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"How does work management improve job satisfaction? Evidence from Spain"

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Abstract

Our purpose is to analyze the influence of organizational and psycho-social practices on job satisfaction in Spain. Our hypothesis maintains that modern businesses organize work providing greater well-being for the worker, with the understanding that requiring a more cooperative attitude from the worker generates greater productivity. Using data from the Survey on the Quality of Life on the Job, 2004, we select the determinants of job satisfaction. Our findings indicate that work appears to have intrinsic value, and that the variables related to human relationships, particularly, those corresponding to social and work relationships, have an influence on job satisfaction.

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1. Introduction

It is well-known that a high level of worker Job Satisfaction (JS from here on) has positive consequences for the individual and for the business environment. Economic theories explain JS in terms of socio-economic and demographic variables (Groot and van den Brink 1999; Belfield and Harris 2002; Donohue and Heywood 2004; Kaiser 2007; Verhofstadt et al. 2007). These variables indeed have a high predictive value, but their importance is modulated when control variables, related to other organizational aspects and derived from theories of Industrial Relations, including Human Resource Management, are introduced (Gaziolu and Tansels 2006; Rafferty and Griffin 2006).

Wood and de Menezes (2011) differentiate two approaches to the organization of work: that of Human Capital, emphasizing the abilities of agents, and that of Human Resource Management, highlighting aspects related to the involvement of agents. The latter, which we will follow in this paper, is derived from the model of industrial and labor relations characterized by the need to improve working conditions through negotiation and cooperation. Generally, theories of High Performance Work Systems (HPWS), such as the Resources and Capacities Theory (Hamel and Prahalad 1997), the Personnel Economics Theory (Lazear 1995), and the Strategic HRM Theory (McDuffie 1995; Ulrich and Brockbank 2005), all emphasize the advantages of forms of management that provide more initiative and decision-making power to employees, with this requiring more flexibility from them, in return for greater autonomy. This is known as Soft-Management, in contrast to Hard-Management, which is usually considered to generate job insecurity.

The above-cited High Performance Work Systems generate JS by producing innovative job management practices, and thus more “enriched jobs”. Thus, we follow the work management perspective, presented in Kochan and Ostermann (1995), Lawler et al. (1995), Ichniowski et al. (1996), Baron and Kreps (1999), Lawler and Mohrman (2003), Petrescu and Simmons (2008), Origo and Pagani (2008), and Hsu (2011), among others, according to whom we deal with practices such as autonomy, the worker’s ability to self-organize, flexibility in the organization of the job, communications within the company, relationships between workers and management, and the overall job climate.

In this context, our review of the literature reveals the existence of theories that emphasize the “happy worker” as being the most productive, which arises directly from the incorporation of personal and emotional relationships (Wright and Staw 1999). Such individual psychological variables generate relatively high degrees of JS, independent of the job itself, the salary, or other variables (Muñoz and Fernández 2005).

Our objective in this paper is to analyze the correlations between certain advanced practices of labor management and JS in Spain. We particularly focus on organizational and psycho-social variables. Thus, our Spanish evidence contributes to the literature that provides results on these variables from other countries, e.g., Appelbaum et al. (2000) for the US. Godrar (2001) using data from Canada, and Bauer (2004), who presents European evidence. Our working hypothesis maintains that modern businesses organize work with values and management techniques that provide greater well-being for the worker, with the understanding that requiring a more cooperative attitude from the worker generates greater productivity.

This paper contributes to the topic in three ways. Our Spanish Survey of Quality of Life on the Job (*Encuesta de Condiciones y Vida en el Trabajo*, ECVT) is a broad national survey of labor relations, free of information distortions, which allows us, first, to incorporate a number of key variables reflecting the work organization of Spanish companies, in the

context of HPWS.¹ Second, this data allows us to include job perception variables that capture a variety of psycho-social characteristics. Third, we reduce the problem of subjectivity in the perception of JS by breaking our whole sample into two sub-samples: those who are seeking employment, and those who are not.

