Job satisfaction and disability

Miguel Ángel Malo (University of Salamanca, Spain) malo@usal.es

Ricardo Pagán (University of Malaga, Spain) * rpr@uma.es

Abstract:

This article focuses on the analysis of the reported differentials of job satisfaction for disabled and non-disabled individuals. We use the Spanish data of the European Community Household Panel during the period 1995-2001. We estimate a job satisfaction equation for each group using the Heckman selection model. Job satisfaction differentials are evaluated using the Oaxaca-Blinder methodology. The results show that non-disabled individuals are more likely to be less satisfied in their jobs than disabled ones. Differences in characteristics increase the observed job satisfaction differential (59%), but differences in returns reduce it (-97%) and the selection term increases differences in 138%.

Keywords: Job satisfaction, disability, Spain.
JEL classification: J28, I10.

* For correspondence: Ricardo Pagán. Departamento de Economía Aplicada (Estructura Económica), University of Malaga, Plaza de El Ejido s/n, 29.071 Malaga (Spain). Telephone: +34 952 131186. Fax: +34 952 132075. E-mail: rpr@uma.es

1. Introduction

Traditionally, the literature about work and disability was closely related to participation and/or the incentives to leave labour force using disability pensions. On the other hand, labour market policy interventions were closely associated to promote labour market participation of people with disabilities. However, very few attention (either from academics or politicians) has been devoted to job quality of working disabled (as, for example, Blázquez and Malo, 2005, who analyze the educational mismatch of people with disabilities). Here, we will focus on another aspect related to job quality, as satisfaction. In fact, satisfaction can provide a whole (subjective) valuation of the quality of the job.

The objective of this article consists of analyzing the determinants of the job satisfaction differential between disabled and non-disabled workers. Previous literature has stressed that individuals with disabilities report lower levels of job satisfaction of disabled workers respect to non-disabled workers. This literature is almost exclusively descriptive with very few exceptions (as Uppal, 2005). Are these differentials related to different expectations about working? Are differentials linked to disability or disabled workers are different than non-disabled workers? Consistent answers to these questions can only be provided using micro-data and a survey with enough sample size to estimate different job satisfaction equations for disabled and non-disabled working population. In addition, we decompose job satisfaction differential between both groups of workers using the Oaxaca-Blinder methodology, widely applied to analyze wage differentials.

We use Spanish data from the European Community Household Panel (ECHP) from 1995-2001. We exclude the firs wave (launched in 1994) because of two reasons. First, the disability variable was obtained through a different combination of questions. In

order to have homogeneous data we have preferred to use only those waves where disability questions remained unchanged. Second, the type of contract was not included in the first wave, and, potentially, this variable might be important in job satisfaction equations. Our estimations are based on a pool of these waves of the Spanish ECHP.

The remainder of the paper is as follows. In the second section, we present a review of recent literature concerning job satisfaction and disability. In the third section, we explain the econometric model, the database and the main variables included in our analysis. In the fourth section, we present and discuss our results. Last section summarizes our main results and conclusions.

2. Review of literature

Although the analysis of the job satisfaction of workers has been widely investigated by psychologists and sociologists (e.g. Argyle, 1989; Hodson 1985), the interest of the economists could be considered relatively recent. Following the seminal papers by Hamermesh (1977) and Freeman (1978), there exists an important number of works that have analysed the relationship between the levels of job satisfaction and job quits (McEvoy and Cascio, 1985; Akerlof *et al*. 1988; Clark *et al*. 1988), gender (Clark, 1996 and 1997; Sloane and Williams, 2000), income and wage growth (Clark 1999; Clark and Oswald, 1996; Jones and Sloane, 2003; Diaz-Serrano y Cabral, 2005), trade union (Borjas, 1979; Miller, 1990; Meng, 1990; Bender and Sloane, 1998; Renaud, 2002), establishment size and work environment (Idson, 1990; Gazioglu and Tansel, 2002) and absenteeism and productivity (Mangione and Quinn, 1975; Clegg, 1983), among others.

A positive relationship between job satisfaction and health status has been empirically demonstrated in other studies such as, for example, Clark (1996), Clark and

Oswald (1996) and Kaiser (2002). However, the analysis of the effects of the disability on the levels of job satisfaction and its determinants is very scarce. In this sense, we may mention the works of Burke (1999), McAfee and McNaughton (1997a and 1997b), Renaud (2002) and Uppal (2005). For example, Burke (1999) analyses the relationship of disability status and work experiences and satisfaction for women in Ontario, Canada. The descriptive analysis carried out reveals that working women with disabilities report lower levels of job satisfaction, poor psychological health, higher job insecurity and lower levels of income. However and as the own author points out, his results must be considered with care, because the sample might not be representative of the working women in Ontario. Also, McAfee and McNaughton (1997a y 1997b), using a reduced sample of individuals working in certain occupations for a set of US states, found that the workers with disabilities report moderated levels of overall job satisfaction, strong dissatisfaction with pay and promotions and high satisfaction with co-workers and supervision.

Renaud (2002) investigates the levels of job satisfaction reported by union and non-unions workers in 1989 in Canada. He concludes that the union status is not negatively associated with job satisfaction when we control for the working condition differences between the two sectors. This author includes in the estimated job satisfaction model a dummy variable related to the existence of disability and obtains that the workers with disabilities are less satisfied as compared to the workers without disabilities.

Very recently, Uppal (2005) has analysed the levels of job satisfaction of the disabled individuals and the effects of certain workplace characteristics on them for the year 1991 in Canada. Using data taken from telephone interviews, he estimates an ordered probit model for the whole sample (disabled and non-disabled) and his results show how those individuals with all types of disabilities, except speech, have lower

levels of job satisfaction as compared to those able-bodied. However, when introducing into the model the workplace characteristics the negative effect for individuals with a mobility disability disappears, whereas for the other types of disabilities the magnitude decreases. He concludes that the absence of assistive technology or job accommodations at the workplace may be the cause of the unexplained differences in the levels of job satisfaction between workers with and without disabilities.

Although Burke (1999) analyses the relationship between job satisfaction and disability, his analysis is mainly descriptive and does not include any type of econometric analysis in order to determine those factors explaining the job satisfaction levels of working women with disabilities. With respect to Uppal (2005), there exist certain methodological aspects to bear in mind. Firstly, he estimates a unique (*uncorrected*) job satisfaction model for the whole sample due to the small number of available observations for the disabled sample (only 443), whereas we treat that disabled and non-disabled workers as differentiated groups with different process of participation (*selection*) in the labour market (for this reason we estimate different selection equations for each collective using the Heckman's two step technique in order to correct the sample selection bias in the job satisfaction equations). Secondly, the estimation of the levels of job satisfaction separately for each group (disabled *versus* non-disabled) contributes to compare the estimated coefficients and decompose the job satisfaction differentials into characteristics and returns using the traditional Oaxaca-Blinder's decomposition (1973). Finally, we use more actualized data drawn from a longer period of time (1995-2001) for the Spanish case, which allow us to have a larger number of available observations in our estimation as well as to compare the evolution of the levels of job satisfaction the for each group over that period.

3. Econometric model, data and variables

In order to estimate the determinants of the job satisfaction of non-disabled (N) and disabled individuals (D) we apply, as most of the previous empirical evidence about job satisfaction, the theoretical framework developed by Clark and Oswald (1996), which is based on the definition of the individual's utility from working as follows:

$$U_j = u_j\,(y, h, i, w) \qquad j = \text{N, D} \qquad [1]$$

where y is income, h is hours of work and i and w are a set of variables measuring the individual and job characteristics, respectively. The estimation of this utility function has been habitually carried out through the utilization of ordered probit models due to the categorical nature of the dependent variable, in our case *job satisfaction*, which ranges from 1 (*completely dissatisfied*) to 6 (*completely satisfied*)[1]. Using an ordered probit model we estimate the propensity that a individual i within the group j (non-disabled *versus* disabled) reports a certain level of satisfaction through the following equation (Greene, 1997):

$$L_{ij}^* = b_j' X_{ij} + u_{ij} \quad \textit{and} \quad L_{ij} = 1 \text{ if } L_{ij}^* \leq m_1$$
$$L_{ij} = k \text{ if } m_{k-1} < L_{ij}^* \leq m_k \qquad \text{when } k = 2, 3, 4 \text{ and } 5.$$
$$L_{ij} = 6 \text{ if } m_5 < L_{ij}^* \qquad [2]$$

where L_{ij}^* is a latent variable (unobserved) for each individual i within the group j, L_{ij} is the equivalent observed outcome of L_{ij}^*, X_{ij} is a matrix of explanatory variables of the individual's job satisfaction, b_j is a vector of estimated coefficients and u_{ij} is the error term distributed as a normal (0, 1). The m´s denote ancillary cut points and have to be estimated jointly with b_j.

