Job satisfaction as an indicator of the quality of work

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Abstract

This paper studies the relation between the characteristics of the job performed and the level of subjective satisfaction of workers. In other words: whether job satisfaction reflects the characteristics of jobs, and therefore, can be used as an indicator of job quality. Two different approaches are followed. First, using the *International Social Survey Program* of 1997 we explored whether differences between countries in job satisfaction can be explained by variables usually considered to be related to job quality, such as working hours, wages, etc. Second, we studied the relationship between certain objective measures of job quality and job satisfaction in a given country, using Spain as a case study. In both cases the results do not support the use of job satisfaction as a measure of job quality. Finally, we discuss the different processes that could explain the coexistence of wide variations in job quality with high overall levels of job satisfaction.
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1. Introduction

The last decade has witnessed a renewed interest among economists and other social scientists in studying the socio-economic determinants of happiness. The creation of the Journal of Happiness Studies, the choice of the issue of happiness by Richard Layard as the theme for the 2002/3 Lionel Robbins Memorial Lecture, or Frey and Stutzer's (2002) paper

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in the Journal of Economic Literature are just three examples of this renewed interest. Within this general area of analysis, this paper focuses on the measure of happiness, or satisfaction as it is usually referred to in the literature, in one of the most important components of human life: work. In the paper, the relation between different variables measuring working conditions and job satisfaction is studied, with the aim of testing the adequacy of using job satisfaction as an indicator of the quality of work. The idea is quite simple: first, instead of relying on one particular theory or model for defining the quality of work, we take into consideration the most important variables used in different models. Then we try to relate these indicators to job satisfaction. As our model incorporates the most important indicators used in different approaches, the lack of a clear relationship between these indicators and job satisfaction can be interpreted in terms of the inadequacy of the level of job satisfaction as an indicator of job quality. This will be the argument that will be developed and defended throughout the paper. First, using information on 23 countries from the 1997 International Social Survey Program (ISSP) questionnaire on Work Orientations, we investigate the level of disparity of job satisfaction in these countries and its relation to objective variables of work quality. Subsequently, using the Survey on Quality of Life at Work (ECVT) of 2000, an analysis is made of whether job satisfaction is related to objective indicators of work quality in Spain. Inasmuch as the conclusions reached in the previous sections do not support the existence of a strong association between job satisfaction and its objective conditions, in the third section the reasons that may explain this result are explored. Finally, in the fourth section the main conclusions reached are summarised and new possibilities for research are posed, based on the results obtained.

2. Differences between countries in job satisfaction indicators

Probably, the most revealing fact in the comparison of levels of job satisfaction in the 23 countries reflected in Fig. 1 is the very scant difference in the mean level of job satisfaction. Thus the country where the workers show a higher index of job satisfaction, Denmark, with a value of 5.69 on a scale of 1–7, is only 9% above the mean value, whereas, at the other end, the country with the lowest index of satisfaction, Hungary, is only 8 points below the mean (Fig. 2). The fact that this difference is so small is particularly striking when we consider that the sample of countries includes highly developed economies, both in economic and social terms, where the workers not only have high salaries but also high levels of social benefits and good working conditions, and others, such as Russia or Bulgaria, in the midst of a serious crisis of transformation and with low income levels and working conditions that are not only poor but have also deteriorated with respect to past reference. To give an example, in Russia, with a job satisfaction index 15% lower than that of Denmark (and 7% lower than the average), between 1994 and 1998, that is, in the period during which the ISSP survey was made, according to the estimations of Desai and Idson (2001), the percentage of workers who did not receive their salaries on time increased from 30 to 54%, whereas the volume of arrears went from around one month's pay to over three months. At the same time, 1990–1997, actual salaries in the manufacturing sector dropped over 60%. Although these conditions are not at all favourable, they do not seem to be reflected in the indicator of job satisfaction.
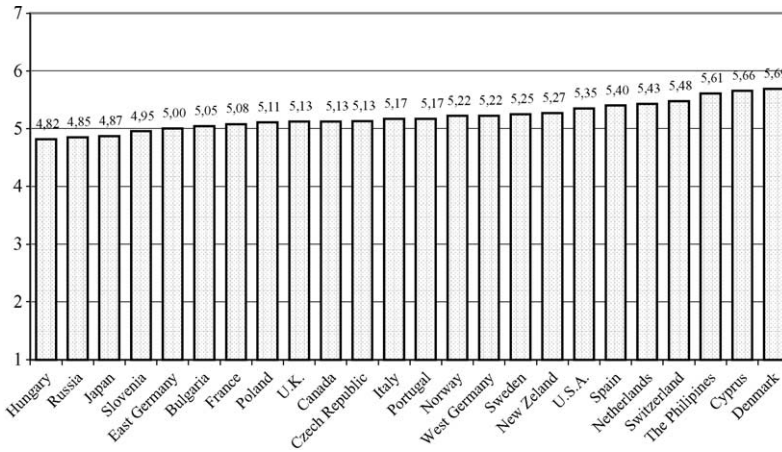
Fig. 1. Mean job satisfaction (scale 0–7). Source: authors' analysis of ISSP (1997) data.

