

# Learning about one's relative position and subjective well-being

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## Abstract

In this paper we contribute to the empirical literature that is interested in showing whether relative income matters as determinant of subjective well-being. We discuss what happens to subjective well-being when an individual, which is initially unaware of his position in the wage distribution, learns about his reference group wage level. Based on experimental data we observe that declared satisfaction is negatively affected when an individual learns that his income is below that of his reference group. Additionally, using Spanish survey data we observe that subjective perceptions on relative income position significantly affect well-being.

**Keywords:** relative income, subjective well-being;

**JEL Codes:** J16, J22, C35

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## INTRODUCTION

A standard assumption in traditional consumer economic theory is that preferences are independent of cultural conventions or social contexts. A consumer is rational if he is consistent with certain choice axioms and scarcity restrictions that involve only his absolute level of consumption and income. In other terms, a consumer chooses his level of consumption in order to maximize his felicity function independently of what other people do, think or believe (Frank, 1985).

Nevertheless, there is abundant evidence that shows consumer's behavior significantly depends on how the "others" behave, believe, perceive or consume. Cohen (1969) describes the behavior of wealthy Sabo housewives, in Nigeria, who "sink all their profits in acquiring ever increasing numbers of Czechoslovak-made bowls...these bowls have become the most important status symbol and women are ranked according to the number of bowls they possess" (see Douglas and Isherwood, 1979). Bourdieu (1984) showed that members of the French middle-class tried to emulate upper-class attitudes and lifestyles, because having "good taste" was assimilated to an understanding and conformance to upper-class values. Neumark and Postlewaite (1998) find that women work more if their sister's husband earns more than their own husband. In the days of Adam Smith, an English would be ashamed to appear in public without wearing items such as leather shoes and linen shirts, because he would be supposed to be a poor ().

Additionally, if consumers derive felicity from their own level of consumption, having more should be synonymous of more happiness. However, Easterlin (1974) observed that the significant increase in income in the industrial democracies over the last century was not accompanied by similar increases in happiness. Its more, it has been observed that an individual's subjective well-being could even fall if the increasing trend in his absolute level of consumption or income goes below that of their families, friends, neighbors or colleagues. In other terms, people care about their relative position, which affects their level of subjective well-being (Duesenberry, 1949; Frank 1985, 1991). In sum, these evidence suggest that the traditional consumer's utility function used in economic analysis should be

transformed to include concern for the relative position of the individual.

Recently, a number of empirical papers have been studying whether individuals derive utility only from their absolute level consumption or if it is also affected by the level of consumption relative to others. Among other things, asserting whether a person's relative position affects utility has important implications in theoretical modeling or on the assessment of different economic policies, such as tax or poverty reduction policies (see Brekke and Howart, 2003 and reference therein).

In order to test whether relative position affects subjective well-being two basic approaches have been followed. One is based on experimental studies in which subjects were asked to evaluate trade-offs between absolute and relative consumption. Usually respondents are asked to choose between two states of the world: State A: "Your current yearly income is \$50,000"; others earn \$25,000; State B: same but \$100,000 and \$200,000. In other terms, whether it is better to be a rich but relatively poor person in a rich society or a poor but relatively rich in a poor society. Standard economic models suggest that people should be concerned with only their own material standard of living, not with their relative standing in society. If relative standing matters then respondents will choose the world where they are relatively better (Solnik and Hemenway, 1998; Alpizar et al. 2004). The second approach is based on non-experimental data where the individual's relative position generally needs to be estimated from demographic characteristics, i.e. cohort, education, etc. The estimated comparison income is then plugged-in as an independent variable explaining in the subjective well-being equation. The sign and significance of the coefficient of this variable is used as an indicator about whether relative position matters. In general, these papers conclude that individuals derive utility from their absolute and relative consumptions ( McBride, 2001; Clark and Oswald, 1986; Stutzer 2004, among others).

Most of these empirical papers are characterized by two basic assumptions. The first one is that, in these studies, individuals are aware of their position in the income distribution, i.e. respondents know their income as well as the average income. The second one is that the individual's comparison relative income can be determined by a set of demographic variables, i.e. it is predicted based on a set of characteristics, and hence it is assumed that

the dimension in which individual's compare themselves is known (Stutzer, 2004; Herne and Suojanen, 2004; Johansson-Stenman et al 2002). In this paper we discuss the relevance of positional considerations on subjective well-being when we soften this two assumptions.