[1] See, for example, Clark and Oswald (1996), Clark (1997), Gardner and Oswald (2001) and Kaiser (2002).

However, a sample selectivity problem may appear when we estimate job satisfaction equations if the sample is not random. In this case, the estimations will be inconsistent and biased. In our analysis, it is possible to suppose that if dissatisfied disabled individuals can leave the labour market easier than equally dissatisfied non-disabled individuals, the remaining disabled workers will have higher average levels of job satisfaction because the sample is biased. Thus, if dissatisfied disabled individuals are less likely to be in employment than dissatisfied non-disabled individuals, the observed distribution of the job satisfaction will be biased. The underlying assumption is that the potential satisfaction is related to the probability of being an employee (Clark, 1997). To deal with this problem we use the methodology proposed by Heckman (1979) and applied in other studies on job satisfaction as, for example, Clark (1997) and Sanz de Galdeano (2002)[2]. From the estimation of the probability of being working in a paid employment by using a probit model (*selection equation*), we obtain a selection term (*lambda*) for the non-disabled and disabled samples, which will be included as an additional regressor in the corresponding job satisfaction equation. Thus, the job satisfaction equations to be estimated by ordinary least squares (OLS) are the following:

$$L_{ij} = b_j' X_{ij} + c\lambda_{ij} + u_{ij} \qquad (j = \mathrm{N}, \mathrm{D}) \qquad [3]$$

where λ_{ij} is the selection term. The estimates obtained from these corrected job satisfaction equations will be compared to the ordered probit estimates from the job satisfaction equations [2]. Also, we utilize the conventional Oaxaca-Blinder's decomposition method (1973) to decompose the job satisfaction differential between non-disabled and disabled individuals in the following manner:

$$\bar{L}_N - \bar{L}_D = \left(\bar{X}_N - \bar{X}_D\right)\hat{\beta}_N + \bar{X}_D\left(\hat{\beta}_N - \hat{\beta}_D\right) + \left(\hat{c}_N \bar{l}_N - \hat{c}_D \bar{l}_D\right)$$

[2] Traditionally the Heckman's two-step selection model has been widely utilised in the estimation of wage differentials between two groups of comparison (for example, males *versus* females).

[4]

where the left-hand side measures the mean job satisfaction difference between both groups, the first term of the right-hand side represents the part of the difference attributed to differences in observed characteristics (*endowments*), and the second term shows the part of the difference that is due to the differences in the obtained rewards for those characteristics (which is commonly considered as a measure of the *discrimination*). The differences in the selection terms are represented for the third term. Moreover, the endowment and discrimination components have been decomposed into subcomponents in order to estimate the contribution of each explanatory variable to the mean job satisfaction differential between non-disabled and disabled workers.

The data used in this work have been taken from the European Community Household Panel (ECHP) covering the period 1995-2001 for the Spanish case[3]. This annual longitudinal survey designed by EUROSTAT contains not only information at a household level but there exist data on the individuals' characteristics such as gender, marital status, age, educational level, health, and so on and questions related to their labour status, earnings, working hours, firm size, type of contract, occupation, activity sector, etc[4].

The questions about disability are the following:

> *Q158: Do you have any chronic physical or mental health problem, illness or disability? If Yes ➔ Q159*
> *Q159: Are you hampered in your daily activities by this chronic or mental health problem, illness or disability?*
> *-Yes, severely / Yes, to some extend / No*

[3] Although the data for 1994 are also available, we do not include them in this study because the questions we use to identity a disabled person were introduced for first time in 1995 (second wave). Moreover, in 1994 there do not exist data on the worker's type of contract, which is a relevant variable to explain the individuals' job satisfaction levels.

[4] See Peracchi (2002) for a review of the main characteristics of the ECHP and a discussion of the non-response and attrition problems.

Those who answer 'yes' (severely or to some ~~extend~~extent) can be defined as people with disabilities (either mental or physical). Of course, this is a self-evaluation and it does not refer to an 'objective' definition of disability. Nevertheless, it provides a useful approach to measuring the self-perceived disability. The initial filtering question was added in the second wave (1995). In order to avoid any problems related to this change in the questionnaire, we will only use data from 1995.

The ECHP definition of disability is not exactly correspondent with the international definition provided by the World Health Organization (WHO), and, therefore, there is a lack of comparability with international surveys on disability. However, the questions of the ECHP contain the main objective of the WHO definition which relates disability to limitations to daily activities. Therefore, the figures obtained from the ECHP give an approximation of the phenomenon of disability, and though not strictly comparable with other data sources designed to follow the international definitions of disability, ~~but~~ they are closer to them than any sort of administrative data (which usually focuses strictly on disability with respect to work). Finally, although the questionnaire allows us to define two subtypes of disability (severely hampered, and only hampered to some exten~~t~~d), we will use only one category which consists of the aggregation of both subtypes of disability. The main reason is that the subtypes do not correspond to any standard subgroups of the WHO definition of disability. The main effect of this aggregation is that we will have a disabled population with a greater heterogeneity than in other definitions (especially ~~in~~ with respect to the administrative definitions)

The questionnaire of the ECHP provides answers on the individuals' levels of satisfaction regards to some aspects of their lives, among them their levels of job satisfaction. The question we use in this work is the following: *How satisfied are you with your work or main activity*? The respondents can choose among six possible

responses, ranging from "*completely dissatisfied*" (=1) to "*completely satisfied*" (=6). Thus, the job satisfaction level is based on the individual's own evaluation[5]. Apart from this overall job satisfaction question, the individuals are also asked in the same way as before for their level of satisfaction with respect to some characteristics of their jobs such as pay, job security, type of work, hours of work, working time, working conditions and distance from home. We have to consider that the overall job satisfaction measure is not necessarily the mean value of the satisfaction levels obtained for the different aspects of jobs, because it may be capturing some additional aspects of the jobs or reflecting the differences in the weights each worker attaches to any job characteristic (D'Addio *et al.* 2003).

The samples have been obtained pooling cross-section data from the ECHP from 1995 to 2001. It consists of working-age workers (aged 16 to 64) who are wage and salary earners and work at least 15 or more hours a week during the reference week of the interview[6]. The reason for excluding those individuals in a paid employment working less than 15 hours a week from the sample is because we do not have information for this group of workers on some variables that can not be omitted in the following estimation process (for example, firm size, public sector or job responsibility). Thus and after dropping observations with missing values, the final sample size in the non-disabled and disabled individuals' job satisfaction equations is

[5] The use of subjective satisfaction measures has been criticised by many researchers due to the existence of several problems. One of them is related to the assumption of cardinality and ordinality of the answers to satisfaction questions. Psychologists have usually consider these answers as cardinal, namely, the difference in satisfaction between, for example, a 2 and a 3 for any individual is the same as between a 4 and a 5 for any other individual (Schwarz, 1995; Ng, 1997). However, economists assume the ordinality of the answers due to the individuals are somewhat able to recognise and predict the satisfaction levels of others and translate verbal labels, such as "*very good*" and "*very bad*", into roughly the same numerical values (Van Praag, 1991; Ferrer-i-Carbonell and Frijters, 2004). However, Ferrer-i-Carbonell and Frijters (2004) conclude that assuming cardinality or ordinality of the answers to general satisfaction questions has a little effect on the final estimation results. Furthermore, Konow and Early (2002) point out that respondents tend to report higher satisfaction levels that the real ones because they do not want to be presented how unhappy people (this is commonly known as the *social desirability bias*).

[6] Apart from self-employed workers, we exclude from the final sample apprentices and workers with training contracts.