In second place, also striking is the high mean value of the satisfaction index, 5.21, which would be equal to 7.45 on a scale of 1–10. Hence, with the results of the survey the only possible conclusion would be that the citizens of these 23 countries are relatively satisfied with their jobs. As we shall see in the next section, this result also appears in the national surveys on quality of work. Although the low variability of the job satisfaction index detracts significance from the possible explanations of these differences, we have explored the possible relation existing between this indicator and variables traditionally considered important when explaining job satisfaction. This procedure, at the same time, has the advantage of allowing us to contrast in greater detail the scant difference between the job satisfaction indicators in the presence of much more important differences in variables that, in principle, should be associated with this one. Specifically, the variables considered are: unemployment rate, index of overwork, level of income, salary behaviour, increase
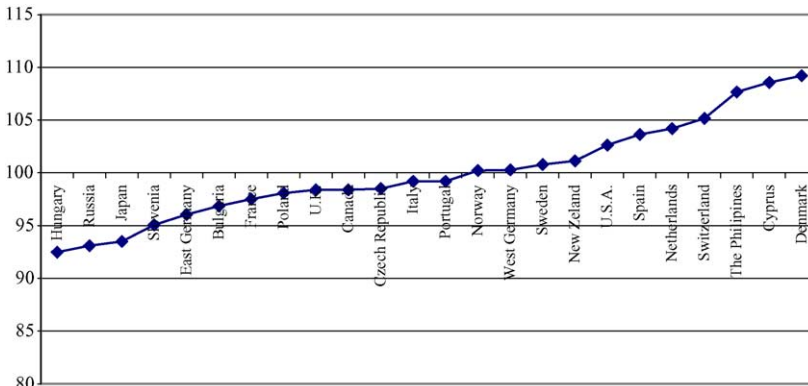

Fig. 2. Job satisfaction with respect to the mean. Source: authors' analysis of ISSP (1997) data.
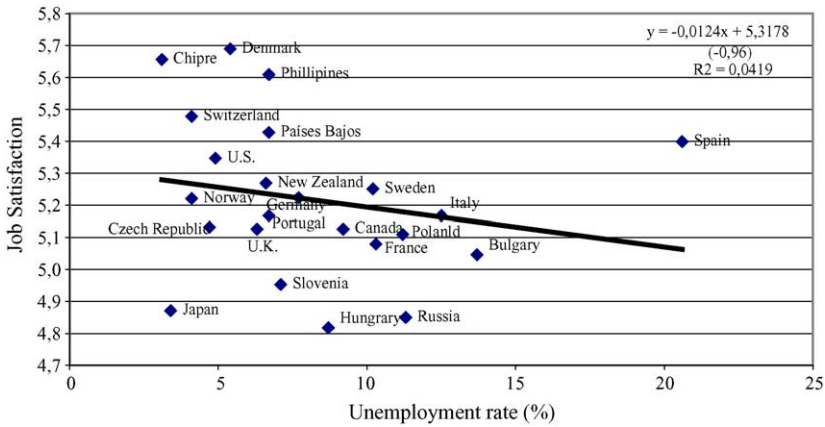
Fig. 3. Job Satisfaction and unemployment rates. Source: authors' analysis of KILM (2001–2002) and ISSP (1997) data.

in salaries, and distribution of income. The results show an amazingly weak explanatory capacity of these variables when explaining differences in job satisfaction between countries, and are not significant in any of the cases.

Of all the variables chosen, the unemployment rate is the one that theoretically maintains the most ambiguous relation with job satisfaction. Thus, the existence of unemployment could be thought to make individuals more satisfied with their work, whatever its characteristics, inasmuch as the alternative, being unemployed, would be worse; hence one would expect a direct relation between unemployment and satisfaction. However, it is also possible that the less unemployment there is, the greater the workers' capacity to negotiate better working conditions and, at the same time, the greater the probability of finding a job fitted to their preferences; hence the relation between unemployment and satisfaction would be of an inverse type. As can be seen in Fig. 3, the result does not endorse either of these two possibilities, there being no systematic relation between the two variables; this could mean that the two effects compensate each other. The index of overwork, defined as the rate of working population with over 40 h of work per week, ought to be negatively associated with job satisfaction, if we assume that the longer the working day, the higher the level of tiredness associated with it and at the same time the greater the pressure on the workers when it comes to combining their working life and their family or social life.[1] As is shown in Fig. 4, in this case there does seem to be a negative relation between the two variables, even if it is extremely weak. If we take the GDP per capita as a proxy variable of average salaries, one might expect that, inasmuch as one of the factors that defines a good job (even

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[1] It could be argued that people may enjoy working long hours. The neologism "workaholic" in fact reflects this possibility. Still, we believe that according to a number of studies on the subject performed, among other institution, by the European Foundation for the Improvement of Living and Working Conditions, it is reasonably safe to defend that, in general, and above a socially determined working time and income level, longer hours are not preferred by the workers. From a different approach, the long term decreasing trend in working time from more than 3000 h one century ago to slightly over half that number nowadays can also be interpreted in terms of workers preference for shorter and not longer working hours.
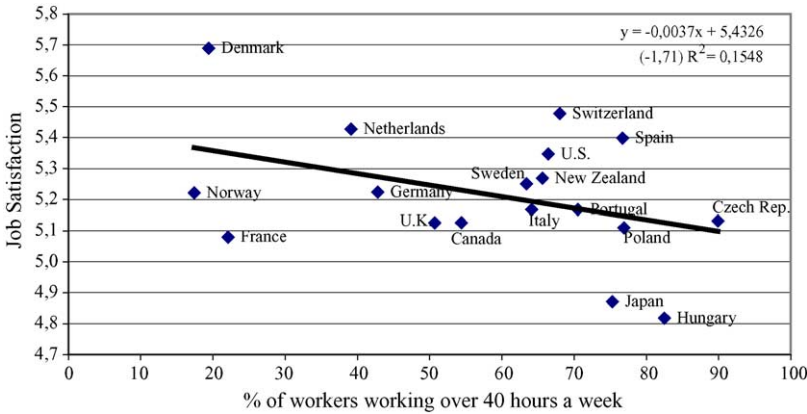
Fig. 4. Job satisfaction and overwork. Source: authors' analysis of KILM (2001–2002) and ISSP (1997) data.

