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Documentos de Trabajo

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Documento No. 11/10
Agosto 2010

ISSN 1688-5031

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Abstract

We examine the factors that shape job satisfaction and in particular, the direct and indirect effects of the educational level. Our motivation is based on extending a large body of researches that is focused on private sector data by employing a larger and widely heterogeneous set of micro-data and by including non-linear effects and indirect effects of education. Our dataset includes 25 countries and it comes from the 2007 survey carried out by the International Social Survey Program. We estimate a probit model which includes country-effects in order to control for specific environmental factors. Findings indicate that job satisfaction is negatively related to being male, living in a big city, the number of worked hours per week, and not being self-employed. We also find that age registers a non-linear impact and we provide evidence that individual educational level shows a positive effect but with a decreasing growth rate and also an indirect effect through earned income.

Key words: job satisfaction, cross-country research

JEL classification: J28, J81, I31, Z13

Resumen

El objetivo de este trabajo es analizar los factores que determinan la satisfacción con el trabajo, en particular, los efectos directos e indirectos del nivel de educación. La contribución principal de este trabajo es, por un lado, extender la literatura sobre el tema que se basa generalmente en datos del sector privado y que no ha examinado los efectos no lineales y efectos indirectos de la educación en la satisfacción con el trabajo. La base de datos corresponde a la encuesta realizada en 2007 por el *International Social Survey Program* que permite incluir 25 países. Se estiman modelos probit que incluyen efectos-país con el objetivo de controlar por las características del país de residencia. Los resultados muestran que la satisfacción con el trabajo está negativamente relacionada con ser hombre, vivir en una gran ciudad, el número de horas trabajadas por semana y con no ser auto-empleado. Además, se encuentra que la edad presenta un efecto no lineal. Por último, se brinda evidencia sobre los impactos de la educación, por un lado, impacta positivamente pero a tasa decreciente y por otro lado, muestra un efecto indirecto a través del salario percibido.

Palabras clave: satisfacción con el trabajo, análisis multi-país

1. Introduction

The impact of job satisfaction on happiness and well-being is undeniable. As Smith (2007-b) argued a job is not only a main source of income, but also an important life domain in other ways. “Work occupies a large part of each worker’s day, is one’s main source of social standing, helps to define who a person is, and affects one’s health both physically and mentally. Because of work’s central role in many people’s lives, satisfaction with one’s job is an important component in overall well-being”.

Job-satisfaction includes judgments of the job as a whole, possibly including multiple facets such as the work itself, salary and other compensations, advancement, supervision, and co-workers. These intrinsic and extrinsic job attributes are correlated to involvement or commitment which influence on productivity (Argyle, 1994; Freeman, 1978; Hamermesh, 1977, 2001; Hodson, 1985; Hunt and Saul, 1975; Kalleberg and Loscocco, 1983; Moon, 2000 and Robbins, 2003). Its major concern emerges from the recognition that it influences absenteeism (Breugh, 1981; Keller, 1983; Tharenou, 1993), fluctuation (Farkas and Tetrick, 1989; Rusbult and Farrell, 1983) and counterproductive behavior (Gottfredson and Holland, 1990).

Examining the risk factors for job dissatisfaction may help to reduce the effects of the above-mentioned negative consequences and to improve job conditions and incentive structures that integrate the relationship between working conditions and organizational and individual outcomes.

We hypothesized that job satisfaction could be explained by a set of personal economic and socio-demographic characteristics such as age, education, gender, relative income and cultural background and given that working conditions differ between public and private sector, after controlling for other factors, we expect to find a significant difference between them. Even though there is a large body of research focused on this issue, the contribution of this paper is threefold. Firstly, we extend the analysis by employing a large data set that includes countries at different stages of development. Secondly, we examine whether educational level has non-linear effects and its relationship with other personal attributes.

The structure of the paper is as follows. Section two develops the concept of job satisfaction and its relevance. Section three presents some empirical evidence linked to the effect of personal characteristics (such as: gender or age,) on job satisfaction. The fourth section sketches the main features of the dataset, the econometric methods applied in this analysis and the description of variables. The fifth section deals with results. Finally, the conclusions are drawn in section six.

2. Job satisfaction and its relationship with work and organizational psychology

Employee job satisfaction could be interpreted as the gap between expectations and reality. For instance, the level of job satisfaction should be low among frustrated and disappointed employees. Even when job satisfaction may be considered as a highly subjective indicator, there is a set of objective factors that play a relevant role in explaining it such as salary, the boss, work-place conditions, etc. Ellickson and Logsdon (2001) argued that job satisfaction has two major groups of causes: environmental antecedents (work-related factors) and personal factors.