25,235 and 1,063 observations, respectively. Although the problem of non-response in the satisfaction questions is very low in the ECHP, the reduced number of observations available in the estimation of the disabled individuals' job satisfaction equation does not allow different estimations by gender. To try to correct the bias that may arise from initial non-responses, we use the weights provided by the ECHP in order to represent population characteristics as closely as possible.

The explanatory variables included in the job satisfaction equations are those traditionally used in the existing literature (for example, Clark and Oswald, 1996; Clark, 1996 and 1997; Sloane and Williams. 2000; European Commission, 2002; Diaz-Serrano and Cabral, 2005). We include individuals' characteristics as gender, age, marital status, educational level and health status. With regards to the job characteristics, we include in the equations variables such as hourly wages, hours of work, job tenure, occupation, industry, region of residence, private *versus* public sector, job responsibility, type of contract, non-wages subsidies, job matching, overeducation, number of periods previously unemployed in the last five years and year of the interview. Likewise, we include in the job satisfaction equations for non-disabled and disabled individuals the selection term (Heckman's lambda) obtained from the corresponding selection equations. The dependent variable in these selection equations equals to 1 if the individual is a wage earner working at least 15 or more hours a week and 0 otherwise, and we have included, as explanatory variables, gender, age, educational level and marital status of the individual, number of children aged 5 o less and between 6 and 12 years old in the household, net income of other members in the household, region of residence, and year of the interview.

4. Empirical analysis

4.1. Descriptive results

Table 1 shows the mean job satisfaction levels for non-disabled and disabled individuals during the period 1995-2001. Apart from the overall job satisfaction, we include the mean satisfaction levels in each job domain, namely, pay, job security, type of work, hours of work, working time, working conditions and distance from home. Firstly, the mean overall job satisfaction is higher for non-disabled individuals than for disabled ones (4.27 compared to 3.88) and the differential is significant at the 5% level. This overall job satisfaction differential is also found for males and females, registering a significant difference of 0.38 and 0.34 percentage points, respectively. In most of the seven job domain satisfaction measures, the non-disabled individuals report higher satisfaction levels as compared to disabled individuals. According to the t-statistics values, only the satisfaction indicator labelled *"distance from home*" is not significant at the 5% level for the whole sample. For males, "*working time*" and "*distance from home*" satisfaction indicators are statistically the same for non-disabled and disabled individuals at the 5% level, whereas for females this occurs for the satisfaction indicators related to the "*job security*" and "*hours of work*".

[Table 1]

Secondly, to shed further light on the distribution of non-disabled and disabled individuals' job satisfaction levels, table 2 displays the percentage of highly satisfied individuals (those individuals reporting a satisfaction of 5 or 6) for the overall job satisfaction and the seven satisfaction measures concerning their jobs. Overall, the percentages of non-disabled individuals who declare themselves highly satisfied in all the satisfaction measures are greater than those for the disabled individuals. For certain satisfaction measures the differences between these percentages are significantly high, especially for the overall job satisfaction indicator, wherein the differential between non-disabled and disabled individuals for the entire sample is almost 9 percentage

points in favour of the former. In most of the cases the t-statistic for the equality of proportions calculated for each satisfaction measure is significant at the 5% level. Similar results we obtain for the male and female samples. However, for the male sample as compared to the female sample the difference of highly satisfied non-disabled and disabled individuals is not significant at the 5% level for a higher number of satisfaction measures such as "*job security*", "*working time*" and "*distance from home*".

[Table 2]

Figure 1 shows the evolution of the average overall job satisfaction level for non-disabled and disabled individuals over the observed period (1995-2001)[7]. For the whole sample, the overall job satisfaction level for the non-disabled individuals has remained relatively stable during the period and even has slightly increased in 2000 and 2001, whereas for the non-disabled individuals this satisfaction indicator has decreased in a remarkable way. Furthermore, the overall job satisfaction differential in favour of non-disabled individuals has significantly increased over this seven years period, ranging from 0.20 points in 1995 to almost 0.60 points in 2001. For the non-disabled male sample we obtained a similar evolution as before, and for the disabled males the overall job satisfaction level increases slightly from 1997 to 2000 and falls more than 0.20 points in 2001. As for the female sample, the evolution of the job satisfaction for the non-disabled women continues being negative and with two significant peaks in 1997 and 1999. Moreover, the overall job satisfaction differential between non-disabled and disabled workers is greater in the female sample (around 0.10 more points) as compared to the male sample.

[Figure 1]

[7] We have also estimated the evolution of the other seven satisfaction measures, but they are not included in the article (although they are available upon request). In spite of the results depend on the satisfaction measure we use, in general there exists a stronger negative evolution of the satisfaction levels for disabled individuals as compared to those for the non-disabled individuals.

4.2. Estimations

Following the methodology presented in the third section, Table 3 shows the estimation results. Before analysing these results it is interesting to make certain comments about the mean values of the variables used in the estimation process in order to understand the determinants of the levels of overall job satisfaction for non-disabled and disabled individuals. As many other studies have pointed out, the disabled individuals working in a paid employment are older and, therefore, have a higher experience and tenure as compared to non-disabled individuals. One of the most important characteristics of the disabled individuals is their lower educational level. For example, only 14.4% of the disabled individuals have a university educational level, whereas for the non-disabled individuals this percentage reaches 32.5%. With regards to the job characteristics, it is worth remarking that the disabled individuals receive lower hourly wages than non-disabled workers, work in low-skilled occupations, have a lower job responsibility, receive less non-wages subsidies, suffer a poorer job matching, are less overqualified and have spent more time in unemployment in the previous five years than non-disabled individuals.

As we explained in the methodological section, the corrected overall job satisfaction equations [3] have been obtained applying the Heckman's two-step selection model. Table A.1 of the appendix shows the results obtained from the estimation of the selection equation (probability of being in a paid employment and working 15 o more hours a week) for non-disabled and disabled individuals. Most of the estimated coefficients are significant at the 5% level in both equations, although fewer coefficients are statistically significant at conventional levels in the disabled individuals' sample. The estimation results are similar to the empirical evidence provided by previous literature. Males have a higher probability of having a paid employment than females.

This probability also increases with the individual's age, although at a lower rate for the disabled individual sample. The presence of children aged 5 or less in the household decreases the probability of working, especially in the case of the disabled individuals. If the individual is married or cohabits with his/her couple the probability of being a wage or salary earner increases. As we expected, less educated individuals have a lower probability of being wage or salary earners. This probability has a negative relationship with the amount of net income of other family members in the household. There also exist regional differences in the probability of having a paid employment. For both samples the highest probabilities are found in Madrid and East as compared to the reference region (Northwest). The year dummy variables are only significant at the 5% level with respect to the reference year (1995) for the years 1998, 1999, 2000 and 2001 in the non-disabled individual sample. From these probit estimates we calculate the selection term (*lambda*) for each group, which will be included in the corresponding job satisfaction equation.

In general, the estimation results obtained from an ordered probit model and a Heckman's selection model are very similar and most of the estimated coefficients have the same signs in the overall job satisfaction equations (table 3)[8]. This similarity in the results as we use different estimation techniques can be found in other studies and reduces to some extent the econometric problem of selecting among different possible estimation methods. In most of the cases as we comment the estimation results we will focus on those obtained from the Heckman's selection model[9]. The coefficient of the selection term (*lambda*) is negative in both job satisfaction equations but is only significant at the 10% level for the non-disabled workers. This significant coefficient

[8] Although the coefficients of an ordered probit model do not necessarily show the magnitude of the effect of the explanatory variables on the dependent variable, these coefficients and the marginal effects we can calculate have the same sign. In our case a positive coefficient in an ordered probit model means a higher estimated probability the individual is satisfies at work.

[9] The adjusted R^2 's obtained in each job satisfaction are similar to other studies.

suggests that the sample is not random and then the inclusion of the lambda in the job satisfaction equation allows us to estimate consistently the rest of coefficients. The sign of lambda indicates the covariance between the error terms of the selection equation (probability of being a wage or salary earner) and the job satisfaction equation. As a consequence, the observed job satisfaction levels for the non-disabled individuals will be on average lower than those for the whole sample of non-disabled workers, regardless of their labour status.