if it is not the most important one) is salary, the relation between job satisfaction and GDP per capita would be positive. However, as can be seen in Fig. 5, the link between both variables, although positive, is extremely weak, hence one would have to conclude that neither is there any relation between level of income and job satisfaction. This conclusion is in any case consistent with the results obtained in the studies of the economic determinants of happiness, which would be the equivalent of the indicator of job satisfaction in the overall sphere of the individual. Thus, according to the studies by Kenny (1999), the happiness declared in Japan remained stable between 1958 and 1988, whereas the GDP per capita in real terms increased five-fold, a result also observed in the USA, where during the period 1952–1989, while the GDP per capita doubled, subjective happiness dropped 0.2 points on a scale of 1–3. From these and other studies (Esteve, 2000) it can be concluded that after a certain income threshold, which Inglehart (1996) situated at $6000 per capita in 1991, increases in income do not generate subjective happiness.
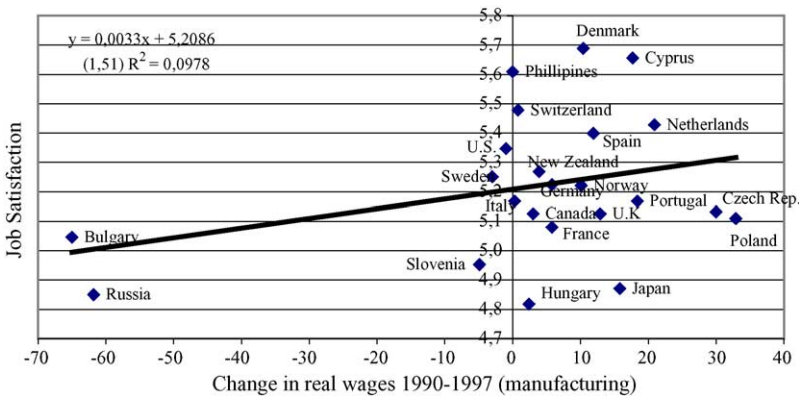

Fig. 5. Job satisfaction and real wages. Source: authors' analysis of ISSP (1997) and KILM (2001–2002) data.
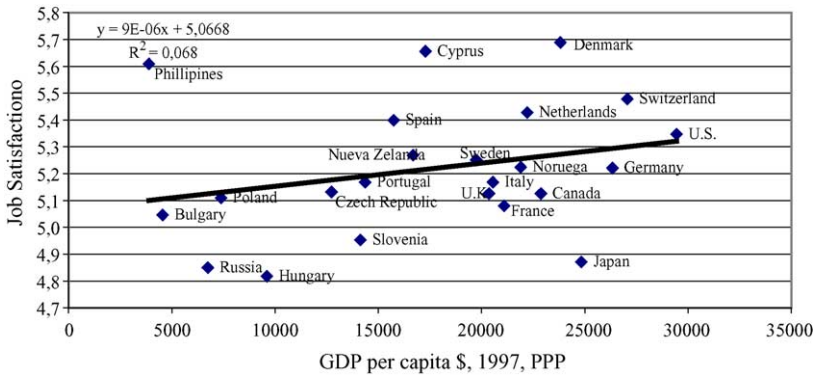
Fig. 6. Job satisfaction and GDP per capita in PPP (1997). Source: authors' analysis of KILM (2001–2002) and ISSP (1997) data.

   The penultimate variable considered in our exploration of the determinants of job satisfaction is the increase in salary experienced in recent years (specifically, the increase in real salaries in the manufacturing sector during the period 1990–1997), as an indicator of progress. In principle, once again one might expect a positive relation between this variable and the index of satisfaction, so that those countries with greater salary increase, since they have experienced an improvement in the quality of their jobs (salary can be considered one of the components of this quality), should show greater satisfaction. Once again, as can be seen in Fig. 6, the relation, although positive, is surprisingly weak, it being especially striking that plummeting salaries in Bulgaria and Russia have not made job satisfaction lower than it is. This absence of relation between changes in salary and job satisfaction could be related to the greater importance of relative considerations for the subjects, that is, their position on the salary scale, rather than the absolute behaviour of the salaries. If this is so, the absolute changes that were not accompanied by changes in distribution would not cause appreciable changes in the index of satisfaction.

   Finally, and with the aim of including the distributive aspects we referred to before, the relation existing between job satisfaction and income distribution (Gini index), taken here as a proxy variable of salary distribution, is explored. In this case, the results are strongly conditioned by the relatively low level of inequality in some of the countries in our sample that formerly had planned economies (Slovenia, Hungary) and of Japan, giving a positive relation between the two variables which, however, and the same as in the other cases, is extremely weak.[2] Neither is any relation observed between income distribution and the

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[2] According to Hamermesh (1999), job satisfaction would respond to changes in salary distribution rather than their absolute levels of inequality, and this only in the short term, in which case, and given the generalized increase in market inequality experienced in the 90s (not in the final income distribution, where this increase is much more limited, Arjona et al., 2001) a drop in the levels of job satisfaction would have to be expected. Comparison of the 1989 and 1997 ISPP surveys on attitude with respect to work show a certain drop in the percentage of totally satisfied workers in Germany and Norway, in both cases, countries with a clear deterioration in income distribution, although the same tendency is seen in the United Kingdom, USA and The Netherlands, without, however, lowering the indices of satisfaction. In any case, since we are working with mean values, these changes could be masked

dispersal, as reflected in the standard deviation, of the values of job satisfaction in each country. It is important to point out that, in order to allow identification of the different countries a very small scale has been adopted on the axis corresponding to job satisfaction (4, 8–5, when the possible scale is 0–7), which only incorporates 13% of the maximum difference. The option in favour of a broader scale would make the functions appear almost as a horizontal line.

These results lead us to postulate, contrary to what has been defended by other authors such as Sousa-Pouza and Sousa-Pouza (2000) or Spector (1997),[3] the following conclusions: (1) there are no significant differences between countries in the indicators of job satisfaction, (2) the scarce differences between countries in the job satisfaction indicators do not correspond to the strong differences existing in objective variables which, in principle, should be associated with job satisfaction, (3) from the above it follows that job satisfaction is not an adequate indicator for measuring differences in quality of work, at least in a cross analysis.