2. Conceptual framework

Most surveys aimed at determining JS ask interviewees the kind of question that requires them to make subjective comparisons with prior employment, or with some vague notion of the ‘ideal job’. Thus, the literature reveals a debate between subjectivity and objectivity (Scitovsky 1976; Hamermesh 1977; Diener et al. 1999), taking into account that in the usual databases, such as the European Union Household Panel (EUHP) or in the Panels of the United Kingdom and Germany, questions to which individuals respond are subjective, despite that it would be more appropriate to analyze what individuals do, and not what they say. There appears to be a debate between subjectivity and objectivity, with the objectivist position being based on observable choices, rather than on individual subjective interpretations.

In the context of this debate, we objectify the response to the question about JS, from our data base, by generating two sub-samples of permanent workers, one composed of individuals who are looking for other work, while they are working, and another of those who are not doing so, in order to initially take into account the intuitive differences in the psychological approach to JS of these two groups of workers. This is done with salaried workers on permanent contract, since job security is a principal determinant of JS. For example, the variables Autonomy and Communication cannot have the same influence on a temporary worker as on a permanent one and, if we maintain an indiscriminate sample that contains both types of workers, the value of these variables will not measure the actual significance of JS.

Selecting these two sub-samples (Seeking for another job, and Not seeking), we can see in the first sub-table of Table 1 that 31.6% and 59.6% are permanent private sector workers, who are seeking/not seeking other work. The second sub-table shows that these groups are composed of 127 and 2,411 individuals, respectively. With respect to the workers looking for other work, 127, the third sub-table indicates the reasons for this search, with only 3% of those indicating that they want to improve their prospects. Table 2 effectively confirms, with the test of equality of means for independent samples, the previous intuition that the two sub-samples are different, with significant values at the 5% level in 4 of the 7 habitual socio-economic variables, that is to say, Education, Age, Gender and Salary.

Given that our objective is to analyze job satisfaction through a series of variables related to the organization of work, and to psycho-social dimensions, we add these factors to the standard model of utility of work, thus obtaining $u = u(y, h, i, j, k)$, where u is the JS; y income; h the hours of work, k , i and j constitute vectors that gather personal characteristics of the individual, and labor practices associated with high-performance organizations, respectively, and the vector k corresponds to psycho-social factors.

Thus, the primary contribution of our work is that we broaden the content of the basic model with the vectors j and k , on the basis of the following hypothesis that can be tested:

good job organization \longrightarrow more job satisfaction \longrightarrow better company results

¹ We select the most homogeneous samples according to specific labour characteristics of the individuals, in particular, with respect to job security, given that this is probably one of the most important determinants of quality of life, identifying in this way two different samples in Spain, civil servants and private sector employees. Thus, we exclude civil servants because the State regulations provide work for life, leading to much greater quality of life, while this does not operate in the private sector.

The ECVT makes it possible to study the relationship between the organization of work and job satisfaction, and incorporates certain aspects of the psycho-social context, with Lasierra (2012) having used this data to examine the determinants of work organization in Spanish firms.

Table 1 Descriptives.

	Type of contract			
	Seeking another job		Not seeking	
	Valid percentage	Accumulated percentage	Valid percentage	Accumulated percentage
Civil Servant	1.2	1.2	11.5	11.5
Permanent	31.6	32.8	59.6	71.1
Discontinued	10.0	42.8	6.6	77.7
Apprenticeship	3.0	45.8	.9	78.6
Temporary	18.9	64.7	6.9	85.6
Contingent work	22.1	86.8	9.1	94.6
Probationary	4.5	91.3	1.2	95.8
Substitute	3.5	94.8	1.6	97.4
Other	4.0	98.8	1.8	99.2
No Response	1.2	100.0	.8	100.0
Total	100.0		100.0	

Permanent salaried workers					
		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Seeking	127	5.0	5.0	5
	Not seeking	2,411	95.0	95.0	100
	Total	2,538	100.0	100.0	
Not valid		1	.0		
Total		2,539	100.0		

Reason for seeking other employment					
		Frequency	Percentage	Valid percentage	Accumulated percentage
	Insecurity	18	0.7	14.8	14.8
	Provisional	7	0.3	5.7	20.5
	Complete	3	0.1	2.5	23
	Improve	75	3.0	61.5	84.4
	Not like	6	0.2	4.9	89.3
	Others	13	0.5	10.7	100
	Total	122	4.8	100.0	
	No response	5	0.2		
Total seeking		127	5.0		
Not seeking		2,411	95.0		
Not valid		1	0.0		
Total		2,539	100.0		

Table 2 Equality of independent samples.