[Table 3]

As we analyse the explanatory variables measuring the individual characteristics, the results obtained from the Heckman selection model indicate that non-disabled females report higher overall job satisfaction levels than males after introducing into the regressions other control variables. This result is in line with the work of Clark (1997), but only occurs for the non-disabled individual sample. For the disabled individuals' sample the coefficient of the "*female*" variable is not significant at the 5% level. Following Clark (1997), identical males and females with the same jobs and expectations would report identical job satisfaction, but females' expectations are lower than males'. This author argues that lower expectations of females likely result from the poorer position in the labour market that females have held in the past. However, this gender differential disappears for young workers, higher educated workers, professionals and those in male-dominated workplaces because these groups are all likely to have higher expectations about what their jobs should entail[10]. Following these arguments, if there not exists a job satisfaction differential by gender for the disabled

[10] Recently, Bender *et al.* (2005) suggest that much of the satisfaction difference associated with gender segregation in the workplaces results from the exclusion of determinants of satisfaction that measure the flexibility between work and home. These determinants seem to be of greater value for females and when are taken into account the gender composition of the workplace plays no role in determining the females' job satisfaction.

individuals, we should consider that these workers have the same overall job expectations (but lower than non-disabled workers').

For all individuals there exists a well-defined U-shaped relationship between age and job satisfaction. Namely, those individuals in the youngest and oldest age groups are the most satisfied. However, the magnitude of the age effect on the job satisfaction is larger for the disabled individuals. An additional year of age reduces more the job satisfaction in the disabled sample than in the non-disabled one. This U-shaped relationship is also found by Clark *et al.* (1996), Clark (1997), and Gardner and Oswald (2001), among others. For example, Clark *et al.* (1996) point out that younger workers are happier because they have little experience and knowledge about the labour market. When this experience and knowledge increase over the time, they have a better valuation of their jobs. As a result, their job satisfaction levels begin to fall until reaching the minimum in the middle ages. Higher job satisfaction levels for older workers are associated with lower aspirations because they have limited employment choices as they get older. Another possible explanation of this higher job satisfaction level for older workers can be related to a self-selection effect. If dissatisfied older workers leave the labour market with a higher probability, the remaining workers would be the most satisfied.

Being married or cohabiting has a positive effect on the job satisfaction levels, but only for the non-disabled individuals. This finding is very frequent in the literature on job satisfaction (for example, Clark, 1997; European Commission, 2002, 2002; Kraiser, 2002) and is due to that married workers are happier at their works. However, as we employ the Heckman's selection model for the disabled individual sample the coefficient of this dummy variable becomes negative and significant at the 10% level.

Moreover, the percentage of married individuals is higher for disabled than non-disabled workers (0.724 and 0.649%, respectively).

With respect to the educational level of the individual, the estimation results reveal a negative relationship between education and job satisfaction for both samples. Workers with a university educational level are less satisfied with their jobs compared to individuals with lower levels of education. Although this finding may seem surprising, it is well documented in the existing literature (for example, Clark and Oswald, 1996: Clark 1997; Gardner and Oswald, 2001). According to Clark (1997), education brings rewards but also raises expectations, leading to greater disappointment and dissatisfaction. In our estimations, the size of the coefficients on the education dummies for the disabled sample is considerably larger than that for the non-disabled sample. For instance, if the individual attains the highest educational level his/her job satisfaction using the estimates from the Heckman's selection model decreases 0.642 points in the disabled sample (*ceteris paribus)* instead of 0.298 points in the non-disabled sample. Probably, expectations of highly educated disabled workers about their jobs do not fulfil, leading to higher job dissatisfaction levels.

As we expected, the dummy for the health status (=1 if individual has a bad o very bad health) has a significant negative effect on the job satisfaction level for both samples. Healthier workers have higher job satisfaction levels than less healthier workers. The effect of health status on job satisfaction is almost the same in the non-disabled and disabled equations. The reason of including the individual's health status in the disabled individual equation is controlling productivity differences, regardless of the disability status of the individual worker (Lambrinos, 1987; Baldwin and Johnson, 1992 and 1994). Since wages, productivity and job satisfaction are variables that are

strongly correlated we have also included the individual's health status in the disabled individual's job satisfaction equation.

With respect to the job characteristics, the hourly wage (in logarithm) is one of the most important factors determining individuals' overall job satisfaction. Job satisfaction is positively related to hourly wages in both samples. However, the magnitude of the effect of doubling wage is larger for the disabled workers than the disabled ones. This result is relevant because it implies that employers may use the hourly wage as a more effective and powerful tool within the firm in order to increase the level of job satisfaction of their disabled workers. As for the effect of job tenure on the job satisfaction, the estimation results are different as we compare both types of workers. For non-disabled individuals, only the coefficients of the job tenure (and squared job tenure) in the ordered probit model are significant and follow a U-shaped pattern as the age variable. Similar results are obtained by Gardner and Oswald (2001) and European Commission (2002). On the other hand, longer job tenure always increases the job satisfaction of the disabled workers using the two estimation techniques. In addition, the relationship between job tenure and job satisfaction for the disabled workers is linear because the coefficient of squared job tenure is not statistically significant.

According to table 3, those non-disabled individuals working less than 40 hours a week are less satisfied with their jobs. This positive relationship between hours of work and job satisfaction in the non-disabled sample is an unexpected result, which contradicts most of the empirical evidence on job satisfaction. However, other studies as, for example, Leontaridi and Sloane (2001) for the case of British higher paid males, Cabral (2005) for Portugal, and Pouliakas and Theodossious (2003) and Diaz-Serrano and Cabral (2005) for a set of European countries (among them, Spain) have obtained identical results. In contrast, none of the coefficients of the hours of work in the

disabled job satisfaction equation are statistically different from the reference category (40 hours a week), in spite of having a very similar distribution to non-disabled workers. An explanation is that having a job is more valuable for disabled individuals than working hours per week. In many cases, getting a job for certain disabled individuals (for example, individuals with mental or intellectual limitations) becomes a huge personal challenge and wherein the employment is a synonymous of success and a source of higher levels of personal satisfaction. The difficulties and obstacles to get and keep a job are higher for disabled individuals than non-disabled ones[11].

Although there exist occupational, industrial and regional differences in the levels of job satisfaction reported by the individuals, these differences are less evident for the disabled workers. Those non-disabled individuals employed at the top of the occupational scale report the highest job satisfaction levels (i.e. managers, technicians and associate professionals). In contrast, for disabled individuals the job satisfaction differences across the occupational scale are not statistical different form zero at the 5% level, except for the associate professionals who report a higher job satisfaction than the reference category. We have to consider that the percentage of disabled individuals in managerial and professional occupations is very reduced compared to that for the non-disabled workers. For instance, the percentage of disabled workers in the reference group (managers and professionals) is half of the percentage reached for the non-disabled workers (8.8% *versus* 17.2%). On the other hand, most of the disabled individuals work in elementary occupations (26.8%). The inter-industry differences in job satisfaction seem to be more significant for the non-disabled workers. The non-disabled individuals' job satisfaction levels are particularly low in agriculture, forestry

[11] See, for example, Livermore *et al.* (2000) for a exhaustive analysis of the determinants of the labour participation of the disabled individuals (for example, the existence of other non-wages incomes, transfer and benefit receptors, wage levels, health care services, higher transportation costs, adaptability and accommodation adjustments in the workplace, recruitment costs, public policies, match between demand and supply, influence of the family and friends, among others).

and fishery (*reference category*) and hotels and restaurants. The most satisfied non-disabled workers can be found in education, health services and other industries. As regards to the disabled workers, they report strong levels of job dissatisfaction in the transport, finance and real state industry, manufacturing and construction. In the remaining industries, the job satisfaction levels are not statistically different respect from the reference category (agriculture, forestry and fishery). With regards to the regional differences, those individuals (disabled or not) living in the region of Madrid are the highest dissatisfied workers with their jobs. Also, the disabled individuals living in the south report lower levels of job satisfaction. On the contrary, the happiest non-disabled and disabled workers live in the Canary Islands and Northwest, respectively.

