LOW-PAY HIGHER PAY AND JOB QUALITY: EMPIRICAL EVIDENCE FOR PORTUGAL

José António Cabral Vieira
António Gomes de Menezes
Patrícia de Almeida Gabriel

ABSTRACT

This paper examines to what extent low pay jobs can be considered of low quality. For this purpose, we use three waves (1997-1999) of the European Community Household Panel (ECHP) for Portugal. The results indicate that low pay workers report a lower level of job satisfaction when compared with their higher paid counterparts. Moreover, some of the determinants of job satisfaction differ between these two types of workers. This supports the idea that low wage employment mainly comprises low quality jobs and is consistent with the segmented labour market theory, which claims the existence of good and bad jobs. This is, however, at odds with some empirical evidence recently reported for the British labour market where low pay individuals report a higher level of satisfaction, which is more in line with the notion that these workers obtain compensating differences in the form of non-pecuniary benefits.

KEY WORDS: Job satisfaction, job quality, low-wage

1. INTRODUCTION

The incidence and the persistence of low-pay work has become a matter of great concern in many developed economies as a result of increasing wage inequality (see OECD, 1996 and 1997a, Asplund et al., 1998, Lucifora and Salverda, 1998, Stewart and Swaffield, 1999, Cappellari, 2000, Cardoso *et* al., 2000). Moreover, low pay employment and job quality have become important policy issues, namely in the European Union (see European Commission, 2001 and 2002). Also Salverda *et* al. (2001) put forward the idea that policies towards low-wage jobs should centre on their quality at least as importantly as on the level of pay which they provide.

Job quality is a relative concept regarding objective characteristics of the job-worker match. It also involves the subjective evaluation of these characteristics by the respective worker, on the basis of his characteristics and expectations. The European Union Employment in Europe (2001) report suggests that in the absence of a single composite indicator any analysis of job quality must be based on data on both objective and subjective evaluations of the worker-job match. In addition, the European Union Employment (2002) report reinforces this stance with the suggestion of the inclusion of job satisfaction in its definition of job quality. We follow the same type of reasoning in the present paper.

Indeed, Leontaridi and Sloane (2001) use job satisfaction as a proxy of job quality in the British labour market. Furthermore, they attempt to distinguish between two strands of the literature: the segmented labour market theory versus compensating wage differentials theories. The segmented labour market view, or, at least, the dual labour market version, claims the existence of two distinct labour markets with strong mobility barriers between

them. In addition, this theory argues that we can classify jobs into good jobs and bad jobs, with bad jobs being those not only having worse working conditions, but also lower wages. As Leontaridi and Sloane (2001) argue, this contrasts with the compensating wage differentials theory according to which jobs with poor working conditions would be expected, ceteris paribus, to compensate for this with higher pay.

Leontaridi and Sloane (2001) surprisingly conclude that higher paid workers report lower job satisfaction than their lower paid counterparts. In their opinion, this casts doubt on the view that low paid jobs are bad jobs and that high paid jobs are good jobs. This is reinforced by their finding that it is by no means the case that moving from a low paid to a higher paid job increases job satisfaction. In sum, the results do not support the view that low paid jobs are inherently of low quality, at least as far as British evidence is concerned. This seems in line with a view that low paid workers likely obtain compensating differences in the form of non-pecuniary benefits. Jones and Sloane (2003) and Leontaridi *et* al. (2004) also present this type of conclusion. Apparently, there is a matching process in the labour market as a whole in which individuals seeking higher pay are allocated to higher-paying jobs and those seeking for non-pecuniary benefits are allocated to low-paying jobs. In such a case, removing low paid jobs, namely through regulation, would not necessarily improve worker's well being.

This paper tries to evaluate to what extent the aforementioned findings also hold for Portugal. For this purpose, we use three waves of the European Community Household Panel (ECHP). The panel nature of the data allows us to use a random effects estimator in order to control for unobservable individual heterogeneity.

The paper is organised as follows. The next section describes the data and provides evidence on reported levels of job satisfaction by low and higher paid workers. Section 3 evaluates the determinants of job satisfaction for low and high paid workers separately. Finally, section 4 concludes.