In particular, our main concern is to contribute in three ways to these literature. In the first place, we construct an experimental design under the assumption that there is a learning process about one's relative position, i.e. we are originally unaware of our position in the income distribution . New information arrives that allows to position oneself in the income distribution and derive his relative income. In other terms, we assume that individual's decide their original level of happiness under a certain "veil of ignorance" with respect to what their actual relative position is. Afterwards, in process of learning, individuals gather information about what they relative position actually is. If relative position affects subjective well-being then their level of happiness should change with respect to its original "veil of ignorance" level. From this experimental design we find that learning about our relative position significantly changes the subjective well-being with respect to the uninformed or original level<sup>1</sup>.

Second, we use survey non-experimental data that has information on the individual's subjective perception of his relative income position to test its effect on SWB. As Stutzer (2004) argues, a possible problem with the existing empirical literature is that it is not clear whether the estimated comparison income really measures the relative position of an individual with respect to his reference group, i.e. it is not clear "in what dimensions people compare themselves". Our data partially resolves this problem because the survey respondents need to answer a question about their relative position, i.e. whether their wages is above, below or at the same level to what the market is paying for the same occupation and schooling level. Using this information we find that those who know that their wages

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<sup>1</sup>The main idea we want to express can be summarized in the following anecdote. A journalist invited to the wedding of prince Felipe in Spain, published in a newspaper gossip column her feelings when she found that another women in the wedding was using her same dress. As she explains, before the wedding she was really happy with her new and original dress. But her level of happiness sunk once she learned that another women in the wedding was dressing the same clothes (Lindo, 2004). In other terms, learning her relative position affected her original subjective well-being.

are above what the market is paying are significantly happier than those who do not know; or those who know that their wages are below what the market is paying are significantly unhappier than those who do not know. We interpret these results as suggesting that learning about the relative position affects subjective well-being.

Finally, a minor novelty of this paper is to supply evidence to this literature from Spain. Up to our knowledge there are practically no empirical papers dealing with testing the hypothesis that relative-income does matter in individual assessments of subjective well-being for Spanish people. Ahn and Garcia (2004) study the determinants of life satisfaction of comparing different countries of the European community, but they are not interested in analyzing the relative income hypothesis. Alvarez and Miles (2004) do consider the impact of the relative-income but in its effect of job turnover and difference by gender.

The paper is organized in four sections. In the following section we briefly discuss the reasoning behind the empirical approach. In section three we present the experiment design and its results. In section four we discuss the data and descriptive results. In the last section we conclude.

## **SWB AND RELATIVE POSITION: EMPIRICAL APPROACH**

The idea behind the empirical approach that follows could be phrased in the following example. Imagine that two university colleagues, Smith and Jones, are new entrants in the labor market. Smith finds a job first, and he is particularly happy of the wage offered, i.e. the absolute wage is larger than his reservation utility level. However, if relative position matters, Smith happiness level will presumably fall when he learns that Jones accepted a job with similar characteristics but a higher wage. In other terms, initially Smith is unaware of his income position relative to Jones wage -his reference group-, so Smith absolute wage determines his original level of SWB. If relative position matters, when Smith learns that his wage is below that of Jones, his SWB should fall.

Following the intuition of the last paragraph, a possible way to study whether learning about one's relative position affects subjective well-being is to compare the reported subjec-

tive well-being under the "veil of ignorance" state -not knowing the relative income position- with the one reported after learning about one's the relative position. Stated differently, we could be interested in calculating how the SWB distribution changes when an individual learns about his relative position,

$$\Delta(s) = F(s|RP_i, X_i) - F(s|VI_i, X_i)$$

where  $F(\cdot)$  is the cumulative distribution function of reported SWB conditional on individual  $i$  knowing his relative position,  $RP_i$ , and on characteristics,  $X_i$ , and where  $VI_i$  means refers to the "veil of ignorance" state. If positional concerns are taken into account by individuals,  $\Delta(s)$  should be different from zero.

We follow two approaches in order to identify  $\Delta(s)$ . In the next subsection, we present the results of designing an experiment in order to obtain information of both,  $F(s|RP_i, X_i)$  and  $F(s|VI_i, X_i)$ , for the same individual. In the subsequent section, we use survey data to estimate the impact on SWB of the individuals perception of his relative position.