As in other studies, individuals employed in the private sector report stronger levels of dissatisfaction with their jobs than public workers. However, this result is only obtained for the non-disabled sample. Concerning responsibility in the job, those non-disabled and disabled workers in supervisory positions declare higher job satisfaction levels than other workers. However, the magnitude of the coefficient of this dummy variable (*supervisor*) is substantially larger in the disabled sample than in the non-disabled one (and akin to the effect of doubling hourly wages on the job satisfaction). This finding has to be related to the low sample size of disabled individuals working in supervisory positions (only 4.1%). With respect to the effect of the type of contract on the job satisfaction, the results reveal that none of the estimated coefficients for this variable are significant at the 5% level. However, this does not happen for the non-disabled workers, wherein those with a permanent contract are more satisfied with their jobs than those with a temporal contract or without a contract. The inexistence of differences in the job satisfaction by the type of contract for the disabled workers can be again justified by the fact of that for these individuals having a job, independently of the

type of contract or the number of hours of work, becomes an important achievement and, therefore, an unambiguous increase in job satisfaction. Thus, the most important thing for disabled individuals is to be employed in the labour market and escape from the inactivity or unemployment.

The existence of a good match between workers' formation and their jobs has a positive effect on their levels of job satisfaction. However, this only occurs for the non-disabled worker sample. Nevertheless, the estimation results indicate that those workers (disabled or not) who consider themselves overqualified have lower levels of job satisfaction. The magnitude of the coefficient of this variable is very similar for both samples. This result is consistent with those obtained in previous studies as, for example, Battu *et al*. (1997), Johnson and Johnson (2002) and Cabral (2005). With respect to the non-wages subsidies provided by the employers (i.e. provision of child and health care, education and training, leisure and subsidised housing), they have only a significant positive impact on non-disabled workers´ job satisfaction levels. There exist an inverse relationship between the number of unemployment spells in the last five years and the job satisfaction level. Although the job satisfaction levels have fallen all over the observed period (1995-2001), the magnitude of the coefficients of the year dummies indicates that this decline has been steeper for the disabled workers that non-disabled ones. This finding is consistent with the job satisfaction time series depicted in figure 1.

Using the estimation results shown in table 3, it is possible to decompose the job satisfaction difference between non-disabled and disabled individuals by applying the Oaxaca-Blinder's decomposition method (as we explained in the methodology section). According to table 4, the observed mean job satisfaction difference between both groups is 0.3468. The difference in the selection terms is the component that contribute more to

explain the observed job satisfaction differential (138.14%)[12]. Therefore, without the sample selection problem the observed job satisfaction differential would be 138 per cent lower[13]. Therefore, it is crucial to allow for the sample selection problem as we try to estimate the differences in the mean levels of job satisfaction between non-disabled and disabled individuals. With respect to the other two components, the differences in characteristics increase the observed job satisfaction differential (59.28%), whereas the differences in returns given for those characteristics contribute to reduce significantly such a differential (-97.41%).

[Table 4]

Table 4 also shows the decomposition of each component into subcomponents[14]. If a subcomponent presents a positive (negative) sign this means that the difference in that subcomponent contribute to increase (decrease) the job satisfaction differences between non-disabled and disabled individuals. The differences in age are the subcomponent that contributes more to increase the observed job satisfaction difference (150.49%), followed by the health status (35.95%) and the hourly wages (17.24%). On the contrary, the differences in educational level and overqualification are the subcomponents that reduce more the observed differential (17.95 and 6.73%, respectively). With respect to the differences in returns, the returns to age are substantially higher for non-disabled workers relatively to disabled workers. We have to keep in mind that the disabled workers are older than non-disabled workers and that the age effect on the job

[12] This result is due to that the effect of the selection term (lambda) on the job satisfaction differential depends on the size and sign of the estimated coefficients of lambda and its mean values.

[13] In many studies on wage differentials, the third term in our equation [4], the difference in the selection terms, is included in the left-hand side of the equation in order to represent the difference in the mean *offer* wages between, for example, males and females. Applying this idea to our research about job satisfaction, the mean *offer* job satisfaction difference becomes negative, -0.1322, and in favour of the disabled individuals.

[14] To decompose the unexplained component (returns) we have used the methodology proposed by Gardeazabal and Ugidos (2004) and based on the applications of restrictions on the estimated coefficients for each set of dummy variables. Thus, we can identify the *real contribution* of all dummy variables to the differences in returns, even of those used as reference group.

satisfaction is stronger for the former. However, the differences in the returns to hourly wages considerably reduce the job satisfaction differential (-335.47%). The differences in the job tenure also contribute drastically to reduce the observed differential (-166.72%). The stability and job security become one of the most important factors determining the job satisfaction of disabled individuals. The differences in the rest of subcomponents increase or decrease the observed job satisfaction differential, but its contribution is less important.

Finally, we should discuss some additional considerations about our results. Firstly and as several studies have mentioned, other factors must be considered when we try to explain job satisfaction differentials. In this sense, we should include factors as, for example, the social dialogue and relations, worker involvement, the quality of management and supervision, work organization and autonomy, work/home life balance, and health and safety at work (European Commission, 2002). In addition, to analyse the determinants of job satisfaction for disabled workers researchers need more information on the individual and job characteristics as, for example, type of disability, degree of severity, disability onset, cause of the disability, workplace accommodations, percentage of disabled individuals within the firm, health insurance costs, financial incentives, special training or promotion opportunities, the existence of a favourable environment in the firm toward the disabled workers (i.e. positive co-worker reactions), presence of supporting specialists, among others[15]. However, this information is not available in the ECHP and thus we can not include it in the estimated job satisfaction equations.

[15] Other studies as, for example, Kidd *et al.* (2000) and Baldwin and Johnson (1994) have pointed out that the type of disability plays an important role in the probability of employment. According to Kidd *et al.* (2000) those with physiological disabilities affecting sight, hearing, breathing and heart problems are much more likely to be in employment than those with psychological or learning difficulties..

Secondly, we find evidence about the marginal role played by workers with disabilities. In other words, the job matching quality for disabled workers usually is low. As we have observed, it is not very frequent to find a disabled worker in a 'relevant' position (e.g. manager or technician) within the firm. In fact, they are the last workers in entering the labour market during expansion periods and the first ones in leaving it during recession periods (Yelin and Katz, 1994; Baldwin and Schumacher 2002). Obviously, this evidence has an obvious implication related to the employment policy towards people with disabilities. As we have seen, a non-negligible portion of job satisfaction differentials is related to characteristics. This result may affect considerably the job satisfaction levels of the disabled individuals and leads to a progressive exclusion of these individuals from the labour market.

6. Conclusions

In this article, we have analysed the relationship between job satisfaction and disability for the Spanish case, using 1995-2001 waves of the ECHP. We have confirmed the existence of a job satisfaction differential against workers with disabilities, which is coincident with previous literature. We have estimated the determinants of these differentials, as Uppal (2005) but using a two-step Heckman's estimation and an ordered probit. The main novelty of this research consists of the decomposition of job satisfaction differentials into their subcomponents using the Oaxaca-Blinder methodology.

The Oaxaca-Blinder decomposition shows that the selection terms (the probability of being a wage or salary worker) is the most important term to explain the observed job satisfaction differential (138.14%). Therefore, without the sample selection problem the observed job satisfaction differential would be 138 per cent lower, masking the great

importance of labour market participation to consider any labour market issue related to people with disabilities (here, the analysis of job quality using job satisfaction indicators). The differences in characteristics increase the observed job satisfaction differential (59.28%), whereas the differences in returns given for those characteristics contribute to reduce significantly such a differential (-97.41%). The importance of the characteristics term stresses the relevance to actively promote the application of the principle of equal opportunities, closely linked to the employment strategy pursued by the European Commission nowadays, in order to eliminate the prejudices, fears, and especially the lack of information of employers about the disabled population.

References

Baldwin, M. and Johnson, W. (1992), "Estimating the employment effects of wage discrimination", *Review of Economics and Statistics*, 74 (3): 446-455.

Baldwin, M. and Johnson, W. (1994), "Labor market discrimination against men with disabilities", *Journal of Human Resources*, 29 (31): 865-887.

Baldwin , M. and Schumacher, E. (2002), "A note on job mobility among workers with disabilities", *Industrial Relations*, 41(3): 430-441.