2. DATA AND RAW EVIDENCE ON JOB SATISFACTION BETWEEN LOW AND HIGHER PAID WORKERS

In this paper we use three waves (1997-1999) of the European Community Household Panel (ECHP) for Portugal. This is a rich data set, which includes information about the individuals and their families, such as gender, education, age, wages and other income sources, marital status, health status, family size and social relations, among others. It also includes information on variables such as the type of employment contract, employer size and the number of hours of work in the main activity. With respect to job satisfaction individuals were asked to report on a six-point scale how satisfied they were with their work or main activity. The lowest level of the scale stands for workers who were not satisfied at all whereas the highest stands for fully satisfied workers. Hourly wages were computed as monthly wages divided by the number of hours worked per month. As usual in the literature, a low-wage worker is defined as an individual who earns less than two thirds of the median hourly wage. Individuals over 65 years, the self-employed and observations with missing values were deleted from the sample. The final unbalanced panel contains 12247 observations gathered from 5347 individuals.

Table 1 in appendix presents some sample descriptive statistics. As we can observe, 13,4% of the workers in the sample fall into the low pay segment. Moreover, more than 50% of the low-paid workers are females and the low-wage group is nearly two years younger than their higher-wage counterparts. The incidence of low-wage employment decreases with the level of education and with the employer's size. Finally, the share of public

sector workers is much lower in the low wage group (nearly 3%) than among the higher paid group (27%), indicating that low wage employment is mainly concentrated in the private sector.

------ Insert Figures 1 to 4 about here ------

The information depicted in Figure 1 indicates that the mode of the sample is located at level of satisfaction 3, which is valid for both low-wage and higher-wage workers. However, the same figure indicates that the proportion of workers reporting one of the three lowest levels of satisfaction is higher among the low paid group. The reverse occurs for the proportion of workers reporting one of the three highest levels of satisfaction. Thus, low paid workers are, overall, unhappier with their work. The same conclusion holds when we pool the sample or when we split the sample by years (see Figures 2-4).

------ Insert Table 1 about here ------

Indeed, the information included in Table 1 clearly indicates that the mean value of job satisfaction is higher in the higher-wage segment. Moreover, the differences in the mean values of these two types of workers are statistically different from zero at the 1% level of significance. Contrary to what has been reported for the British labour market, this finding is inconsistent with the notion that low paid workers are compensated with non-pecuniary benefits. It is, however, consistent with the existence of a two-tier labour market.

3. THE DETERMINANTS OF JOB SATISFACTION

This section examines the determinants of job satisfaction for low paid jobs and for higher paid jobs separately. As we noted in the previous section, the level of satisfaction is reported on a six-point ordinal scale. Furthermore, the panel nature of the data enables us to control for individual unobserved heterogeneity. We explore this interesting feature of the data since one may suspect that some levels of satisfaction are likely to be recorded because of some underlying unobserved characteristics such as the emotional state or mood, which may vary across individuals. Because of this, we chose a random ordered probit model to carry our empirical work.

We assume that the propensity of individual i to report a certain level of satisfaction in period t is driven by the following structure:

$$S_{it}^* = \beta' X_{it} + v_{it} \qquad\qquad i = 1,...,N \qquad t=1,...,6 \qquad\qquad (1)$$

where $v_{it} = \varepsilon_{it} + u_i$, $var(v_{it}) = \sigma_\varepsilon^2 + \sigma_u^2 = 1 + \sigma_u^2$ and $\rho_v = \dfrac{\sigma_u^2}{1 + \sigma_u^2}$

We assume that ε_{it} is distributed $N(0,1)$ and that the individual time-invariant specific term u_i is $N(0, \sigma_u)$.

Note that we do not observe S_{it}^* but observe instead an indicator variable of the type:

$$S_{it} = \begin{cases} 0 & if & S_{it}^* \leq \mu_0 \\ \\ j & if & \mu_{j-1} < S_{it}^* \leq \mu_j, & j = 1,2,3,4 \\ \\ 5 & if & S_{it}^* > \mu_4 \end{cases} \qquad (2)$$