3. Differences in job satisfaction indicators among workers in the same country: the case of Spain

In the previous section we saw how differences in job satisfaction between countries were much smaller than the differences in working conditions and the rewards associated with the job according to a series of chosen indicators. Hence, we deduced that in a first approach it did not seem that, in a comparative analysis between countries, the indicator of job satisfaction was a good proxy variable for quality of work. Another way of contrasting the adequacy or inadequacy of job satisfaction as an indicator of work quality is to compare whether the differences in job satisfaction within the same country are associated with objective differences in working conditions. In principle, if we wonder why job satisfaction in different types of jobs in the same country should vary, the answer seems obvious: jobs are really quite different as regards conditions and quality, and it seems reasonable that this should affect job satisfaction. This is the sense in which job satisfaction is sometimes used as an indicator of job quality.

However, the relation between job quality and job satisfaction is not so simple. This relation is affected by a third element, the worker's expectations. Two workers with jobs of identical objective characteristics may show radically different satisfaction with their job if

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in the aggregate analysis. This would not be the case of the changes in functional income distribution which, since they affect all the workers, would be fully manifested (if they affect job satisfaction) in the mean values of satisfaction. The eighties and nineties witnessed, both in the US and in Europe, a drop in the share of total wages in relation to total income which must have negatively affected job satisfaction.

[3] Spector (1997), taking as a basis different comparative analyses of job satisfaction concluded that it seems probable that the differences in job satisfaction between countries are real. He specifically refers to four countries, the Dominican Republic, Hong Kong, Singapore and the US, with satisfaction values that range from 133.3 in the case of Hong Kong to 160.9 in the Dominican Republic. On our scale of 1–7 this difference would become 4.3 versus 5.2, values within the range of those reached for the same variable in the ISSP survey. Sousa-Pouza and Sousa-Pouza (2000), working on the same ISSP survey, consider the differences sufficiently significant to embark upon a complex psychological model in which job satisfaction is the result of the relation existing between what the worker puts into the job and what he/she gets out of it.

their expectations are different. For one, the job may entail a decrease in status or a source of frustration if he/she expected to have a better valued job, whereas for the other, who perhaps had very low expectations owing to a lower level of education or other reasons, the same job may be highly satisfactory.

Job satisfaction does not only depend on the quality of the employment, but also on the worker's expectations with respect to the job. The key to job satisfaction is, in fact, in the fit between the objective conditions of the job and the worker's expectations. The better the fit between expectations and job reality, the greater the satisfaction and vice versa.[4] This is how it is posed in the main theories developed on job satisfaction by the social psychologists, who are those that have worked most on this subject (the classic theories are those of Locke (1976) and Lawler (1973)).

Going back to the question we started with, job satisfaction will vary (a priori) according to job quality, but with the level of expectations constant. That is, on the same level of expectations, job satisfaction will be determined (at least in part) by the objective quality of the job. Can this model be contrasted by means of the analysis of the data from surveys? Certainly, it is difficult to measure both job quality and workers' expectations with a questionnaire, but it is possible to make reasonable proxies, as is usually done in studies of determinants of job satisfaction. Wages, safety, flexibility of timetable, etc. are used as indicators of job quality, whereas sociodemographic indicators such as age, sex or education are used as proxies to job expectations. Although the causal mechanism of the relation between the sociodemographic characteristics of the worker and job satisfaction is not always made clear, it can be no other than the relation between these sociodemographic characteristics and job expectations.

There is abundant literature, especially in social psychology, which attempts to relate job satisfaction with different qualitative aspects of the job, such as autonomy (Spector, 1997, p. 31), stress (idem, p. 42), usefulness of the work (Manglione and Quinn, 1975), etc. These studies have usually found an important degree of correlation between characteristics of the job and job satisfaction. Nevertheless, this type of study usually has a serious starting problem which casts doubt on the reliability of its results. Most of the qualitative indicators used on job characteristics are based on the worker's own evaluation, and it is very likely that the evaluation made by the worker of his/her job may be affected by the degree of job satisfaction. The degree of correlation found between these indicators and job satisfaction does not necessarily have to involve a causal relation, but may very likely be merely due to the fact that they are two ways of measuring the same thing. In order to avoid this problem it is necessary to use (as has been done in this paper) indicators of job quality not "contaminated" by the worker's subjectivity.

When indicators that are less problematic in this sense are used, such as salary, sector, size of firm or job stability (Clark and Oswald, 1996; Brown and McIntosh, 1998; García

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[4] The concept of fit is useful because it makes job satisfaction depend not merely on two magnitudes (expectations and reality), but on the *relation* between these two magnitudes. It is not, however, free from problems, hence some explanation is necessary. The fit between expectations and job quality produces satisfaction. But, does all lack of fit cause dissatisfaction? Evidently not. Dissatisfaction occurs when the reality of the job is below the worker's expectations, but not when it is higher. Therefore, throughout this text we refer to an *asymmetric* concept of fit/lack of fit, and not to its literal sense.

Mainar, 1999), the correlations are usually very low and the results not very conclusive. Indeed, in different studies opposing relations are often found between a certain indicator and job satisfaction. Spector, in an extensive review of the bibliography on the determinants of job satisfaction, found a pronounced inconsistency among the results of different studies on salaries, work load and organization of work time (Spector, 1997, pp. 42–46).

Something similar occurs with the studies on the effects of the indicators of job expectations on satisfaction. Despite the fact that many studies find statistically significant relations, these are usually very low and contradictory. For example, with respect to the effect of gender, Spector (1997) concludes that "when the results of different studies are combined with meta-analysis, the mean correlations tend to be almost zero over dozens of studies and thousands of pollsters" (p. 28). Age and level of education, habitual indicators of job expectations, present almost identical problems.