Battu, H, Belfield, C. and Sloane, P. (1997), "Overeducation among graduates: a cohort view", University of Aberdeen, *mimeo*.

Bender, K, Donohue, S. and Heywood, J. (2005), "Job satisfaction and gender segregation", *Oxford Economics Papers*, 57: 479-496.

Blinder, A. S. (1973), "Wage discrimination: reduced form and structural estimates", *Journal of Human Resources*, 8 (4): 436-455.

Cabral, J. (2005), "Skill mismatches and job satisfaction", *Economics Letters*, 89: 39-47.

Clark, A. (1996), " Job satisfaction in Britain", *British Journal of Industrial Relations*, 34 (2): 189-217.

Clark, A. (1997), "Job satisfaction and gender: why are women so happy at work?", *Labour Economics*, 4 (4): 341-372.

Clark, A. and Oswald, A. (1996), "Satisfaction and comparison income", *Journal of Public Economics*, 61 (3): 359:381.

Clark, A., Oswald, A. and Warr, P. (1996) "Is job satisfaction U-shaped in age", *Journal of Occupational and Organizational Psychology*, 69: 57-81.

D'Addio, A., Eriksson, T. and Frijters, P. (2003), "An analysis of the determinants of job satisfaction when individuals' baseline satisfaction levels may differ", *Centre for Applied Microeconomics Working Paper*, 16.

Diaz-Serrano, L. and Cabral, J. (2005), "Low pay, higher pay and job satisfaction within the European Union: Empirical evidence from fourteen countries", *IZA Discussion Paper*, nº 1558.

European Commission (2002), *Employment in Europe 2002: Recent trend and prospects*, chapter 3.

Ferrer-i-Carbonell, A. and Frijters, P. (2004), "How important is methodology for the estimates of the determinants of happiness?", *Economic Journal*, 114 (july): 641-659.

Gardeazabal, J. and Ugidos, A. (2004), "More on identification in detailed wage decompositions", *The Review of Economics and Statistics*, 86 (4): 1034-1036.

Gardner, J. and Oswald, J. (2001), "What has happened to the quality of workers' lives in Britain?", *mimeo*, University of Warwick.

Greene, W. (1997), *Econometric Analysis*, Macmillan, New York.

Heckman, J.J. (1979), "Sample selection bias as an specification error", *Econometrica*, 47: 153-161.

Johnson, G. and Johnson, W. (2002), "Perceived over-qualification and dimensions of job satisfaction: a longitudinal analysis", *Journal of Psychology*, 134:537-555.

Johnson, W. and Lambrinos, J.(1985), "Wage discrimination against handicapped men and women", *Journal of Human Resources*, 20 (2): 264-277.

Kidd, M. P., Sloane, P. and Ferko, I. (2000), " Disability and the labour market: an analysis of British males", *Journal of Health Economics*, 19 (6): 961-981.

Konow, J. and Earley, J. (1999), " The hedonistic paradox: is homo-economicus happier?", *mimeo*, Loyola Marymount University, Department of Psychology.

Kraiser, L. (2002), "Job satisfaction: A comparison of standard, non-standard and self-employment patterns across Europe with a special note to the gender/job satisfaction paradox", *EPAG Working Paper*, University of Essex, nº 27.

Leontaridi, R. Sloane, P. (2001), "Measuring the quality of jobs", *European Low-Wage Employment Research Network (LOWER) Working Paper*, nº 7.

Livermore, G., Stapleton, D., Nowak, M., Wittenburg, D. and Eiseman, E. (2000), "The economics of policies and programs affecting the employment of people with disabilities", *Cornell University, mimeo*. Accessible on the web direction: http://www.ilr.cornell.edu/rrtc

Ng, Y. (1997), "A case of happiness, cardinalism, and interpersonal comparability", *Economic Journal*, 107 (445): 1848-1858.

Oaxaca, R. (1973), "Male-female wage differentials in urban labor markets", *International Economic Review*, 4 (3): 693-709.

Oaxaca, R. L. and Ransom, M. (1994), "On discrimination and the decomposition of wage differentials", *Journal of Econometrics*, 61 (1): 5-21.

Peracchi, F. (2002), "The European community household panel: a review", *Empirical Economics*, 27: 63-90.

Pouliakas, K. and Theodossiou, I. (2003), "Socio-economic differences in the perceived quality of high and low-paid jobs in Europe", *mimeo*.

Sanz de Galdeano, A. (2002), "Gender differences in job satisfaction and labour market participation: UK evidence from propensity score estimates", *mimeo*, European University Institute

Schwartz, N. (1995), "What respondents learn from questionnaires: the survey interview and the logic of conversation", *International Statistical Review*, 63: 153-177.

Sloane, P. and William, H. (2000), "Job satisfaction, comparison earnings and gender", *Labour*, 14 (3): 473-501.

Uppal, S. (2005), "Disability, workplace characteristics and job satisfaction", *International Journal of Manpower*, 26, 4:336-349.

Van Praag, B. (1991), "Ordinal and cardinal utility: an integration of the two dimensions of the welfare concept", *Journal of Econometrics*, 50: 69-89.

Yelin, E. and Katz, P. (1994), "Labor force trends among persons with and without disabilities", *Monthly Labour Review*, 117 (10): 36-42.

Table 1: Mean job satisfaction levels for non-disabled (*N*) and disabled (*D*) individuals in Spain.

Type of job satisfaction	**All**			**Male**			**Female**		
	N	*D*	*t-test* [a]	*N*	*D*	*t-test* [a]	*N*	*D*	*t-test* [a]
Overall	4.24	3.88	7.17	4.25	3.87	5.78	4.23	3.89	4.26
Pay	3.31	3.06	5.00	3.32	3.07	3.88	3.30	3.06	3.22
Job security	4.19	4.03	2.81	4.21	4.03	2.47	4.16	4.03	1.37
Type of work	4.32	4.09	4.57	4.34	4.11	3.64	4.29	4.05	2.77
Hours of work	3.97	3.82	3.01	3.92	3.77	2.48	4.04	3.91	1.66
Working time	4.22	4.12	2.15	4.19	4.17	0.29	4.28	4.02	3.26
Working conditions	4.21	3.96	5.02	4.15	3.94	3.25	4.31	3.99	4.11
Distance from home	4.15	4.08	1.23	4.10	4.09	0.19	4.22	4.07	1.91

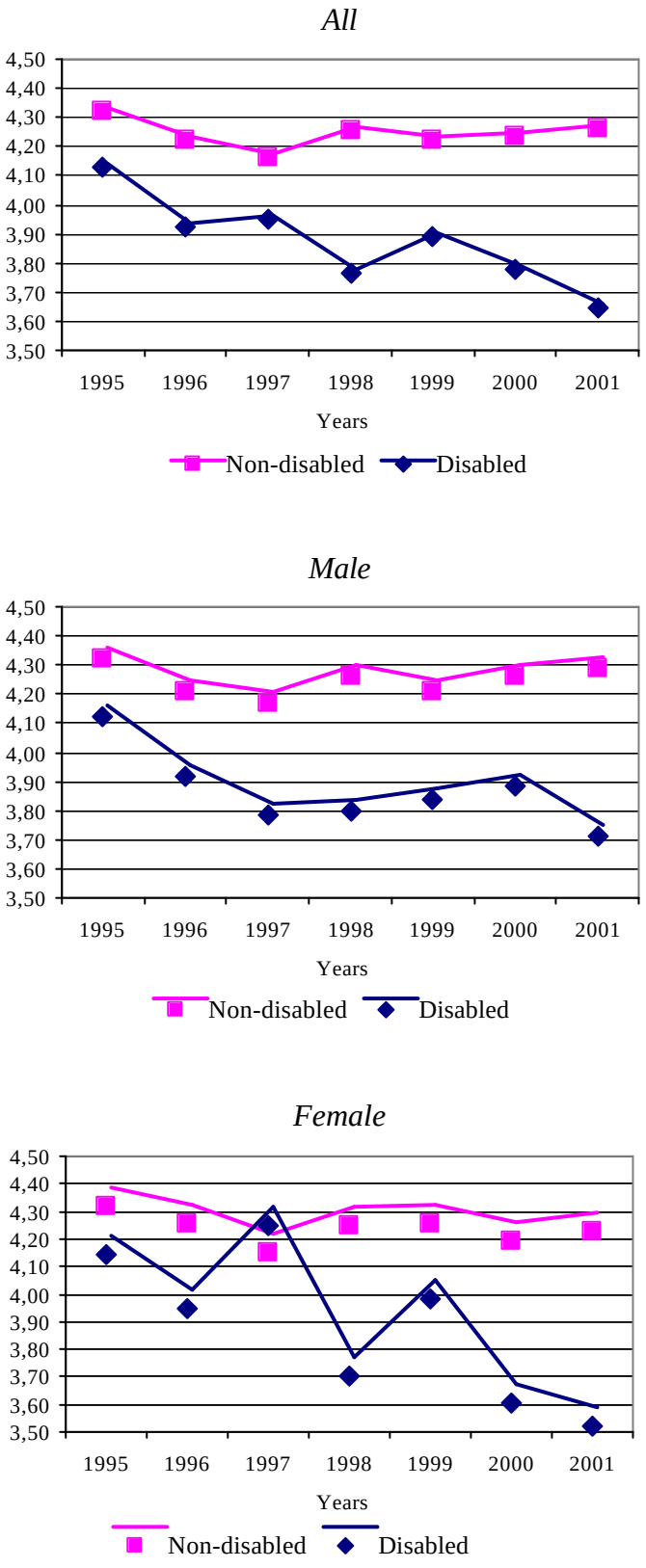
Note: ([a]) t-statistic for the equality of means on job satisfaction levels by disability status.
Source: European Community Household Panel. Period 1995-2001. All means have been calculated by using weighted data.