Job satisfaction has been a key factor for understanding occupational involvement and commitment. It is an overall perceptual response to and general attitude toward the current job (Rainey, 1997). This is an attitude that has been a focus of research effort within several fields: economics, management, psychology and sociology (Argyle, 1994; Freeman, 1978; Hamermesh, 1977, 2001; Hodson, 1985; Hunt and Saul, 1975; Kalleberg and Loscocco, 1983).

According to Robbins (2003) job involvement is “the degree to which a person identifies with his or her job, actively participates in it, and considers his or her performance important to self-worth”. Therefore, it is an element of organizational commitment. Moon (2000) finds that extrinsic motivational factors such as pay expectancy can be significant determinants of commitment.

Accepting that job satisfaction is strongly and positively linked to involvement and commitment; it implies that the former is also related to workers’ productivity. Therefore,

the analysis of the factors that shape job satisfaction could contribute to improve job conditions and incentive structures that lead to higher productivity.

3. Job satisfaction, the role of personal attributes and country effects

Firstly, there are no consistent empirical results concerning relevant differences among women and men (Clark, 1997; Ellickson and Logsdon, 2001; Sloane and Williams, 2000). For example, Clark (1997) found evidence that British women are happier at work than British men. This result was explained due to the fact that women have lower expectations.

The same is true in the case of age. Even when it has been frequently shown that there is a strong positive association between age and job satisfaction (Doering, Rhodes and Schuster, 1983 and Glenn, Taylor and Weaver, 1977); there is no consensus regarding whether the effect is linear. DeSantis and Durst (1996) and Durst and DeSantis (1997) and Warr (1992) argued that there is U-shaped and positive relationship. The U-shaped relationship suggests that job satisfaction declines in an initial stage and then rises as employees get older. The authors hold that the relationship “may be a reflection of job turnover, with unsatisfied employees leaving their positions to find more satisfying employment”. The positive relationship suggests that older people might have more realistic expectations about their jobs and a stronger sense of achievement.

Several researchers have focused on the role of relative income in determining satisfaction or happiness. Some labor-market examples are Capelli and Sherer (1988), Pfeffer and Langton (1993), Clark and Oswald (1996), Law and Wong (1998), Bygren (2004), Ferreri-Carbonell (2005), and Brown *et al.* (2008), using survey data, and Shafir *et al.* (1997) in experimental work. In general, they concluded that relative wages are important in determining workers’ job or pay satisfaction. On the other hand, interaction with others also affects people’s own expectations. Hirschman and Rothschild (1973) noted that “while others’ good fortune might make me jealous, it may also provide information about my own future prospects”. Manski (2000) argued that where what happens to others allows one to update the information set (through information effects or signals).

DeSantis and Durst (1996) suggested four sets of determinants of job satisfaction including monetary and non-monetary rewards, job characteristics, work environment characteristics, and personal characteristics. Durst and DeSantis (1997) showed that external rewards, internal rewards, and personal characteristics are primary determinants of job satisfaction. Wright and Kim (2004) found that job characteristics such as participation, task significance, job specificity, career development support, and feedback are primary factors in job satisfaction in the case of New Yorkers employees.

Additionally, education (which is considered as a measure of intelligence in several researches) is related both to current job complexity and the complexity that people desire in their work. Some empirical studies provide clear proofs on the relationship between the educational level and job complexity (Blackburn and Neumark, 1993 and Farkas and Vicknair, 1996). Moreover, Holland (1959) argued that "within a given class of occupations, the level of occupational choice is a function of intelligence". Thus, people seek for environments that fit their characteristics (O'Reilly et al. 1991) such as intelligence. Hence, we expect that education is significantly related to job satisfaction. However, the direction of the effect cannot be unambiguously determined. It may depend on having or not a challenging job or whether it is interesting enough.

With regard to familiar background, Rogers and May (2003) found evidence of the existence of spillover from marital quality to job satisfaction. In particular, they showed that increases in marital satisfaction were significantly related to increases in job satisfaction and *vice versa*.

Considering the employment sector, Rainey (1979 and 1983) showed that private employees are more interested in pay, task, working environment, and promotion opportunities, whereas public employees are more interested in job security and a sense of influence and achievement. Emmert and Taher (1992) and Rainey (1983) stressed that public service often offers a higher level of job security but not necessarily promotions and wages that are comparable to those in the private sector. Golembiewsk et al. (1998) and Wright and Davis (2003) characterized public servants as having strong intrinsic motivations, such as a sense of achievement, influence, and pride, yet they often feel powerless and isolated in their extremely hierarchical and bureaucratic environments.