	Seeking another job?	N	Statistics		
			Mean	St. Dev.	Mean error
Education	Yes	125	2.2080	0.61298	0.05483
	No	2,321	2.0034	0.62490	0.01297
Age	Yes	127	2.4488	1.01347	0.08993
	No	2,411	2.9747	1.11487	0.02271
Occupation	Yes	120	3.6667	0.96435	0.0880
	No	2,285	3.5812	0.91164	0.0907
Gender	Yes	127	1.50	0.502	0.045
	No	2,411	1.34	0.475	0.010
Salary	Yes	106	4.47	1.569	0.152
	No	1,769	5.08	1.517	0.036
Working hours	Yes	125	40.31	10.857	0.971
	No	2,401	40.76	8.168	0.167
Company size	Yes	120	4.91	2.242	0.205
	No	2,249	5.11	2.378	0.050

Test of equality independent samples

		Levene test of equality of variances		Test t for the equality of means						
		F	Sig.	t	d.f.	Sig. (bilateral)	Difference of means	Typical error of the difference	95% Interval of trust for the difference	
									Lower	Top
Education	Equal variances	5.318	0.021	3.568*	2444	0.000	0.20455	0.05732	0.09215	0.31696
	No equal variances			3.631*	138.246	0.000	0.20455	0.05634	0.09315	0.31595
Age	Equal variances	0.762	0.383	-5.204*	2536	0.000	-0.52588	0.10106	-0.72405	-0.32771
	No equal variances			-5.670*	142.545	0.000	-0.52588	0.09275	-0.70923	-0.34253
Occupation	Equal variances	0.443	0.506	0.998	2403	0.318	0.08549	0.08563	-0.08243	0.25340
	No equal variances			0.949	130.417	0.344	0.08549	0.09007	-0.09271	0.26368
Gender	Equal variances	13.537	0.000	3.488*	2536	0.000	0.151	0.043	0.066	0.236
	No equal variances			3.321*	138.169	0.001	0.151	0.046	0.061	0.242
Salary	Equal variances	0.308	0.579	-3.977*	1873	0.000	-0.605	0.152	-0.903	-0.306
	No equal variances			-3.861*	117.08	0.000	-0.605	0.157	-0.915	-0.295
Working hours	Equal variances	11.459	0.001	-0.581	2524	0.562	-0.443	0.763	-1.94	1.054
	No equal variances			-0.45	131.408	0.654	-0.443	0.985	-2.392	1.506
Company size	Equal variances	0.401	0.527	-0.895	2367	0.371	-0.199	0.222	-0.635	0.237
	No equal variances			-0.944	133.697	0.347	-0.199	0.211	-0.616	0.218

* Statistically significant at the 5% level

3. Data

This study uses the ECVT 2004, a survey of the working population by the Spanish Ministry of Labor, with a sample size of 6,020 workers. The survey gathers a wide range of organizational and psycho-social variables (surveys after 2004 do not maintain the same broad data base). Together with the usual aspects of staff policy, the survey includes factors related to the characteristics of the specific job (routine or more creative), levels of stress, and circumstances of insecurity and risk. The incorporation of these variables is related to the job itself, with its accompanying policies and personal characteristics, allowing us to gather a broad group of variables that capture the qualities of work that influence JS.

We carry out a multinomial statistical analysis in which the dependent variable corresponds to a specific question on job satisfaction. The survey responses range from 1, not at all satisfied, to 10, very satisfied with the job. The scarcity of low scores (from 1 to 6) causes the distribution to present a clear asymmetry. For that reason, we have set out to study the responses by considering the grouping of categories. In this analysis, we separate the sample into three sections (Table 3): those who are dissatisfied with the job (19% of the sample) and scoring from 1 to 6; those who score 7 or 8 who are satisfied (51% of the sample), and those scoring 9 or 10, who are very satisfied (30% of the sample). This three-level classification, and the application of a multinomial regression, can better capture the characteristics of workers regarding their actual level of satisfaction. We consider this option, rather than the application of an ordered logit or probit model that gathers the whole range of responses and that, in the case of the probit, the percentage variations of the variables show their percentage influence on the dependent variable. Thus, the dependent variable JS, re-coded from the initial survey of our three groups, and the application of a multinomial regression, is for us the most suitable way to conduct this analysis, thus eliminating the problem of irrelevant alternatives that could require the application of Hausman and Small-Hsiao contrasts to the independence of these possible alternatives.