Table 2: Percentage of highly satisfied in each type of job satisfaction for non-disabled (*N*) and disabled (*D*) individuals in Spain.

Type of job satisfaction	**All**			**Male**			**Female**		
	N	*D*	*t-test* [a]	*N*	*D*	*t-test* [a]	*N*	*D*	*t-test* [a]
Overall	49.40	40.39	5.03	49.50	40.49	3.80	49.22	39.66	3.36
Pay	19.68	15.74	2.83	19.37	16.01	1.84	20.23	15.25	2.37
Job security	50.71	46.76	2.16	50.82	48.09	1.17	50.49	44.30	2.14
Type of work	51.14	44.31	3.78	51.32	44.37	3.03	50.82	44.21	2.27
Hours of work	39.11	34.55	2.63	37.64	32.75	2.23	41.72	37.86	1.36
Working time	48.55	45.27	1.80	47.02	46.93	0.04	51.27	42.18	3.14
Working conditions	48.64	40.99	4.24	46.84	41.32	2.39	51.82	40.39	4.01
Distance from home	47.07	45.27	0.99	45.25	46.06	-0.35	50.30	43.83	2.23

Note: ([a]) t-statistic for the equality of proportions by disability status.
Source: European Community Household Panel. Period 1995-2001. All percentages have been calculated by using weighted data.

Figure 1: Annual evolution of average overall job satisfaction for non-disabled and disabled persons in Spain.



Source: European Community Household Panel. Period 1995-2001. All means have been calculated by using weighted data.

Table 3: Overall job satisfaction regressions.

	ALL NON-DISABLED					ALL DISABLED				
Variables	**Mean**	**Ordered Probit**		**Heckman S-M**		**Mean**	**Ordered Probit**		**Heckman S-M**	
		Coef	z	Coef	t		Coef	z	Coef	t
Individual characteristics										
Female	0.350	0.025	1.49	0.052	2.21	0.369	0.083	0.97	0.198	1.51
Age	37.951	-0.065	-13.14	-0.087	-7.42	43.972	-0.082	-3.41	-0.140	-2.93
Age squared	1,557.99	0.001	12.57	0.001	6.86	2,063.13	0.001	3.30	0.002	2.63
Married/cohabiting	0.649	0.044	2.60	0.045	2.42	0.724	-0.126	-1.42	-0.275	-1.84
Educational level										
University	0.325	-0.238	-10.60	-0.298	-8.67	0.144	-0.355	-2.28	-0.642	-2.23
Secondary	0.207	-0.147	-7.41	-0.174	-7.89	0.158	-0.455	-4.44	-0.636	-4.07
Primary or less (*reference*)	0.468	-	-	-	-	0.697	-	-	-	-
Health (bad or very bad)	0.012	-0.306	-4.62	-0.391	-5.42	0.330	-0.250	-3.41	-0.313	-3.53
Job characteristics										
Log (real hourly net wages)	6.829	0.312	14.51	0.360	15.41	6.663	0.426	3.95	0.534	4.11
Job tenure	7.939	-0.009	-2.07	-0.006	-1.27	8.508	0.050	2.17	0.062	2.22
Job tenure squared	117.653	0.000	2.28	0.000	1.49	130.431	-0.002	-1.68	-0.002	-1.67
Hours of work										
15-29	0.060	-0.127	-4.26	-0.155	-4.75	0.083	-0.190	-1.40	-0.220	-1.33
30-35	0.110	-0.048	-1.92	-0.062	-2.26	0.105	0.166	1.28	0.145	0.93
36-39	0.087	-0.103	-3.79	-0.107	-3.62	0.073	-0.230	-1.53	-0.214	-1.17
40 (reference)	0.485	-	-	-	-	0.467	-	-	-	-
41+	0.258	-0.004	-0.25	-0.010	-0.53	0.272	0.017	0.20	0.043	0.42
Occupation										
Manag./profe. (*reference*)	0.172	-	-	-	-	0.088	-	-	-	-
Associate professionals	0.116	0.011	0.37	0.012	0.37	0.059	0.448	2.02	0.524	1.97
Clerks	0.113	-0.086	-2.79	-0.091	-2.70	0.080	-0.154	-0.69	-0.202	-0.75
Service and sales	0.143	-0.038	-1.12	-0.039	-1.05	0.151	-0.087	-0.39	-0.110	-0.41
Skilled agri. and fishery	0.208	-0.107	-3.26	-0.105	-2.94	0.261	0.065	0.30	0.065	0.25
Operators/assemblers	0.102	-0.149	-4.13	-0.147	-3.74	0.092	-0.135	-0.59	-0.174	-0.62
Elementary occupations	0.144	-0.223	-6.42	-0.251	-6.62	0.268	-0.360	-1.66	-0.436	-1.67
Industry										
Agri/fores/fish (*reference*)	0.033	-	-	-	-	0.076	-	-	-	-
Manufacturing	0.237	0.077	1.86	0.094	2.08	0.203	-0.477	-3.03	-0.517	-2.71
Construction	0.106	0.083	1.93	0.111	2.36	0.134	-0.390	-2.45	-0.390	-2.02
Retail and trade	0.123	0.196	4.45	0.222	4.57	0.121	-0.098	-0.57	-0.084	-0.40
Hotel and restaurants	0.048	0.034	0.66	0.048	0.84	0.058	-0.115	-0.54	-0.092	-0.35
Trans./finance/real estate	0.159	0.074	1.72	0.096	2.04	0.088	-0.532	-3.07	-0.619	-2.95
Public Administration	0.086	0.179	3.50	0.220	3.93	0.092	-0.070	-0.32	-0.090	-0.34
Education	0.079	0.390	7.49	0.420	7.38	0.078	0.134	0.58	0.153	0.55
Health services	0.072	0.290	5.72	0.305	5.50	0.053	-0.099	-0.41	-0.142	-0.49
Other industries	0.055	0.256	5.42	0.281	5.43	0.097	-0.055	-0.31	-0.046	-0.21
Region										
Northwest (*reference*)	0.123	-	-	-	-	0.132	-	-	-	-
Northeast	0.170	0.007	0.24	-0.007	-0.19	0.130	-0.271	-1.67	-0.403	-1.92
Madrid	0.124	-0.311	-11.11	-0.371	-9.85	0.078	-0.506	-3.19	-0.769	-3.06
Centre	0.133	0.026	0.88	0.022	0.67	0.099	-0.240	-1.53	-0.321	-1.68
East	0.226	0.048	1.89	0.027	0.82	0.271	-0.115	-0.92	-0.318	-1.41
South	0.165	0.055	2.01	0.039	1.30	0.233	-0.371	-2.77	-0.535	-3.11
Canary Islands	0.059	0.200	4.79	0.183	3.84	0.058	-0.326	-1.52	-0.423	-1.64
Private sector	0.748	-0.051	-2.05	-0.052	-1.92	0.772	-0.177	-1.30	-0.228	-1.39