## EXPERIMENT DESIGN AND RESULTS

The experiment was conducted at the University of Vigo and University of Uruguay between September and November 2004. The idea of applying the experiment to students in Galicia, Spain and Montevideo, Uruguay, was to compare the results from two particularly different economies but similar cultural norms . A total of 283 students were interviewed in the classroom as part of a lecture with an average size class of 15-60 students. The survey lasted approximately 30 minutes and there was no show-up fee paid. In addition to the printed information, the respondents were given verbal information before the beginning of the experiment.

The questionnaire of the experiment was divided in two parts. In the first part, the respondents were given a wage offer for the job they were looking for. Once observing this wage, they should rank between 1, totally unsatisfied, and 10, totally satisfied, the satisfaction level obtained from that wage. We additionally asked them to express, in words, what had made them to decide that particular level of happiness. In the second

part, we gave the respondents information about the wage offered to their classmates that opted to and where accepted for his same job. Therefore, in this second part a respondent could learn about whether his wage was above or below the one offered to his "reference group". The respondents should then rank between 1, totally unsatisfied, and 10, totally satisfied, their satisfaction level after observing what their colleagues earns and express, in words, what had made him to decide that particular level of happiness. Finally, when the experiment finished we ask them what was the mean wage in economy and what was the expected wage of a new entrant in the labor market.

There were four different scenarios: (1) The respondents wage in the first part: 1200 euros; classmates in the second part: 1800 euros; (2) the respondents wage 1200 euros and classmates 600; (3) the respondents wage of 600 euros and classmates 300 euros; (4) the respondents 600 euros and classmates 900 euros. Similar scenarios were presented in Uruguay though wages were presented in US dollars. The wages proposed are similar what it is expected for this students to earn: 600 euros is the minimum while 1200 euros is approximately the mean income of the Spanish wage distribution.

Only one of the scenarios was presented to each particular class. The idea of not repeating the experiment in the same class but different scenario was to prevent of strategic behavior. Additionally, the intention of including two different wages, such as 1200 and 600 euros, was to determine whether the original level of satisfaction is affected by the absolute wage level. Clearly, once the respondent was given information about the wage of their colleagues, he could learn about his relative income.

In Table 1 we present the basic results of the four scenarios. In the first two columns we show the mean satisfaction level declared before and after information of relative position was given, in column 3 to 6 we present the percentage of respondents where satisfaction fell, remain constant, or increase with respect to the original level when information of the relative position was given.

Insert Table 1

Overall, the reported level of satisfaction changes when respondents learn about their rela-

tive position. In particular, the satisfaction level changes when the respondent's colleagues wage level is above that of the respondent. This findings are in the same line as those that suggest that individual subjective well-being is affected by the individual's relative position.

In first place, observe that there is a positive correlation between in the "veil of ignorance" wage level and the satisfaction declared, i.e. satisfaction is positively affected by the wage level. An original wage of 1200 euros is associated with an approximately a 7.5 mean level of satisfaction or an original level of 700 dollars with 8.10, while 600 euros of an original wage is associated a mean level of satisfaction of nearly 4 or 400 dollars with 6.2-6.3. In the second place, relative standing seems to affect the level of declared satisfaction. When the respondent learns about his colleagues wages, the mean satisfaction level significantly falls when the respondent finds that it his wage is below that of his colleagues. In other terms, earning a lower wage than the reference group, independently of its absolute level, significantly diminishes the respondents level of satisfaction. However, if they earn more than the reference group, there is a mild increase in the mean level of reported satisfaction.

Finally, results from Table 1 suggest that the initial level of wage seems to affect how respondents react when they learn about that their wage is below that of their reference group, but not when they learn about that their wage is above their reference group. In the former case, while all the respondents earning 600 euros diminished their reported satisfaction, only 86% of those earning 1200 did the same. In the latter case, the distribution of reported satisfaction movements (columns 3 to 5) are similar independently of the initial wage level.

In Table 2 we present the cumulative distribution function of declared satisfaction for each of the two, the veil of ignorance and relative position, states for those cases where the respondents learns that he earns less than his colleagues. From this table we can identify

$$\Delta(s) = F(s|RP_i, X_i) - F(s|VI_i, X_i)$$

Insert Table 2

The results in this table shows that the cdf of satisfaction shift left when the respondent learns about that his wage is below that of his colleagues. In other terms, the veil of igno-

rance cdf stochastically dominates the cdf under the relative position state. Additionally, the movement of the cdf clearly depends on the type of students used for the experiments. In particular, engineering students are more radical in the way the cdf changes.