Table 3 Job satisfaction.

		Job satisfaction			
		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Very satisfied: 9 and 10	1,157	19.2	19.5	19.5
	Satisfied: 7 and 8	2,981	49.5	50.3	69.8
	Dissatisfied: 1 to 6	1,788	29.7	30.2	100.0
	Total	5,926	98.4	100.0	
Not Valid		94	1.6		
Total		6,020	100.0		

Regarding the independent variables, from the group of questions on attitudes, we use certain factors related to human resource management taken from Lasierra (2012), in accordance with the most widely-accepted literature in the field. Table 4 gathers the factors related to survey questions on organizational characteristics and the dimensions of the job that illustrate these aspects. We have done a factorial analysis by means of the Main Components Method. The index of measurement of suitable sampling of Kaiser-Meyer-Olkin presents a value of 0.75, and Bartlett's test of sphericity also presents significant values. Thus, explanatory factors are selected regarding those kinds of labor relations that shed light on various aspects of a system of more advanced work. The remaining independent variables that complete our analysis of JS gather habitual personal and labor aspects that best define the characteristics of the worker (Table 5).

Table 4 Psycho-social and organizational variables. Theories of the HPWS and Human Relations.

Dimensions of the job that gather the obtained factors	Variables	Hypothesis of influence on job satisfaction
Perception of the job $\alpha=0.7922$	fac1_2. Independence	+
Work environment $\alpha=0.7389$	fac1_6. Labour climate	+
	fac2_6. Trust climate	+
Workplace $\alpha=0.6813$	fac1_3 . Autonomy	+
	fac2_3 . Machinery and workmates	-
	fac3_3 . Public, customers and traffic	-
Communication and Knowledge $\alpha=0.7915$	fac1_4. Knowledge	+
	fac2_4. Communication	+
Working conditions $\alpha=0.8163$	fac1_5. Job position and training	+
Job development $\alpha= 0.6889$	fac1_7. Flexible work	+
	fac2_7. Routine work	-
Risk and job effort $\alpha= 0.7374$	fac1_8. Satisfaction with security measures	+
	fac2_8. Risk and hard work	-

Table 5 Personal and work variables. Theories of Human Capital, Industrial Relations and General Economy.

Variables	Hypothesis of their Influence on Job Satisfaction according to the literature
Education: 1= Illiterate. 10= Post-graduate	Positive effects of the educational level on satisfaction (Brown and McIntosh 1998; Sloane and Williams 2000; Allen and Van der Velden 2001).
Age: 1=Less than 25. 2= 26-35. 3=36-45. 4=46-55. 5=56-65. 6=More than 65	Older salaried workers are more satisfied (Clark 1996; Clark et al. 1996; Jürges 2001).
Occupation: 1= Non-qualified staff. 5= Management	Those who have better jobs value their employment more and its characteristics, which are associated with greater job satisfaction (Lydon and Chevalier 2002; Clark 1996).
Gender: 1= male. 2= female	There is extensive literature on gender. In general, it maintains that women are more satisfied with their jobs. and they find values in them other than those merely related to salary (Souza-Poza and Souza-Poza 2000; Kaiser 2002; Sloane and Williams 2000; Clark 1997).
Salary: 1= 270€ per month. 13= more than 4,500€ per month	A positive relationship is observed to job satisfaction. Relative income is important as a variable. (Sloane and Williams 2000; Clark and Oswald 1996; Groot and Massen 1999).
Working hours	The studies are not conclusive (Lydon and Chevalier 2002; Gaj 2000; Meng 1990).
Company size: 1 = Single worker. 10= more than 1,000 workers	It seems that in smaller companies. job satisfaction is greater (Idson 1990; Lydon and Chevalier 2002).

4. Empirical results

Columns A and B of Table 6 shows the results for the full sample, which includes permanent and non-permanent workers, while columns C, D, E and F only show results for permanent workers.