All these problems seem to bring into doubt the validity of the analytic model presented above, according to which the worker's satisfaction depended on the degree of fit between the worker's expectations and job quality. In the following pages we shall attempt to confirm for ourselves the validity of this model, through an empirical analysis of the determinants of job satisfaction in Spain. For this purpose we shall use data from the 2000 Survey on Quality of Life at Work, a survey carried out on 6000 workers by the Ministry of Labour and Social Affairs, and designed for studying the quality of working life through many indicators. We shall work with a sub-sample of 4323 wage earners. The variable we are going to study in depth (as a dependent variable) is, of course, job satisfaction, measured by means of the following question: "Speaking of job satisfaction in general, could you situate on this scale, where 1 is very dissatisfied and 10 is very satisfied, how satisfied you are with your job?" As regards independent variables, we shall use all the usual variables in the literature to this respect, as well as some others that we have considered convenient for the analysis. Following the master lines of the model posed before, the variables are divided into two groups: those indicating job quality and those that are proxies of the expectations with respect to the job (Table 1). We shall attempt to make a multiple regression model with analysis of variance (ANOVA), with a view to explaining the maximum possible variance of job satisfaction, using as many independent variables as necessary.

Let us begin by analysing the dependent variable of the model, job satisfaction. Table 2 gives the distribution of this variable expressed in three different ways: tabulated, with summarized measurements and by graphic representation. All three ways show a strikingly high mean value, i.e., very high job satisfaction in Spain. The arithmetical mean is 7 out of

Table 1
Independent variables

Indicators of job quality	Indicators of job expectations
(1) Salary	(1) Age
(2) Team work	(2) Sex
(3) Type of contract	(3) Education
(4) Public or private sector	(4) Experience of unemployment
(5) Length of service	
(6) Social class according to E.O. Wright[a]	
(7) Size of the work place	

[a] The model proposed by Erik Olin Wright in Wright (1997) was followed.

Table 2
Distribution of job satisfaction

Job Satisfaction

	Frequency	Percentage	Accumulated	Summarized measurements	
Very dissatisfied 1	70	1.62	1.62		
2	53	1.23	2.85	Quartile 1 (25%)	6
3	89	2.06	4.9	Quartile 2 (median)	7
4	187	4.33	9.23	Quartile 3 (75%)	8
5	487	11.27	20.5		
6	583	13.49	33.98	Mean	7.04
7	799	18.48	52.46	Standard deviation	1.93
8	1221	28.24	80.71	Symmetry	−0.73
9	405	9.37	90.08	Summary	3.56
Very satisfied 10	429	9.92	100		
Total	4323	100			
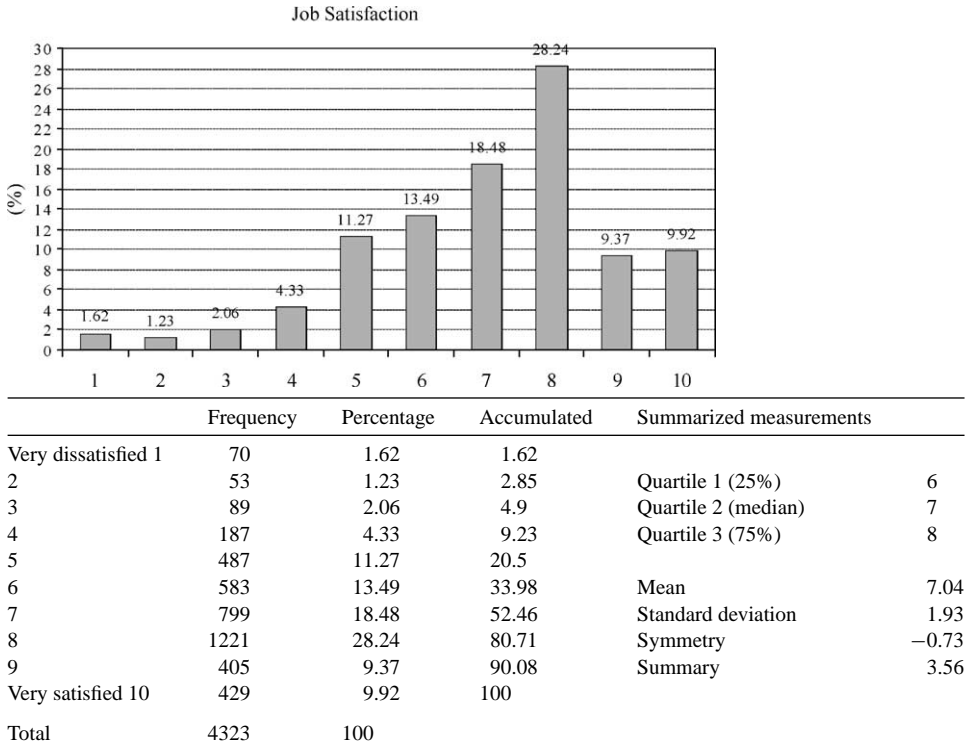
10. The most frequent value is 8, and the percentage of people situated below 5 (a value that represents "satisfactory" in our school culture) does not reach 10%. Indeed, almost half of those surveyed are situated in the three highest values (8, 9 and 10).

Looking at the results given in Table 2 it seems that, to start with, and without need for further analyses, variability in job satisfaction in Spain is very low. Basically, because almost everybody is satisfied, or even very satisfied, with their job. This in itself shows that job satisfaction is not a very good indicator of job quality—no matter how optimistic we may be with respect to job quality in Spain, it does not seem to agree with these levels of job satisfaction.

In any case, let us see if we can explain what this (little) variability in job satisfaction is related to. Table 3 gives the mean values of job satisfaction for the different categories of indicators of job quality.[5] Once again the high mean values are striking, as is the scant variability. For none of the variables does the difference between the highest and lowest

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[5] As we mentioned in Section 1, we do not rely on any particular theory or definition of the quality of work. Instead, our approach is quite pragmatic: we simply consider many different indicators which, no matter what our definition of job quality is, should be related to it in some way or another. In other words: if job satisfaction has no substantial relation to any of the variables shown in Table 1, it seems very difficult to say that it somehow reflects the quality of work, defined in any possible way.