Bender and Sloane (1998) found a significant and negative impact of union membership in the case of Great Britain. However, the effect of unions on job satisfaction was not straightforward. When considering industrial relations variables, union membership becomes non significant. The authors also find that union status and job satisfaction also varies significantly between genders and between manual and non-manual workers. Heywood et al. (2002) also found that British union members had lower job satisfaction and the authors added that public sector workers had higher satisfaction than private sector workers.

Finally, far beyond personal attributes, we hypothesized that countries' characteristics may be determinants of job satisfaction. In other words, there are some macroeconomic characteristics that may play a relevant role in changing work environment and hence job satisfaction. Hence, we aim at assessing the significance of country effects and separately, the impacts of specific macroeconomic variables on job satisfaction. For example, richer countries may present more stable work-conditions and hence they may present higher job satisfaction.

4. Data and methodology

The data source is the survey carried out by the International Social Survey Program; the fieldwork was carried out in 2007. This survey has important advantages that allow researchers to assess a great variety of issues and at the same time, it includes a large set of countries.

The question used in the survey questionnaire to identify the level of job satisfaction is: "*How satisfied are you in your (main) job?*" The set of answers were:

1. Completely satisfied
2. Very satisfied
3. Fairly satisfied
4. Neither satisfied nor dissatisfied
5. Fairly dissatisfied
6. Very dissatisfied
7. Completely dissatisfied

In this case, we focus on determining which elements shape the probability of being really satisfied at work. Hence, firstly, we consider only those people who were employed and secondly, we construct our dependent variable in the following way: we generate the binary dummy variable *SATISFIED* that equals 1 if respondent answered “completely satisfied” or “very satisfied” and 0 in other case

The available data allow us to include 25 countries and more than 13,000 observations (we consider only people who have a job at the moment of the survey). This large dataset includes countries at different stage of development that present very different backgrounds. Table 1 shows the weighted frequency distribution of our dependent variable per country.

Insert TABLE 1 - Distribution of answers

As Table 1 clearly shows, the ratio of people that seem to be really satisfied at work is low (42.7 percent). We also find a very heterogeneous pattern of behavior among countries that seems to be uncorrelated with economic performance.

For example, Mexico and Philippines show ratios higher than 50 percent, these countries are part of the poorest countries of the sample (measured by Gross Domestic Product per capita) and also show high income-inequality (measured by the GINI Index). Denmark and Switzerland, where the opposite is true (they are part of the richest countries of the sample and at the same time, they register relatively low income-inequality), also show ratios higher than 50 percent.

Moreover, when considering those countries that register a percentage of satisfied people lower than average (42.7 percent), Table 1 shows that Norway and Sweden (relatively rich countries where income-inequality is low) are found in this second part of the table and the same is true in the cases of South Korea and Bulgaria (that belong to the poorest countries of the sample where income-inequality is relatively high).

Given that our dependant variable is binary, we estimated a probit model. We aim at determining what are the relevant personal attributes that shape the probability of being

satisfied at work. After estimating the probit model, we compute the probability that the dependant variable equals one and we also estimate the marginal effects of the independent variables. These figures are the changes in the above-mentioned probability given a change in the independent variables. The complete description of the included variables is reported in Table 2.

Insert TABLE 2 - *SATISFIED*: Description of independent variables

5. Main findings

Findings are reported in Table 3 that show the marginal effects of independent variables, personal attributes and country-effects. According to our model, the probability of being completely satisfied at work is 43.6 percent; this ratio is very close to the average of responses (42.7 percent). Regarding country-effects, the omitted variable is the United States; hence results should be interpreted in comparison to this country .

Insert TABLE 3 - Determinants of job satisfaction, marginal effects of independent variables

5.1. Personal attributes

Firstly, consistent with Clark (1997) results for Great Britain, we find that there are significant differences among men and women in satisfaction at work. In particular, Table 3 shows that men tend to be less satisfied than women.

Secondly, age emerges as a strong determinant of job satisfaction and it shows a non-linear effect given the significance of *AGE_SQ*. This result implies that, older people are much more likely to have more realistic expectations about their jobs and a stronger sense of achievement as previous researches has shown. Moreover, older workers on average have more seniority and have more advanced positions within their employing organization. Also, people presumably try out different jobs and tend to select into more suitable positions over time.

Of particular interest may be our finding of the non-linear effect of education. In particular, we find that the educational level is positively related to job satisfaction but with a decreasing growth rate. Clearly, given the significant and positive impact of the years of education, this personal characteristic tend to hike job satisfaction by providing better tools and capabilities. However, as *EDUCATION_SQ* results significant and its coefficient is negative, our model implies that the growth rate of job satisfaction falls as the educational level is up. Specifically, we find that higher educational levels may induce people to be less satisfied at work which in turn may result from the interplay between reality and expectations (better salary or working conditions).