Table 6 Estimates of the parameters

9 and 10= Very satisfied	A	B	C	D	E	F
Intersection	-1.299**	-1.697***	0.726	0.857	0.394	0.525
Independence	1.192***	–	1.284***	1.273***	–	–
Labour climate	.656***	0.803***	0.841***	0.817***	0.972***	0.944***
Trust climate	-0.001	0.07	0.344**	0.335**	0.451***	0.447***
Autonomy	-0.131	0.161**	-0.089	-0.082	0.171	0.176
Machinery and workmates	0.127**	0.067	0.13	0.143	0.07	0.079
Public, customers and traffic	-0.088	-0.041	-0.061	-0.057	0.001	0.009
Knowledge	-0.205***	-0.194***	-0.361***	-0.355***	-0.335***	-0.333***
Communication	0.151**	0.404***	0.139	0.133	0.461***	0.452***
Job position and training	0.391***	0.433***	0.368***	.0357***	0.433***	0.419***
Flexible work	-0.01	0.063	0.1	0.131	0.116	0.153
Routine work	-0.552***	-0.666***	-0.610***	-0.613***	-0.689***	-0.694***
Satisfaction with security measures	0.168**	0.209***	0.299***	0.295***	0.322***	0.321***
Risk and hard work	-.453***	-0.411***	-0.438***	-0.437***	-0.375***	-0.374***
Education	-.323***	-0.247**	-0.632***	-0.549***	-0.508***	-0.422**
Age	-0.078	-0.016	-0.023	-0.045	0.042	0.02
Occupation	0.121*	0.023	-0.119	-0.116	-0.207*	-0.199
Gender	0.016	0.096	-0.263	-0.249	-0.175	-0.166
Salary	0.318***	.0361***	0.288***	0.258***	0.296***	0.263***
Working hours	-0.015***	-0.012**	-0.017	-0.016	-0.015	-0.014
Company size	0.037	0.041	0.04	0.031	0.046	0.039
Seeking job	-	-	–	-1.924***	–	-2.003***
Not seeking job	-	-	–	0	–	0
	N=3,486	N=3,486	N=1,604	N=1,604	N=1,604	N=1,604
	R Square =36.2%	R Square =31.9%	R Square =39.6%	R Square =41.4%	R Square =35.6%	R Square =37.7%

* Statistically significant at the 10% level

** Statistically significant at the 5% level

*** Statistically significant at the 1% level.

Specifically, in column A, the psycho-social variable Independence appears to be the most important in placing workers in the group of the most satisfied. In descending order of importance, the following aspects appear: Labour climate, Job position and training, and Salary. With an elevated coefficient. but with a negative sign, i.e., workers very dissatisfied,

two aspects stand out: Routine job, and Risk and hard work. Thus, the psycho-social variable indicating that work provides independence and allows the development of individual ideals is the main determinant of job satisfaction. If we exclude the psycho-social variable (Column B), we maintain the order of the positive variables, that is to say, Labour climate, Job position and training, and Salary. Similarly, Routine job, and Risk and hard work show the highest negative values. These results indicate the robustness of our empirical evidence.

In the sample of permanent workers including our psycho-social variable Independence (columns C and D), the order of importance and significant levels are maintained, except for Salary, whose relevance decreases. In the sample of permanent workers without the psycho-social variables (columns E and F), the previous relationship of variables is maintained according to its significance. The difference from the previous case is that new variables appear that have a certain significance, such as Knowledge, Communication, Flexible work, and Education.

Some studies have already provided results along these lines. Cappelli et al. (1997) in their study of large companies in the US, point out that productive restructuring has improved job satisfaction, productivity, product quality, customer service, and worker efficiency. However, they also observe that the working environment, morale, and commitment of workers to the company and to their workload have worsened. Godard (2001) observes that variations in intensity of application of those innovations have different results on a series of variables related to worker performance (self-esteem, satisfaction, workload, motivation, commitment, camaraderie, identification with the company, fatigue, and stress), and the general well-being of the worker. Godard questions, in this sense, the general view in the literature of organizational innovation as only providing advantages. Bartel (2004) finds positive effects on company performance from certain of the cited variables.

Regarding the psycho-social variable, the neoclassical analysis, based on the work-leisure ratio of the individual, can offer a dual interpretation. If it is considered that work is a good in itself and, therefore, Salary does not capture all the relevant value of work, the model itself is, in part, invalidated. The assumed neoclassic concept states that labour produces income as compensation, whereas our results imply that labour has a certain intrinsic value, in addition to the Salary as compensation. On the other hand, if work has intrinsic value, public policies should promote the greatest number of jobs possible, even if those jobs are not always pleasurable. Given the high value of the coefficient of this variable in the explanation of JS, for a sample in which every type of job, Salary, and working condition is reflected, it would seem that the individual would value an unpleasant job more than no job at all. It could be that the Spanish case, in a time of high unemployment, could give a higher value to employment, but this does not fully explain the effect.