Job responsibility										
Supervisor	0.080	0.274	9.83	0.282	9.34	0.041	0.387	2.24	0.416	2.01
Intermediate	0.181	0.091	4.88	0.098	4.84	0.159	-0.034	-0.35	-0.057	-0.49
None (*reference*)	0.739	-	-	-	-	0.800	-	-	-	-
Type of contract										
Open-ended (*reference*)	0.678	-	-	-	-	0.647	-	-	-	-
Fixed-term	0.275	-0.180	-8.95	-0.201	-9.10	0.273	0.100	0.94	0.107	0.83
No contract	0.025	-0.376	-8.08	-0.458	-8.95	0.051	0.133	0.75	0.127	0.59
Others	0.022	-0.068	-1.49	-0.065	-1.30	0.028	-0.183	-0.88	-0.189	-0.75
Job matching										
Good	0.430	0.308	18.03	0.342	18.36	0.282	0.013	0.14	-0.012	-0.11
Fair	0.091	0.077	3.16	0.092	3.44	0.085	-0.212	-1.66	-0.248	-1.61
None (*reference*)	0.479	-	-	-	-	0.633	-	-	-	-
Overqualified	0.575	-0.161	-11.37	-0.181	-11.71	0.446	-0.110	-1.54	-0.147	-1.70
Non-wages subsidies	0.559	0.089	6.09	0.090	5.60	0.490	0.023	0.30	0.044	0.48
Previously unemployed	0.769	-0.021	-4.70	-0.025	-4.98	1.118	-0.038	-2.30	-0.040	-1.99
Years										
1995 (*reference*)	0.163	-	-	-	-	0.172	-	-	-	-
1996	0.152	-0.069	-2.86	-0.088	-3.36	0.151	-0.257	-2.18	-0.293	-2.04
1997	0.143	-0.161	-6.58	-0.164	-6.17	0.133	-0.171	-1.38	-0.187	-1.24
1998	0.138	-0.067	-2.69	-0.052	-1.94	0.170	-0.259	-2.22	-0.365	-2.39
1999	0.139	-0.110	-4.40	-0.106	-3.83	0.138	-0.189	-1.50	-0.202	-1.33
2000	0.134	-0.087	-3.42	-0.085	-3.00	0.126	-0.301	-2.34	-0.316	-2.03
2001	0.130	-0.094	-3.74	-0.088	-3.10	0.111	-0.219	-1.60	-0.208	-1.25
Lambda	0.666	-	-	-0.146	-1.62	1.289	-	-	-0.447	-1.05
Constant		-	-	3.749	11.48		-	-	5.062	2.99
m_1		-1.339					-1.667			
m_2		-0.712					-1.021			
m_3		-0.022					-0.370			
m_4		0.717					0.320			
m_5		1.915					1.458			
Nº observations	**25.235**	**25.235**		**25,235**		**1,063**	**1,063**		**1,063**	
Adjusted R^2		**0.044**		**0.130**			**0.072**		**0.178**	

Source: European Community Household Panel. Period 1995-2001. All regressions have been estimated by using weighted data.

Table 4: Decomposition of the overall job satisfaction difference between non-disabled and disabled individuals.

Observed job satisfaction difference (D)		**0.3468**		
Characteristics (C)		0.2056		
Returns (R)		-0.3378		
Selection (S)		0.4790		
Contribution of each component:				
Characteristics (C/D)		0.5928		
Returns (R/D)		-0.9741		
Selection (S/D)		1.3814		
Total (C/D) + (R/D) + (S/D)		**1.0000**		
Decomposition into subcomponents:	**Characteristics**		**Returns**	
Female	-0,0010	-0,29%	-0,0540	-15,58%
Age	0,5217	150,49%	2,3538	678,91%
Age squared	-0,5142	-148,32%	-1,3418	-387,01%
Married/cohabiting	-0,0034	-0,98%	0,2322	66,97%
Educational level [a]	-0,0622	-17,95%	-0,1458	-42,07%
Health	0,1246	35,95%	-0,0258	-7,44%
Log (real hourly net wages)	0,0598	17,24%	-1,1631	-335,47%
Hours of work [a]	0,0019	0,55%	-0,0055	-1,58%
Job tenure	0,0036	1,03%	-0,5780	-166,72%
Job tenure squared	-0,0044	-1,28%	0,3314	95,57%
Occupation [a]	0,0331	9,55%	0,0383	11,03%
Industry [a]	0,0003	0,07%	0,0420	12,11%
Region [a]	-0,0204	-5,88%	-0,0017	-0,48%
Private sector	0,0012	0,36%	0,1363	39,33%
Job responsibility [a]	0,0132	3,80%	0,0121	3,49%
Type of contract [a]	0,0119	3,42%	0,0819	23,62%
Job matching [a]	0,0510	14,72%	0,0222	6,41%
Overqualified	-0,0233	-6,73%	-0,1023	-29,50%
Non-wages subsidies	0,0062	1,79%	-0,0150	-4,33%
Previously unemployed	0,0087	2,52%	0,0164	4,73%
Years [a]	-0,0027	-0,77%	0,0016	0,47%
Constant	-	-	-0,1730	-49,91%
TOTAL	**0,2056**	**59,28%**	**-0,3378**	**-97,41%**

Note: [(a)] Mean value of all coefficients of the dummies created for that variable.

Source: Own elaboration from the estimation results shown in table 3.

Appendix

Table A.1: Probit estimates (=1 if the individual is a wage earner working at least 15 or more hours a week, = 0 otherwise) in a Heckman's two-step selection model for non-disabled and disabled individuals in Spain.

	ALL NON-DISABLED			ALL DISABLED		
Variables	**Mean**	**Coef**	**z**	**Mean**	**Coef**	**z**
Constant		-3.361	-47.48		-2.443	-8.46
Female	0.394	-0.287	-22.57	0.436	-0.228	-5.18
Age	38.201	0.189	51.29	49.811	0.098	7.46
Age ^{2}	1,625.324	-0.002	-54.91	2,634.586	-0.001	-9.97
Nº children <=5	0.180	-0.098	-6.84	0.087	-0.210	-3.59
Nº children 6-12	0.288	-0.136	-12.44	0.174	0.061	1.53
Married/cohabiting	0.600	0.110	6.40	0.673	0.359	6.80
Household other members' income [a]	1,898.587	$-0.5*10^{-4}$	-18.33	1,545.963	$-0.7*10^{-4}$	-5.47
Educational level						
University	0.247	0.513	32.62	0.053	0.759	9.58
Secondary	0.219	0.073	4.52	0.088	0.328	5.06
Primary (reference)	0.534	-	-	0.859	-	-
Region						
Northwest (reference)	0.142	-	-	0.175	-	-
Northeast	0.161	0.228	8.77	0.112	0.226	2.39
Madrid	0.102	0.468	18.78	0.051	0.489	5.10
Centre	0.143	0.049	1.92	0.143	0.053	0.61
East	0.212	0.338	15.61	0.215	0.508	7.11
South	0.180	0.030	1.30	0.230	0.133	1.77
Canary Islands	0.060	0.255	6.93	0.075	-0.039	-0.32
Years						
1995 (reference)	0.172	-	-	0.187	-	-
1996	0.156	0.022	1.03	0.161	0.062	0.85
1997	0.148	0.037	1.69	0.147	-0.060	-0.80
1998	0.139	0.047	2.10	0.147	0.185	2.56
1999	0.134	0.104	4.64	0.130	-0.013	-0.17
2000	0.129	0.141	6.23	0.116	0.029	0.38
2001	0.122	0.184	8.06	0.111	-0.008	-0.11
Nº of observations	47,173	47,173		5,934	5,934	
Pseudo R^2		0.119			0.147	

Note: ([a]) Net income in thousands of pesetas.

Source: European Community Household Panel. Period 1995-2001. All regressions have been estimated by using weighted data.