The log-likelihood function reads:

$$LogL = \sum_{i=1}^{N} log\, P(S_{i1},...,S_{iT}) \qquad (3)$$

Defining $a_{it} = \mu_{j-1} - \beta' X_{it}$ and $b_{it} = \mu_j - \beta' X_{it}$ we can write (3) as follows:

$$P(S_{i1},...,S_{iT}) = \int_{a_{i1}}^{b_{i1}} ... \int_{a_{iT}}^{b_{iT}} \phi(v_{i1},...,v_{iT})dv_{i1}...dv_{iT} = \int_{a_{i1}}^{b_{i1}} ... \int_{a_{iT}}^{b_{iT}} \int_{-\infty}^{+\infty} \phi(\varepsilon_{it}\,|\,u_i)\phi(u_i)du_i d\varepsilon_{iT}...d\varepsilon_{i1} =$$

$$\int_{-\infty}^{+\infty} \phi(u_i)\prod_{t=1}^{T}\left[\Phi(b_{it}\,|\,u_i) - \Phi(a_{it}\,|\,u_i)\right]du_i \qquad (4)$$

where ϕ and Φ denote the probability distribution function and the cumulative distribution function of the normal distribution, respectively.

Therefore, the log-likelihood for this model can be generalized from the arguments made by Butler and Moffit (1982). Heterogeneity is handled by using the Guass-Hermite quadrature to integrate out the joint density. As usual in the ordered probit model, we assume that $\mu_0=0$. All estimations were performed using the statistical package Limdep 8.0.

In order to identify the determinants of job satisfaction we relied on available evidence on the issue, which suggests that wages are important but do not explain the whole variation in reported levels of job satisfaction. For instance, Clark (1996) finds that after controlling for wages and for a large set of other covariates, females are happier at work than males. Moreover, it has been found that reported satisfaction depends on variables such the age of the worker, comparison wage rates, level of education, employer size, industry, union membership status, region, health status, type of employment contract, hours of work and educational mismatches, among others (see, for instance, Borjas, 1979, Miller, 1990, Meng, 1990, Idson, 1990, Clark, 1996 and 1997, Clark and Oswald, 1996, Leontaridi and Sloane, 2001, Souza-Poza and Sousa-Poza, 2000 and Sloane and William, 2000 and Jones and Sloane, 2003). For the purpose of this work, we use as explanatory variables the logarithm of hourly wages, logarithm of hours worked, the individual's age and its square value. Furthermore, we also control for gender, education, marital status, health status, job-worker skill mismatches, type of contract, private versus

public sector, employer size, occupations, regions, and whether the employer provides health care and subsidized housing.

------ Insert Table 1 about here ------

The estimation results are presented in Table 2. As in most of the literature, job satisfaction follows a U-shaped pattern with age. We find however, no significant effect for education and gender, which differs substantially from what has been presented in the international literature. The fact of being overskilled has a negative impact on satisfaction for both high and low paid workers (the reverse is valid for having a permanent contract which increases satisfaction). Hourly wages, working in the public sector, and working full time exert a positive, statistically significant, impact on satisfaction for higher paid workers, while are not statistically different from zero for low paid workers. The same holds for the provision of health care and for subsidized housing by the employer.

5. CONCLUSIONS AND REMARKS

This paper examines the relation between low-wage employment and job quality. We find support for the European Commission concern that low pay jobs are inherently of low quality, at least in Portugal. Our results are at odds with empirical evidence recently reported for the British labour market. However, our results are consistent with the existence of good and bad jobs, as in dual labour markets, where some workers are involuntarily trapped in bad jobs (i.e. low-wage) segment.

Furthermore, a regression analysis which controls for unobserved heterogeneity reveals that the impact on satisfaction of variables such as hourly wages and the provision of fringe benefits by the employer, like subsidized housing and health care, differ across low-paid and higher-paid segments of the labour market. This means that the determinants of job satisfaction differ across the two segments.

The results also suggest that empirical evidence on job quality can hardly be generalised across the European labour markets. This is particularly important for policy making at the European Union level. Such a heterogeneity means that if in some countries removing low employment, namely through regulation, may worsen the workers' well-being, in other cases such a policy may lead to a totally different outcome.

REFERENCES

Asplund, R., Sloane, P. and Theodossiou, I. (1998) *Low pay and earnings mobility in Europe*, Cheltenham: Edward Elgar.

Borjas, G. (1979) "Job satisfaction, wages and unions", *Journal of Human Resources*, XIV, 21-40.