The majority of JS studies, particular those from Industrial Relations theories (Gaziolu and Tansels 2006), stress demographic (Age, Gender) and economic (Company size, Occupation, Training) aspects. Our results agree with the empirical applications studied, in the sign of the coefficients, as well as in their real but limited influence. Specifically, our Education and Company Size variables show small coefficients. Our results also indicate that Gender shows the predicted influence in accord with the hypotheses and the literature: women are more satisfied with work than men. Age shows that older workers are more likely to be found among the dissatisfied. Regarding Job position and training, its coefficient and its positive sign stand out with regard to labour practices that we would relate to the old models of internal labour markets.

Theories that focus on the “happy worker” as being the most productive emphasise questions of personal and emotional relationships (Wright and Staw 1999), and our results strongly support these notions. The variable that refers to good relationships with managers and colleagues is the most significant, after the socio-economic variable, when considering a

worker as being very satisfied. The aspect relative to trust in colleagues and superiors also has a positive sign.

Regarding the hypotheses of HPWS, neither flexible work nor autonomy appear to be important variables in job satisfaction, although they do have a positive sign. Clearly, some studies point out that HPWS reinforces autonomy and involvement, but they also show that it produces more stress on the job, which could reduce or offset any possible benefits (Ramsey et al. 2000. Thompson and Harley 2007).

In summarizing these results, we observe a system of traditional job relations, in terms of the evaluation by workers of organizational innovations in companies, in a time of open and competitive economies. Using a broad sample of the national workforce, we conclude that we are describing the current state of labour relations in Spain.

5. Conclusions

The new realities of the current economy have challenged business executives at all levels. Uncertainties about the economic recovery, increasing government involvement, and the motivation of the workforce have placed management in a complicated and tenuous situation. While the challenges are daunting, one of the biggest issues executives face is how to improve performance, as well as how to keep the workforce engaged, and maintain a high level of productivity.

The literature on advanced labour management considers that the success of companies in a global economy requires motivated human resources that actively abet the good performance of the company, which must translate into good economic results. In this context, we have approached job satisfaction from the perspective that organization of work and psycho-social variables influence JS. We take advantage of a study of aspects of organization of companies from Lasierra (2007), and we proceed to refine the sample to limit the distortions that certain variables generate, which are frequently incorporated in JS studies.

Our results indicate that the organizational and labor relations aspects, which are related to the advanced management of work in the context of Soft-management, are not the most significant in determining the level of satisfaction of the worker. We find that factors of personal character, and social and work relationships are more important. Thus, the labor practices that provide job satisfaction respond to an outline of fairly traditional labor relations. Departing from the neoclassical model, human and social relationships within the company stand out as the main factors generating JS, together with the intrinsic value of the job itself.

While Spanish companies have experimented in recent years with important technological transformations, and operate in more open and competitive markets, concepts of labor management remain in their traditional form. On the one hand, companies do not generally apply advanced management techniques and, on the other hand, workers do not necessarily appreciate or value them. Probably, this dissociation between the advanced productive model and traditional labor relations could be explained, in some part, by the relatively low efficiency of the Spanish productive sector, compared to other industrialized European countries. If this is the case, with the measurement of such factors being a direct extension of our research, we will experience in the future a broad range of transformations of work relationships and work management. This double reform, of labor and business, in the context of work organization, should be anticipated.

This study, in the context of the microeconomic sphere, could be extended to an examination of the importance for companies of developing active human resource policies that value personal relationships. That is to say, a more humanized working environment, promoting individual well-being and increasing the degree of JS would manifest itself in better results for the company, representing a first step in the above-mentioned reforms.

Two other possible extensions of this work would be to have access to panel data to use methods of causation, given that our cross-sectional data only provides correlations; and also to have information on company performance, so as to examine job satisfaction in comparison with our empirical results. To the best of our knowledge, this valuable and homogeneous information is not yet available in Spanish databases.

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