Table 3
Indicators of job quality (bivariate relations)

Independent variable		Satisfaction mean	N
Salary	Up to 45,000 per month	6.0	80
	From 45,001 to 75,000	6.34	192
	From 75,001 to 100,000	6.48	435
	From 100,001 to 150,000	6.86	1281
	From 150,001 to 200,000	7.4	934
	From 200,001 to 275,000	7.49	514
	From 275,001 to 300,000	7.55	99
	From 300,001 to 350,000	7.57	65
	From 350,001 to 450,000	7.42	48
	More than 450,000	7.43	26
	ANOVA significance: 0.0000, R^2: 0.0475		
Team work	Group work with autonomy	7.31	2082
	Group work without without autonomy	6.4	745
	Does not work in group	6.9	1496
	ANOVA significance: 0.0000, R^2: 0.0290		
Type of contract	Permanent	7.2	3084
	Temporary	6.69	1180
	ANOVA significance: 0.0000, R^2: 0.0143		
Sector	Public sector	7.47	1009
	Private sector	6.9	3314
	ANOVA significance: 0.0000, R^2: 0.0158		
Length of service (linear regression)	Increase in satisfaction increasing service one year (b)	0.02	$P > \lvert t \rvert = 0.000$
	Constant	6.86	$P > \lvert t \rvert = 0.000$
	Model significance: 0.0000, R^2: 0.0087		
Social class according to E.O. Wright	Expert managers	7.73	382
	Non-expert managers	7.43	128
	Experts	7.17	1548
	Workers	6.81	2205
	ANOVA significance: 0.0000, R^2: 0.0216		
Size of firm	1–9 employees	6.88	1141
	10–25 employees	7.13	778
	26–99 employees	7.1	758
	Over 100 employees	7.03	1091
	ANOVA significance: 0.2369, R^2: 0.0026		

satisfaction reach two points out of ten, even when comparing the most extreme categories. For example, income, which has the greatest relation to job satisfaction ($r^2 = 0.05$), only varies from 6.0 in the group declaring wages below 45,000 pesetas per month to 7.43 for the group with an income of over 450,000 pesetas per month. The comparison of the enormous difference between these two groups with respect to income (over 1000%) and the very small difference with respect to job satisfaction (which does not reach 20%) is surprising.

Table 4
Indicators of job expectations (bivariate relations)

Independent variable		Satisfaction mean	N
Age	16–29	6.85	1125
	30–49	7.02	2459
	50–64	7.36	726
	65 and over	6.37	13
	ANOVA significance: 0.0000, R^2: 0.0079		
Sex	Man	7.05	2831
	Woman	6.99	1492
	ANOVA significance: 0.3860, R^2: 0.0002		
Education	Less than primary	6.45	159
	Primary	6.88	667
	Secondary	6.99	2465
	Universitary	7.33	951
	ANOVA significance: 0.0000, R^2: 0.0097		
Experience of unemployment	No experience of unemployment	7.21	2628
	With experience of unemployment	6.78	1461
	ANOVA significance: 0.0000, R^2: 0.0115		

It must also be taken into account that, since they are the most extreme categories, there are few cases and estimation is not very reliable. If we look at categories of income with more cases, which provide a better estimation of the satisfaction mean, the differences are even less important.

For all the other variables the differences are smaller. Especially striking is the case of type of contract, since stability in the job appears in the literature as the most important determinant of job satisfaction in Spain (García Mainar, 1999, p. 125). The difference between job satisfaction in workers with a permanent contract and workers with a temporary contract is 0.52 out of 10. Taking into account the tremendous differences as regards work stability and working conditions in general between workers with permanent and temporary contracts,[6] this difference of 0.52 points out of 10, with very high mean values in both cases, is at least surprising.

Table 4 gives the sociodemographic variables most used for explaining variability in job satisfaction. The same as in the case of the indicators of job quality, our data show very low variability. Level of education has the greatest relation to job satisfaction, but even so it only explains 1% of its variance. Age shows a significant, but even smaller, relation, and sex shows no significant relation at all with job satisfaction.

To sum up, the bivariate relations indicate that there is really very little difference as regards job satisfaction between different categories of jobs and workers. However, according to what we had posed in the model, variability in job satisfaction is not in itself due to either the objective quality of the job or to the worker's expectations, but rather to the degree of fit of both factors. Empirical analysis of variability of job satisfaction will, therefore,

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[6] To give an example, according to the 1995 Wage Structure Survey, the mean of temporary workers had annual salaries equivalent to 44.8% of the wage income of workers with permanent contracts.

Table 5
Multivariable model (ANOVA)

		Job satisfaction	Test t
Income	Below 45,000 ptas./month	−1.204	(3.78)[**]
	45,000–75,000 ptas./month	−1.121	(4.85)[**]
	75.000–100,000 ptas./month	−0.83	(5.96)[**]
	100,000–150,000 ptas./month	−0.487	(5.86)[**]
	Over 150,000 ptas./month	Reference category	
	Wald test: $Pr > F = 0.0000$		
Group work	Group work with autonomy	0.412	(4.89)[**]
	Group work without autonomy	−0.39	(3.12)[**]
	Does not work in group	Reference category	
	Wald test: $Pr > F = 0.0000$		
Sector	Public sector	0.328	(3.56)[**]
	Private sector	Reference category	
	Wald test: $Pr > F = 0.0004$		
Expereince of unemployment	No experience of unemployment	0.3	(3.81)[**]
	With experience of unemployment	Reference category	
	Wald test: $Pr > F = 0.0001$		
Sex	Woman	0.232	(2.65)[**]
	Man	Reference category	
	Wald test: $Pr > F = 0.0081$		
Size of work place	1–9 employees	0.269	(2.61)[**]
	10–25 employees	0.406	(3.81)[**]
	26–99 employees	0.335	(3.19)[**]
	Over 100 employees	Reference category	
	Wald test: $Pr > F = 0.0006$		
	Constant	6.649	(57.63)[**]
	Observations	3111	
	R-square	0.085	

Absoute value of t-test in brackets.
[**] Significant at 1%.

require the construction of a multivariable model which allows us to include the effects of both factors simultaneously, with one controlling for the other and thus better explaining (a priori) the dependent variable. The appropriate statistical technique for this case is multiple analysis of variance (ANOVA), designed for working with multiple categorical independent variables and a dependent variable of a quantitative type, as is the case (Table 5).