Butler, J. and Moffit, R. (1982) "A computational efficient quadrature procedure for the one factor multinomial probit model", *Econometrica*, 50, 761-764.

Cappellari, L. (2000) "Low-wage mobility in the Italian labour market", *International Journal of Manpower*, 21: 264-290.

Cardoso, A., Sousa, R., Castro, V. and Ferreira, P. (2000) "O Perfil do trabalhador e da empresa de baixos salários em Portugal", *Economia*, XXIV: 53-66.

European Commission (2001) *Employment in Europe 2001*: *Recent Trends and Prospects*, Employment and Social Affairs, Chapter 4, Luxembourg.

European Commission (2002) *Employment in Europe 2002*: *Recent Trends and Prospects*, Employment and Social Affairs, Chapter 3, Luxembourg.

Idson, T. (1990) "Establishment size, job satisfaction and the structure of work", *Applied Economics*, 11, 606-628.

Jones, R. and Sloane, P. (2003) "Low pay higher pay and job satisfaction in Wales", WELMERC Discussion paper Nº. 2003-03, University of Wales Swansea.

Leontaridi, R. and Sloane, P. (2001) "Measuring the Quality of Jobs: Promotion Prospects, Low Pay and Job Satisfaction", LoWER Working Paper Nº. 07, University of Amsterdam.

Leontaridi, R., Sloane, P. and Jones, R. (2004) "Are Low Paid Jobs of Low Quality? Some British Evidence", WELMERC Discussion paper Nº. 2004-02, University of Wales Swansea.

Lucifora, C. and Salverda, W. (1998) *Policies for low wage employment and social exclusion in Europe*, Milan: FrancoAngeli.

Meng, R. (1990) "The relationship between trade unions and job satisfaction", *Applied Economics*, 22, 1635-1648.

Miller, P. (1990) "Trade unions and job satisfaction", *Australian Economic Papers*, 29, 226-248.

OECD (Organization for economic co-operation and development) (1997) "Earnings mobility: taking a longer run view", in *Employment Outlook 1997*, Paris: 27-61.

OECD (Organization for economic co-operation and development) (1996) "Earnings inequality, low-paid employment and earnings mobility", in *Employment Outlook 1996*, Paris: 59-108.

OECD (Organization for economic co-operation and development) (1999) "Earnings distribution and poverty", in *Implementing OECD Jobs Strategy: assessing performance and Policy*, Paris: 89-106.

Salverda, W., Bazen, S. and Gregory, M. (2001) *The European-American employment gap, wage inequality, earnings mobility and skill: a study for France; Germany, the Netherlands, the United Kingdom and the United States*. University of Amsterdam, European Low-wage Employment Research Network (LOWER), Final Report.

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

Sousa-Poza, A. and Souza-Poza, A. (2000) "Taking another look at the gender/job satisfaction paradox", *Kyklos*, 53, 135-152.

Stewart, M. and Swaffield, J. (1999) "Low pay dynamics and transition probabilities", *Economica*, 66: 23-42.

Appendix

Table 1 – Sample Descriptive Statistics

	Higher pay		Low pay	
	Mean	Std.Dev.	Mean	Std.Dev.
Log hourly wage	6.547	0.520	5.669	0.410
Log hours	5.071	0.175	5.172	0.300
Age	37.34	11.97	35.40	14.74
Age squared	1538	967.8	1471	1213
Gender(male)	0.593		0.468	
Education secondary	0.268		0.074	
Overskilled	0.425		0.314	
Married	0.676		0.516	
Good health	0.654		0.603	
Health care provided by employer	0.173		0.067	
Employer provides subsidized housing	0.027		0.048	
Permanent contract	0.826		0.609	
Full time job	0.973		0.917	
Public sector	0.273		0.032	
Workplace size 5-19	0.346		0.297	
Workplace size 20-49	0.171		0.087	
Workplace size 50-99	0.112		0.047	
Workplace size 100 plus	0.208		0.043	
Services	0.601		0.502	
Professionals	0.085		0.005	
Technicians	0.099		0.009	
Clerks	0.127		0.040	
Service workers and sellers	0.140		0.229	
Agriculture and fishing	0.022		0.139	
Craft and related trades workers	0.225		0.209	
Plant and machine operators	0.119		0.066	
Elementary occupations	0.168		0.299	
Madeira	0.088		0.060	
Norte	0.199		0.172	
Centro	0.216		0.238	
Lisboa e Vale do Tejo	0.124		0.096	
Alentejo	0.104		0.110	