In sum, these findings suggest that learning about the relative position seems to affect the declared subjective well-being, i.e. positional concerns affect declared satisfaction. There is evidence that job could even accept lower wages if their incomes are proportionally higher than their immediate coworkers, i.e. "local status", nobody wants to be in the tail (Frank, 1985).

In the following section we use survey data to discuss whether knowing the relative position in the wage dimension affects subjective well-being of Spanish employees.

### **ESTIMATION THE EFFECT OF RELATIVE POSITION ON SWB**

The data used to carry out the empirical analysis were obtained from the Encuesta de Calidad de Vida en el Trabajo - ECVT (Survey of the Quality of Life at Work). The main target of this survey is to gather information about the workers' labor situation and their attitudes and values with respect to the work they do. The population range is limited to employed persons of 16 and over who live in family homes. The information was gathered in personal interviews conducted at the homes of the employed people selected. The total pooled sample for the years 2001 to 2003 sums up to 18038 observations.

Additionally, following the ideas behind some previous empirical papers, which suggest the importance of homogeneity in the data to be used (Frey and Stutzer, 2002; among others), we have selected a subsample of based on the following criteria . First, we had selected a subsampor of relatively satisfied individuals with their job, leisure and household economic situation. That is, for questions such ass "All things considered how satisfied or dissatisfied are you with your present job", "...your leisure", "...your household economic situation" which where scaled from 1, completely unsatisfied, to 10, completely satisfied, we only considered those who answered five or more. On the one hand, selectivity bias may be mitigated if we use only satisfied workers, i.e. dissatisfied workers are probably

underreport due to the fact that they are more prone to leave employment. On the other hand, we diminish the possibility of response bias, i.e. dissatisfied workers could tend to negatively respond to the survey. Second, we only selected those workers who responded that their jobs match to their educational background. Third, we had selected only public workers, under the believe that their labor conditions, such as the level of effort, are more homogenous. Finally, we had selected an age range between 18 and 65 years old. The final number of observations of this subsample is of 1593.

The measure for individual's subjective well-being is based on the answers to the following question "Taken all together, are you satisfied with your actual life?" The respondent should answer through a scale that goes from 1 -completely dissatisfied- to 10 -completely satisfied. Here we assume as valid the conclusions of the methodological literature that discusses the reliability, validity and comparability of self reported data (Diener, 1984; Levy-Garboua and Montmarquette, 2003; Kahneman, 1999; Manski, 2000; Bertrand and Mullainathan, 2001; Frey and Stutzer, 2002, among other).

In this subsection we use survey data on individuals perception of his relative position in order to discuss whether learning about one's relative position affects subjective well-being. Initially, we try to estimate with survey data the same quantity as in the last section, that is,

$$\Delta(s) = F(s|RP_i, X_i) - F(s|VI_i, X_i)$$

Most surveys do not report information of the individual's perception of his relative position in the wage dimension. This fact explains why in most papers it is needed to predict the individuals' comparison income based on demographic variables. The survey we use has the novelty of reporting the respondent subjective perception of his relative income position in the wage dimension. That is, respondents were asked: "Upto your knowledge and for the type of job you perform, compare your salary to that of the market for the same position. Is it above, below, is correct one or you do not now?".

Observe that from our survey data we can only identify either  $F(s|RP_i, X_i)$  or  $F(s|VI_i, X_i)$ ,

but not both. Hence, in order to estimate  $\Delta(s)$  we build the expression

$$\Delta(s) = [F(s|RP_i, X^*) - F(s|VI_j, X^*)] + [F(s|VI_j, X^*) - F(s|VI_i, X^*)]$$

where  $X^*$  is a matching set of characteristics for individuals  $i$  and  $j$ . As in counterfactual literature, it does not seem too hard to assume that two employees with the same characteristics and ignoring their relative position, i.e. in the veil of ignorance state, will have the similar distribution of SWB. In other terms, individuals with similar characteristics,  $\|X_i - X_j\| < \varepsilon$ , could be expected to have the same SWB distribution  $[F(s|VI_j, X_j) - F(s|VI_i, X_i)] \cong 0$  (Heckman et al. 1997)

Therefore, and under the above assumption, the learning effect on SWB could be estimated by

$$\Delta(s) \cong F(s|RP_i, X^*) - F(s|VI_j, X^*),$$

comparing the SWB distribution of an employee who knows his relative position in the wage dimension to the SWB distribution of an employee who does not know his relative position. Clearly, the above equation can be expressed in terms of stochastic orders, i.e.  $\Delta(s) \geq 0$ , then  $\Pr(S \leq s|RP_i, X^*) \geq \Pr(S \leq s|VI_j, X^*)$ ; under the veil of ignorance the SWB is less likely to take on larger values than under the relative position knowledge. Following, Shaked and Shanthikumar (1994), in Table 3 we present the results of approximating  $\Delta(s)$

Insert Table 3

Overall, there is a higher probability of observing larger of life satisfaction for employee's who know that they earn more than their colleagues in the same occupation. Following with the interpretation of previous sections, learning about one's relative position increases the probability of higher satisfaction values. This evidence is observed in either the whole sample as in the more homogenous public workers sample.