We built the model by steps, introducing all the variables considered in Table 1 and selecting for the final model all those that added explanatory capacity to the model, with no other restriction than that of seeking to explain the maximum variability possible. After the selection process, the resulting model is the one given in Table 5. This model is the one that, with the variables we took as a basis, makes it possible to explain a greater degree of variability in job satisfaction. As can be seen, we only manage to explain 8.5% of the variation in job satisfaction, a quite disappointing result when we take into account the number of variables considered and the fact that the initial objective was to obtain the greatest r^2 possible. It is striking that variables which a priori seemed important for the issue

we are dealing with remain outside the model, especially those of contract and age, which do not add any prediction capacity to the model in Table 5. This implies that these variables do not significantly affect job satisfaction when we control for the variables included in Table 5. Neither did the education variable enter into the final equation, despite the fact that at first it seemed to have some relation to job satisfaction. The variables that do enter the model are: monthly income for the job, team work with and without autonomy, public or private sector, experience of unemployment, sex and size of the work place. The model is statistically significant, as are all the regression parameters. It is a multiple regression ANOVA model, in which the independent variables are categorical; hence, in the model, for each variable there are as many parameters as categories of the variable minus one, which is the parameter that remains as reference represented in the constant. Thus, the constant represents the value that the dependent variable takes for an individual in all the reference categories. The predicted satisfaction for a person earning over 150,000 pesetas, who does not work in a group, who works in the private sector, who has some experience of unemployment, is a man and has more than 100 workmates at the work place would be 6.65 according to our model. In order to change the value of one or several of the independent variables, it is only necessary to add or subtract the corresponding coefficient. For example, a person with the same characteristics in everything but with income below 45,000 pesetas would be 1.2 less satisfied (that is, his/her job satisfaction would be 5.45) than the "reference individual" represented in the constant.

The variable most related to job satisfaction is level of income. Also striking is the importance of team work,[7] of experience of unemployment and of size of the firm, variables which have not been taken into account so much in other models and which appear here with greater relevance than education or age, traditionally considered very important. Two variables that have a significant relation with job satifaction and which usually appear in other models are sex and work in the public or private sector. It is interesting to see how the effect of sex changes when other variables are controlled for, as in the model described (compare the effect of sex on satisfaction in Tables 4 and 5). This may show that, at aggregate level, men are more satisfied than women only because they have better jobs. But in a job of the same characteristics, according to our model women would be 0.23 more content than men on average.

The model given in Table 5 is statistically significant, and the results it shows seem to make sense; they go in the expected direction. But what really matters is not their significance on a statistical level, but on a substantive level, and in this sense the model raises serious doubts. Taking into account that it is a multiple regression ANOVA model with six independent variables, that these six variables were selected as the only relevant ones among 11 variables usually considered as the main determinants of job satisfaction, that, following a complex model for determining job satisfaction, both indicators of objective job quality

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[7] In the variable for team work, given that the level of autonomy of the team is asked for, there may be a job satisfaction "contamination" problem. This may explain why those who say they work in non-autonomous teams are those revealed as more dissatisfied with the job, more so than those who do not work in a team either with or without autonomy. In part, the fact that they say that they work in teams without autonomy may be due to a low level of job satisfaction and not vice versa, which is how it is implicitly considered in the model. If this were so, the explanatory capacity of the model would be even smaller.

and indicators constituting proxies to the workers' expectations have been introduced, then the fact that the model explains less than 9% ($r^2 = 0.085$) of the variability indicates that the social variability of job satisfaction has hardly any theoretical interest for the Social Sciences, since it is almost non-existent. The model in Table 5 shows individuals with radically different social and work situations, with steady and precarious jobs, with very high and very low salaries, with high and low levels of education, autonomy, etc. Taking into account all the differences existing in the working and life conditions included in the model, it is absurd to concentrate on the very small differences and not on the great similarities observed, even in complex models such as the one used. For once, attention must be drawn to the obvious, and the data must not be forced so that they give greater emphasis to differences that can really be ruled out: basically, all the groups of workers studied are fairly satisfied with their jobs, with small differences between some extreme cases. This result concides with the one we obtained from the comparative analysis of the differences in the indicators of satisfaction between countries.

4. A model of interpretation

The empirical analysis described in the two previous sections has shown that the variability of job satisfaction is surprisingly low and that, furthermore, the little variability there is bears practically no relation to any relevant social or economic variable. This is true both at aggregate level (as has been seen in the analysis of the differences in the mean levels of job satisfaction in different countries) and at individual level (as has been seen in the analysis of the differences in the job satisfaction of individuals with different types of employment and different job expectations, in the same country). How can these results be explained?

The analysis of job satisfaction carried out in the previous section was based on an analytical reflection in which, a priori, it was posed that job satisfaction should vary according to the fit between the objective characteristics of the job and the worker's expectations. Usually this fit is considered to vary significantly, which should be reflected in the existence of differences in job satisfaction. However, this is where we believe the problem lies, because it is very unlikely that there should be an important and lasting lack of fit between work expectations and the objective characteristics of the job. Let us explain why.