Algarve	0.138	0.150
Year=1998	0.342	0.317
Year=1999	0.341	0.345
N	10605	1642

Table 1 - T-tests for the equality of means on reported job satisfaction between low and higher paid workers

	Mean	Std.Dev.	N	DF	t-Statistic	P-value
1.Pooled Sample						
Higher pay	3.073	0.846	10605	2041	16.01	0.00
Low pay	2.666	0.975	1642			
2.Year=1997						
Higher pay	2.990	0.861	3364	697	10.06	0.00
Low pay	2.540	0.993	554			
3.Year=1998						
Higher pay	3.103	0.850	3626	641	7.51	0.00
Low pay	2.768	0.968	521			
4.Year=1999						
Higher pay	3.121	0.823	3615	705	10.03	0.00
Low pay	2.697	0.953	567			

Table 2 - Ordered Probit Random Effects Estimation

	Higher pay			Low Pay		
	Coeff.	Std. Error		Coeff.	Std. Error	
Constant	-3,731	0,670	*	-1,570	1,487	
Log hourly wage	0,651	0,048	*	0,207	0,130	
Log hours	0,673	0,107	*	0,742	0,200	*
Age	-0,033	0,009	*	-0,050	0,020	**
Age squared/100	0,035	0,010	*	0,061	0,024	*
Gender(male)	-0,044	0,037		-0,074	0,109	
Education > secondary	0,021	0,047		0,005	0,157	
Overskilled	-0,129	0,030	*	-0,353	0,084	*
Married	0,010	0,036		0,120	0,099	
Good health	0,054	0,031	***	0,073	0,092	
Health care provided by employer	0,090	0,041	**	0,273	0,219	
Permanent contract	0,317	0,037	*	0,322	0,083	*
Employer provides subsidized housing	0,180	0,080	**	-0,015	0,264	
Full time Job	0,370	0,107	*	0,088	0,213	
Public sector	0,297	0,041	*	0,027	0,253	
Workplace size 5-19	0,055	0,041		-0,005	0,094	
Workplace size 20-49	0,058	0,049		-0,125	0,162	
Workplace size 50-99	0,130	0,055	**	-0,294	0,190	
Workplace size 100 plus	0,174	0,052	*	0,280	0,264	
Services	0,078	0,040	**	0,236	0,123	***
Professionals	0,016	0,129		0,741	0,758	
Technicians	0,039	0,131		0,754	0,818	
Clerks	-0,128	0,132		0,538	0,690	
Service workers and salers	-0,047	0,133		0,421	0,644	
Agriculture and fishing	-0,404	0,158	**	0,236	0,657	
Craft and related trades workers	-0,257	0,133	***	0,496	0,652	
Plant and machine operators	-0,159	0,134		0,275	0,669	
Elementary occupations	-0,442	0,134	*	0,056	0,646	
Madeira	-0,520	0,099	*	-0,610	0,254	**
Norte	-0,691	0,063	*	-0,593	0,161	*
Centro	-0,860	0,062	*	-0,532	0,139	*
Lisboa e Vale do Tejo	-0,702	0,062	*	-0,661	0,149	*
Alentejo	-0,763	0,071	*	-0,364	0,161	**
Algarve	-0,561	0,068	*	-0,365	0,150	**
Year=1998	0,178	0,030	*	0,322	0,081	*
Year=1999	0,138	0,030	*	0,214	0,084	**
[1]	0,828	0,040	*	1,198	0,100	*
	1,986	0,045	*	2,473	0,115	*

	4,380	0,049	*	4,724	0,154	*
	6,016	0,058	*	5,539	0,177	*
Sigma	0,920	0,020	*	0,969	0,066	*
Log-L	-11216			-2023		
Chi-Squared	1177			108		
N	10605			1642		

* significant at the 1% level ** significant at the 5% level *** significant at the 10% level