Regarding familiar background, we examine the effects of marital status and the model shows that there are not significant differences among those who have experienced disruptive family situations such as those involving divorce and married or single people. Hence, we argue that these experiences do not shape judgments towards working conditions.

We find that there are no significant differences among people who identify with some religious group and those who do not (atheist and agnostics), but, at the same time, Table 3 clearly shows that religiosity matters in the expected direction. Job satisfaction goes up if the person attends religious services.

Findings also indicate that political affiliation with the Right plays a relevant role; people who belong to this political wing are more likely to be satisfied at work. Moreover, there are no significant differences among those who identified with the Left wing or with the Center.

Living in big cities is negatively related to job satisfaction. One direct possibility for this finding may be that labor market competition is greater in urban areas. Additionally, an indirect possibility concerns that social problems (such as poverty, crime and violence) are also greater in these areas and may influence on people's judgments.

Results verify our assumptions regarding the differences among those working in a private enterprise and civil servants. Firstly, we find that those working for the government or in a

private enterprise are less satisfied at work than self-employed people and at the same time, private employees tend to be much more dissatisfied than civil servants (due to the larger negative effect). This result may be linked to the fact that private employees tend to be more interested in salaries, tasks and promotion opportunities while those in the public sector are more likely to be interested in job security and stability.

Other aspects connected to the job the model show that job satisfaction goes down as the number of worked hours increases. Additionally, as hypothesized, job satisfaction is positively related to earned income, those who indicated that their pay is high are more likely to be satisfied at work and the same is true in the case of those who supervise other people at work. However, these effects depend also on the educational level.

The focus here is on whether or not the individual educational level affects the relationship between the above-mentioned job attributes and job satisfaction. Firstly, the interaction term between *EDUCATION* and *HIGH EARNED INCOME* results significant and given the sign of the coefficient, its impact on job satisfaction is negative, implying that even when people who indicated that their pay is high are more likely to be satisfied at work, this effect becomes weaker as the educational level rises. When *SUPERVISOR* is interacted with *EDUCATION*, we find no significant relationship.

5.2. Country-effects

As it was explained, our model includes country-effects in order to control for environmental factors that may play a relevant role (macroeconomic, political and cultural characteristics). The omitted variable is the United States; hence, results should be interpreted with respect to this country.

Table 3 also reports country-effects. It should be noted that all country dummy variables are significant at the 1 percent level. Country effects vary from 13.7 percentage points in the case of Mexico, where consequently, people registered the highest probability of being satisfied to -36.8 percentage points in the case of South Korea where the probability of being satisfied at work falls to its minimum.

Only in three cases the is assessed probability higher than registered in the United States case, they are: Mexico, Cyprus and Switzerland. The others 21 countries register negative effects implying lower probabilities of being satisfied at work than for United States inhabitants.

6. Conclusions

We examined what are the key factors that shape job satisfaction at the individual level and we also control for country-effects. This study's main contributions are threefold.

Firstly, we present econometric evidence that verify previous findings using a large and heterogeneous dataset. Being a man, living in a big city, working a high number of hours per week, not being self-employed are personal characteristics that are negatively related to job satisfaction. Higher pay, attending to religious services, belonging to the Right wing and supervising other people at work are personal characteristics that raise the probability of being satisfied at work. In line with previous findings, we also corroborate that age has a non-linear effect.

Secondly, new evidence is provided about the effects of environmental factors or country's characteristics. Our model includes 24 dummy variables representing the country of residence and all of them show significant differences. However, the ranking of countries shows that differences are not directly related to economic characteristics such as income per capita or income-inequality, it suggests that cultural, political and other socio-demographic characteristic may be relevant.

Finally, regarding the educational level, we add new elements to the discussion. The conclusions that arise from the joint examination of results are that it is a strong determinant of job satisfaction. In line with previous researches, it registers not only a clear positive direct effect but we also find that it shows a non-linear impact (job satisfaction is up as the educational level is higher but with a decreasing growth rate), and a negative indirect effect through the earned salary. Both results may be connected to the high expectations that more educated people is likely to have that involve not only their salary but also working conditions and all job attributes.