If the workers had an unchangeable level of work expectations and were arbitrarily assigned jobs also with unchangeable characteristics, there would undoubtedly be a variation in the fit of the jobs to the workers' expectations, and therefore there would be (a priori) variation in their levels of job satisfaction. Given that work expectations, the assigning of the jobs to workers and even the very characteristics of the jobs do vary and in fact tend to adjust to each other, the actual possibility of lasting variations in the fit and therefore in job satisfaction is very low. The lack of fit tends to disappear over time.

What are the mechanisms that make the level of expectations and the objective characteristics of the job tend to adapt? Basically we believe that there are two types:

(1) Expectations tend to adapt to objective conditions. For years, social psychologists have been studying psychological mechanisms (the best known theory to this respect is that

of cognitive dissonance[8]) that make people tend to adapt their expectations and even their perceptions of the environment to its actual conditions. It is a strategy of emotional survival, one might say: it is very difficult to maintain a conception of the world (or in this case, of work) that is too discordant with reality. If one cannot change things, one adapts.

(2) Moreover, the objective conditions also tend to adapt to expectations. Expectations are to a great extent the guidelines that orient the individual's action. People try to find jobs that fit their work expectations. Ultimately, if a person finds a job that does not fit his/her expectations and is not capable of changing his/her expectations, he/she will probably end up leaving it.

This means that, if the model is considered dynamically, it is very difficult to maintain the lack of fit that would cause variability in job satisfaction. There are several mechanisms that act as "filters", which successively hinder the permanence of such lack of fit. First, the person looks for a job in accordance with his/her expectations, which in itself eliminates many possible cases of lack of fit. Second, if a person has to accept a job that does not fit his/her expectations, he/she will tend to adjust the expectations to the job. Third, if the person passes the previous two filters (accepts a job not in accordance with expectations and cannot adjust his/her expectations to the job once in it), he/she will simply tend to leave it. Lack of fit would only occur when a person passes these three successive filters, when none of the mechanisms of fit work, which is highly unlikely, especially in the long term. If this "dynamic" model of fit is correct, there would be little variability in job satisfaction, within a relatively high general level of satisfaction.

We can, however, go a little further: to what extent is this (little) variability due to the objective quality of the job and the worker's expectations? Variability in satisfaction is due to the lack of fit between expectations and job quality. But, as we have said, there are counter-mechanisms to this lack of fit that tend to make it disappear. Hence, variability of fit will not depend so much in itself on job quality and on expectations, but rather on the effectiveness in each case (in each individual) of the working of the mechanisms of fit. Is the working of these mechanisms likely to depend on socially or economically relevant variables? This cannot be known with certainty a priori, but it seems likely that it is not. Actually, with the dynamic model of fit we leave the sphere of the sociological and economic and go right into the sphere of the psychological. The dynamic mechanisms of fit are largely psychological mechanisms that do not have to depend on social or economic issues: they are more likely to depend on individual factors such as personality, ability to adapt, etc. If this were so, job satisfaction would be a variable of little interest to sociology and economics, since it would not depend on social, *exogenous*, variables, but rather on subjective, *endogenous* processes and mechanisms.

5. Conclusions

In order to assess the information provided by the indicator of satisfaction, in this study two complementary approaches were adopted. On the one hand a study was made of whether

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[8] See Festinger (1957).

the differences in mean values of job satisfaction in a group of countries correspond to differences in other objective variables that may explain levels of job satisfaction, such as salaries, working day, unemployment or distribution. After that, an analysis was made of the existence of a relation between objective variables of job quality and levels of job satisfaction within the same country, specifically, in Spain, as reflected in the 2000 Survey on Quality of Life at Work. In both cases the unequivocal conclusion was that job satisfaction has no apparent relevant relation to other objective indicators of job quality, which makes this indicator of little adequacy for evaluating job quality.

The second conclusion obtained in this article is related, precisely, to the non-existence of a relation between objective job quality and levels of job satisfaction, and derives from reflection on the causes that could explain this result. Starting from the reasonable hypothesis that there are jobs of different categories, and hence they should be associated with a different level of satisfaction, in the article two response mechanisms are proposed for situations of discontent with work. The first would be to change jobs. Those who are not satisfied with their jobs will try to change it, and will try to do so as many times as necessary until they find a job that fits their expectations. Since people differ in their tastes, their idea of a good job can also be thought to be different; hence, at the end of the process, in a supposed equilibrium, different workers would end up in different jobs, with different objective characteristics, but in many cases with a high level of satisfaction. Obviously, not all the people can find the job that fits their expectations: the second response mechanism would act precisely in those situations, and would consist of reducing work expectations until they adapt to the type of job available. Since the concept of satisfaction is a relative concept, those workers in not very attractive jobs, but with few expectations as to their possibility of changing jobs, probably end up, even if only for the sake of mental health, lowering their expectations, and thus probably also increasing their declared level of job satisfaction. The existence of these two mechanisms of dynamic fit would explain the paradox of high levels of job satisfaction and a small range of variation between the maximum and minimum levels in a work context with pronounced objective differences in quality among the jobs.[9]

Inasmuch as a good indicator of job quality should be sensitive to those attributes that generally make one job be considered preferable to another, and given that the indicator of job satisfaction is an evaluative variable subject to different processes of fit, which cause the same job to be valued differently by different workers, it must be concluded that this indicator does not fulfil the minimum requisites and cannot therefore be used as a measure of job quality. If we ask each worker to evaluate his/her job, we shall have simply that, the evaluations that each worker, with his or her own criteria, make of their jobs. Such evaluations are comparable as evaluations, but not as indicators of job quality. Hence, if we wish to know not only the behaviour of the labour market in terms of number of people employed, but also the quality of the jobs created, we must resort to the always difficult task of constructing new indicators comprising job quality. This is a task in which the indicator of job satisfaction will be of little help.

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[9] These mechanisms of cognitive fit to the reality that one has to live probably explain the surprising lack of political effects of economic processes that slowly degrade living or work conditions, such as an increase in unemployment or a generalized deterioration in job quality, such as is occurring in recent years in most western countries, according to many analysts.

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