Additionally, in Table 4 we present the results of testing whether the SWB distribution is independent to learning the relative position, i.e. if there is a significant change in the distribution when comparing SWB of individuals who know and who do not know their position in the wage distribution. In this sense, each of the rows shows the  $\chi^2$  - *chisquare*

test of independence between between the "veil of ignorance" state -the reference group- with the other cases. As it is observed, the distributions are not independent to be aware of the position in the wage distribution. Following Dufour and Farhat (2001), we had tested stochastic dominance, finding that when the wage is higher than what the market is paying to other workers with his same occupation-education, then the SWB distribution stochastically dominates the "veil of ignorance" SWB distribution. On the other hand, if the individual learns his wage is lower than what the market is paying to other workers with his same occupation-education, then his SWB distribution is stochastically dominated by the "veil of ignorance" SWB distribution.

Finally, we had estimated the association between SWB and different explanatory variables, following the usual strategies of papers dealing with these issues (see, for example, Luttmer, 2003 or Bride,2003, among others). In order to discuss whether knowing the relative position in the wage distributions affects SWB, in Table 5 we had only include the estimated parameters of those related variables based on a order probit estimation method (Table A2 in the appendix present all the results).

Insert Table 5

Initially, the above results suggest that learning about one's relative position, at least in the wage dimension, affects the perceived subjective well-being. Considering as the reference category those who do not know their relative position in the wage dimension, the effect of learning increases (decreases) SWB if the employee finds that his wage is above or the same (or below) that of other workers with the same matching-occupation category. These findings confirm the correlations observed in the experiment results presented in the last section.

Notice that a possible problem with the order probit estimation results is concerned with the existence of endogeneity derived from a correlation between unobservables determining the SWB and learning process of the relative wage position or due to possible omission of variables. That is, it could be the case that

$$S = X'\beta + \delta WRP + u$$

$$WRP = Z'\lambda + v$$

where  $WRP$  is the wage relative position variable and with  $Cov(u, v) \neq 0$ . In order to discuss this possibility we had followed a two-stage estimation procedure where the  $WRP$  variable was defined as a dummy taking the value 1 if the worker does not know his relative wage position and 0 in other cases.

Insert Table 6

Again, in Table 6 we observe the results of estimating with and without an endogeneity correction. As observed, the estimated parameters obtained from both methods are practically the same and suggesting the same conclusions as discussed above: learning our relative wage position increases our subjective well-being. In the appendix we present the other variables estimation.

## CONCLUSION

The only concern of this paper is to contribute to the literature related with studying whether relative position is associated with subjective well-being. We focused on how learning about one's relative position in the wage distribution affects subjective well-being. Based on an experimental design and non-experimental data, we found that declared life satisfaction is affected by the individual's position in the wage distribution. In particular, learning that one's wage is below his reference group negatively affects SWB.

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Table 1: Experiment result comparing veil of ignorance and after learning the relative position state.

Initial wage	Reference Group	Satisfaction		Satisfaction movement (%)			
		Mean before	Mean after	Increase	Equal	Decrease	Obs.
University of Vigo							
600	300	3.76 (1.48)	4.35 (2.06)	52.4	28.6	19.0	42
600	900	3.90 (1.60)	1.72 (1.10)	0.00	0.00	100.0	61
1200	900	7.79 (1.18)	7.83 (2.07)	52.0	27.6	20.7	29
1200	1800	7.57 (1.93)	3.43 (2.47)	0.00	14.3	85.6	28
University of Uruguay							
400	200	6.20 (1.78)	6.27 (2.28)	33.3	53.3	13.3	15
400	700	6.30 (2.14)	3.43 (1.52)	0.00	10.0	90.0	30
700	400	8.14 (1.50)	8.20 (2.41)	45.3	20.5	35.2	45
700	1500	8.08 (1.38)	5.43 (2.07)	4.00	13.2	83.1	53

