunello, Giorgo. 2001. “On the Complementarity between Education and Training in Europe.” IZA Discussion Papers 309, Institute for the Study of Labor.

Brunello, Giorgo and María De Paola. 2009. “Is There Under-Provision of Training?” Empirical Research in Vocational Education and Training 6(1): 1–18.

Correll, Shelley J., Stephen Benard, and In Paik. 2007. “Getting a Job: Is There a Motherhood Penalty?” American Journal of Sociology 112(5): 1297–338.

Dieckhoff, Martina, Jean-Marie Jungblut, and Philip O’Connell. 2007. “Job-Related Training in Europe: Do Institutions Matter?” In Employment Regimes and the Quality of Work, edited by Duncan Gallie, 77–104. Oxford: Oxford University Press.

Dieckhoff, Martina and Nadia Steiber. 2011. “A Re-assessment of Common Theoretical Approaches to Explain Gender Differences in Continuing Training Participation.” British Journal of Industrial Relations 49(1): s135–57.

England, Paula. 2005. “Gender Inequality in Labor Markets: The Role of Motherhood and Segregation.” Social Politics 12(2): 264–88.

Estébez-Abe, Margarita. 2005. “Gender Bias in Skills and Social Policies: The Varieties of Capitalism Perspective on Sex Segregation.” Social Politics 12(2): 180–215.

Evertsson, Marie. 2004. “Formal On-the-Job Training: A Gender-Typed Experience and Wage-Related Advantage?” European Sociological Review 20(1): 79–93.

Fitzenberger, Bernd and Grit Muehler. 2011. “Dips and Floors in Workplace Training, Using Personnel Records to Estimate Gender Differences.” ZEW Discussion Papers 11–023.

Gallie, Duncan. 2007. Employment Regimes and the Quality of Work. Oxford: Oxford University Press.

Goux, Dominique and Eric Maurin. 2000. “Returns to Firm-Provided Training: Evidence from French Worker–Firm Matched Data.” Labour Economics 7(1): 1–19.

Hall, Peter A. and David Soskice, eds. 2001. Varieties of Capitalism: The Institutional Foundations of Comparative Advantage. Oxford: Oxford University Press.

Hancék, Bob, Martin Rhodes, and Mark Thatcher, eds. 2007. Beyond Varieties of Capitalism: Conflict, Contradictions, and Complementarities in the European Economy. Oxford: Oxford University Press.

Havet, Nathalie and Catherine Sofer. 2008. “Why Do Women’s Wages Increase So Slowly Throughout Their Career? A Dynamic Model of Statistical Discrimination.” Labour 22(2): 291–314.
ARTICLE

Holzer, Harry J. and Jess Reaser. 1999. “Firm-Level Training for Newly Hired Workers: Its Determinants and Effects.” Research in Labor Economics 18: 377–402.

Jones, Melanie K., Paul L. Latreille, and Peter J. Sloane. 2008. “Crossing the Tracks? Trends in the Training of Male and Female Workers in Great Britain.” British Journal of Industrial Relations 46(2): 268–82.

Leuven, Edwin and Hessel Oosterbeek. 1999. “The Demand and Supply of Work-Related Training.” Research in Labor Economics 18: 303–30.

Manning, Alan and Joanna Swaffield. 2008. “The Gender Gap in Early-Career Wage Growth.” Economic Journal 118(530): 983–1024.

Melero, Eduardo. 2010. “Training and Promotion: Allocation of Skills or Incentives?” Industrial Relations 49(4): 640–67.

O’Halloran, Patrick Lee. 2008. “Gender Differences in Formal On-the-Job Training: Incidence, Duration, and Intensity.” Labour 22(4): 629–59.

Pfeifer, Harald U. 2008. “Train to Gain: The Benefits of Employee-financed Training in Germany.” Leading House Working Paper 37.

Peraita, Carlos. 2005. “Firm-Sponsored Training in Regulated Labour Markets: Evidence from Spain.” Applied Economics 37(16): 1885–98.

Scott, Jacqueline. 2010. “Quantitative Methods and Gender Inequalities.” International Journal of Social Research Methodology 13(3): 223–36.

Simpson, Patricia A., and Linda K. Stroh. 2002. “Revisiting Gender Variation in Training.” Feminist Economics 8(3): 21–53.

Tabvuma, Vurain, Yannis Georgellis, and Thomas Lange. 2015. “Orientation Training and Job Satisfaction: A Sector and Gender Analysis.” Human Resource Management 54(2): 303–21.

Tahlin, Michael. 2007. “Skills and Wages in European Labour Markets: Structure and Change.” In Employment Regimes and the Quality of Work, edited by Duncan Gallie, 35–76. Oxford: Oxford University Press.

Tomaskovic-Devey, Donald and Sheryl Skaggs. 2002. “Gender Segregation, Labor Process Organization and Gender Earnings Inequality.” American Journal of Sociology 108: 102–28.

Walby, Sylvia. 2004. “The European Union and Gender Equality: Emergent Varieties of Gender Regime.” Social Politics 11(1): 4–29.

Wooden, Mark and Audrey VandenHeuvel. 1997. “Gender Discrimination in Training: A Note.” British Journal of Industrial Relations 35(4): 627–33.