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Annex – tables

TABLE 1 – *SATISFIED*: distribution of answers

	0	1	Total
Mexico	33,61	66,39	100
Switzerland	34,49	65,51	100
Cyprus	34,74	65,26	100
Ireland	40,83	59,17	100
Denmark	42,90	57,10	100
United States	44,33	55,67	100
Philippines	45,71	54,29	100
Germany	51,40	48,60	100
Canada	55,56	44,44	100
Finland	56,44	43,56	100
Great Britain	56,72	43,28	100
Spain	57,03	42,97	100
Portugal	57,98	42,02	100
Dominican Republic	58,58	41,42	100
Australia	59,17	40,83	100
New Zealand	59,55	40,45	100
Norway	60,06	39,94	100
Sweden	61,23	38,77	100
Bulgaria	64,07	35,93	100
Hungary	65,10	34,90	100
Slovenia	66,87	33,13	100
Japan	68,48	31,52	100
Czech Republic	70,29	29,71	100
Latvia	77,23	22,77	100
South Korea	80,76	19,24	100
Total	57,34	42,66	100

TABLE 2 - Description of independent variables

Variable	Description	Mean
Age	Respondent's age	41,7
Age_sq	Age * age	1884,1
Atheist	1 if respondent does not identify with some religious group and 0 in other case	0,2
Attendance	3 if attending to religious services once a week or more, 2 if attending to religious services between once and three times per month, 1 if attending to religious services few times per year and 0 if attending to religious services less than once per year	0,9
Big city	1 if respondent lives in a big city and 0 in other case	0,3
Education	Years of schooling	12,6
Education_sq	Education * education	171,9
High earned income	1 if considering that his/ her salary is high and 0 in other case	0,3
High earned income_education	High earned income * education	3,5
Left	1 if indicating that he/ she identifies with the Left wing and 0 in other case	0,3
Man	1 being a man and 0 if being a woman	0,5
Married	1 if married or living as married and 0 in other case	0,6
Private sector	1 if working in a private enterprise and 0 in other case	0,6
Public sector	1 if working for the government and 0 in other case	0,3
Right	1 id indicating that he/ she identifies with the Right wing and 0 in other case	0,3
Single	1 if being single and 0 in other case	0,3
Supervisor	1 if supervising others at work and 0 in other case	0,5
Supervisor_education	Supervisor * education	6,7
Worked hours	Worked hours per week	40,0

TABLE 3 - Determinants of job satisfaction, marginal effects of independent variables

PROBABILITY OF <i>SATISFIED</i> = 1	43,6%	
	Marginal effect	Robust St. Error
MAN	-0.017*	(0.009)
AGE	-0.003	(0.003)
AGE_SQ	0.001*	(0.000)
EDUCATION	0.016***	(0.005)
EDUCATION_SQ	-0.001*	(0.000)
MARRIED	0.016	(0.014)
SINGLE	-0.007	(0.016)
ATHEIST	-0.018	(0.014)
ATTENDANCE	0.015***	(0.005)
LEFT	-0.016	(0.010)
RIGHT	0.035**	(0.015)
BIG CITY	-0.026**	(0.012)
PUBLIC SECTOR	-0.077***	(0.030)
PRIVATE ECTOR	-0.138***	(0.034)
WORKED HOURS	-0.001***	(0.000)
SUPERVISOR	0.121***	(0.037)
SUPERVISOR_EDUCATION	-0.004	(0.003)
HIGH EARNED INCOME	0.271***	(0.027)
HIGH EARNED INCOME_EDUCATION	-0.004*	(0.002)
MEXICO	0.137***	(0.008)
CYPRUS	0.108***	(0.007)
SWITZERLAND	0.080***	(0.008)
IRELAND	-0.025***	(0.007)
DENMARK	-0.028***	(0.008)
PORTUGAL	-0.065***	(0.008)
GERMANY	-0.075***	(0.019)
PHILIPPINES	-0.083***	(0.018)
SPAIN	-0.101***	(0.007)
GREAT BRITAIN	-0.120***	(0.008)
FINLAND	-0.142***	(0.008)
SWEDEN	-0.145***	(0.007)
NORWAY	-0.155***	(0.007)
BULGARIA	-0.160***	(0.004)
HUNGARY	-0.162***	(0.006)
AUSTRALIA	-0.168***	(0.005)
DOMINICAN REPUBLIC	-0.174***	(0.009)

NEW ZEALAND	-0.201***	(0.006)
CANADA	-0.211***	(0.005)
CZECH REPUBLIC	-0.252***	(0.006)
SLOVENIA	-0.261***	(0.006)
JAPAN	-0.273***	(0.009)
LATVIA	-0.323***	(0.003)
SOUTH KOREA	-0.368***	(0.006)
Constant	0.001	(0.220)
Pseudo R2	0.0972	
Observations	13,222	

Note: * significant at 10%; ** significant at 5%; *** significant at 1%