Table 2: Satisfaction distribution conditional on information available

University of Vigo <sup>(1)</sup>				
$s$	$\Pr(S \leq s vi)$	$\Pr(S \leq s RP)$	$\Pr(S \leq s vi)$	$\Pr(S \leq s RP)$
	600 vs 900 <sup>(a)</sup>		1200 vs 1800 <sup>(b)</sup>	
2	0.164	0.836	0.036	0.464
4	0.606	1	0.036	0.678
6	0.967		0.214	0.857
8	1		0.678	0.964
9			0.857	0.964
University of Uruguay				
	400 vs 700 <sup>(c)</sup>		700 vs 1500 <sup>(d)</sup>	
2	0.100	0.233	0	0.075
4	0.170	0.700	0	0.302
6	0.400	1	0.170	0.642
8	0.933		0.604	0.962
9	0.970		0.813	1

Note: (1)  $\Pr(S \leq s|\cdot)$  cdf satisfaction conditional on the veil of ignorance state,  $vi$  or  $ri$ , knowing relative income position; (a) Experiment done to a third year engineering class, (b) Experiment done to a second year business class; (c) Experiment done in a first year business class; (d) Experiment done in a third year economic class.

Table 3: Cumulative life satisfaction distribution

Whole Sample <sup>(1)</sup>					
$s$	$\Pr(S \leq s)$	$\Pr(S \leq s vi)$	$\Pr(S \leq s less)$	$\Pr(S \leq s same)$	$\Pr(S \leq s more)$
2	1.64	0.73	3.02	1.17	1.60
4	7.00	8.02	10.81	5.07	4.43
6	34.96	43.99	43.32	29.51	26.37
8	84.66	88.03	87.21	83.08	76.79
9	92.72	94.11	93.93	92.18	86.92
Subsampled Public Worker <sup>(2)</sup>					
2	0.26	-	-	-	-
4	1.04	2.38	0.66	1.09	-
6	19.79	28.57	22.81	18.27	8.51
8	78.75	79.37	85.09	76.83	68.09
9	91.96	93.65	94.52	91.37	78.72

Note: (1)  $\Pr(S \leq s|\cdot)$  cdf life satisfaction conditional on the veil of ignorance sate,  $vi$ ; earning less than the market, *less*; the same as the market, *same*; more than the market, *more*; (2) Public workers satisfied with their work, with their economic position and with their leisure and working in a job which matches their education level.

Table 4: Testing SWB levels between the reference level -not knowing the relative position in the wage dimension-and knowing the relative position of wage.

Whole Sample			
Wage Comparison	$\chi^2 - test$	P-value	Observations
Less than reference	6.61	0.000	1640
Same as reference	7.15	0.000	8022
More than reference	7.34	0.000	474
Subsampled Public Worker <sup>(1)</sup>			
Less than reference	12.73	0.079	456
Same as reference	15.40	0.083	1286
More than reference	14.40	0.025	47

Note: To perform the test we have selected subsamples defined by the individuals in the "veil of ignorance" state plus those individuals defined by each of the columns;(1) Public workers satisfied with their work, with their economic position and with their leisure and working in a job which matches their education level.

Table 5: Relative wage position and Subjective well-being. The omitted category is *Not Knowing*

*Relative Wage Position.*

Relative wage position	Whole Sample		Public Worker <sup>(1)</sup>	
	Coefficient	P-value	Coefficient	P-value
Same wage	.2163556	0.000	.208	0.066
Less wage	-1.268028	0.000	-.73259	0.028
Higher wage	.2845373	0.000	.43465	0.030
Log-income	.2505639	0.000	.29984	0.015

Note:(1) Public workers satisfied with their work, with their economic position and with their leisure and working in a job which matches their education level.

Table 6: Two-stage estimation of Relative wage position and Subjective well-being.

	Whole Sample		Public Worker <sup>(1)</sup>	
Relative wage position	Coefficient	P-value	Coefficient	P-value
OLS				
Not knowing position	-0.251	0.000	-0.254	0.076
logincome	0.536	0.000	0.398	0.010
IV-Two stage <sup>(2)</sup>				
Not knowing position	-0.245	0.000	-0.270	0.060
logincome	0.542	0.000	0.444	0.004

Note:(1) Public workers satisfied with their work, with their economic position and with their leisure and working in a job which matches their education level. (2) Instruments: ratio tenure to experience; experience; 3 dummies for the size of the firm.