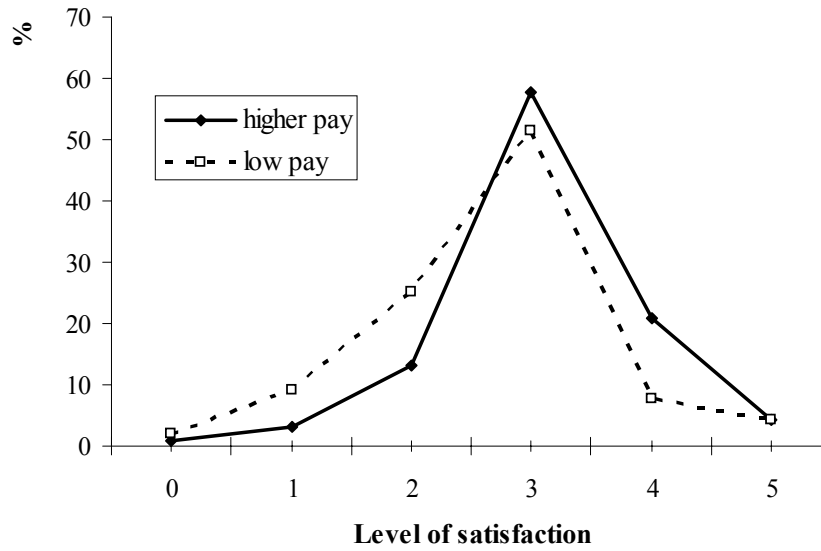**Figure 1 - The distribution of Job satisfaction (pooled sample)**

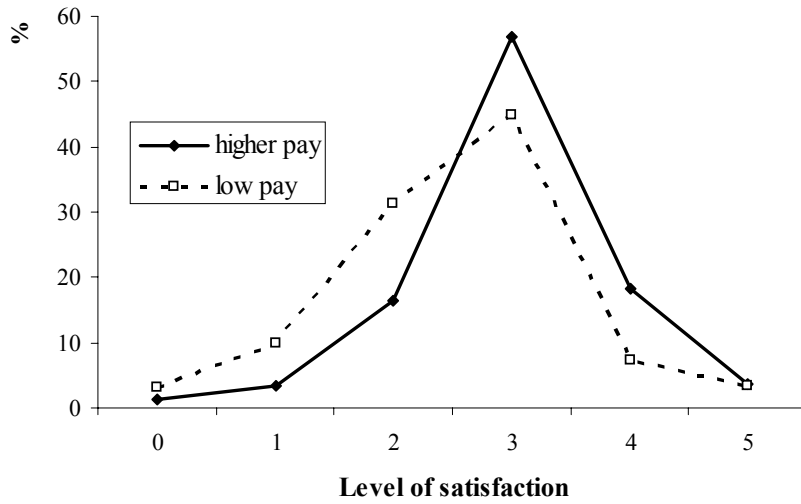**Figure 2 - The distribution of Job satisfaction (1997)**
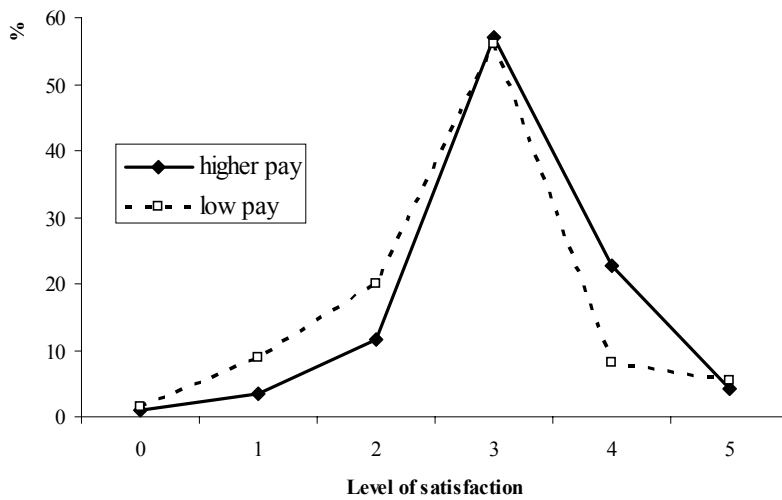

Figure 3 - The distribution of Job satisfaction (1998)

Figure 4 - The distribution of Job satisfaction (1999)