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PSYCHOLOGICAL FACTORS IN JOB SATISFACTION

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Abstract

In recent years, researchers have paid increasing attention to "factors" in job satisfaction. The relevance of this topic derives from considering that it can affect labor market behavior in relevant ways influencing productivity, effort, absenteeism, and quits. In this paper, I analyze data from the "Working in Britain, 2000" questionnaire and what I find confirms the effects of the personal condition on job satisfaction, as shown in previous studies. In advance, the analysis I have carried out gives results that are compatible with intuitions coming from studies on psychological incentives: it is important to spread information and to give voice, but it is necessary to choose means perceived as really democratic and credible; pay methods based on material incentives can hit job satisfaction, in particular if they are strictly linked to definite and explicit targets; the presence of a supervisor can be considered as a help, but it must not become a merely control activity; organizing work in teams it could be an easily way to introduce informal mechanisms of control and, at the same time, to increase job satisfaction; the aim of favoring job satisfaction in a gift exchange view could be a good explanation for general training implemented by firms.

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Psychological factors in job satisfaction

Enzo Valentini

1 Introduction

In recent years, researchers have paid increasing attention to "factors" in job satisfaction. The relevance of this topic derives from considering that it can affect labor market behavior in relevant ways, influencing productivity, effort, absenteeism, and quits. Enhancing job satisfaction it could be a good solution to "moral hazard" problems in labor relations.

If job satisfaction is not determined only by material incentives, utility enjoyed by workers in labor relations is determined not only by material factors but psychological ones too. So we have to consider "psychological elements", for example, in utility functions used to model contractual interactions and related moral hazard problems. In this sense, it is useful to link past studies on job satisfaction with recent literature on psychological incentives (in work places), which have mainly to do with experimental economics.

All the past studies on job satisfaction and productivity gains are based on the idea that a satisfied worker is likely to give "extra-effort" (or to avoid absenteeism and quits)[1]; this is possible if we see the labor relation as a gift-exchange in which workers appreciate principal good intentions in building an environment for a satisfying job, and reply "working well". This idea is traceable to Akerlof (1982), who started a research line which has grown thanks to results coming from experimental economics. These results have shown that the concept of self-interest is not enough to understand agents behavior in laboratory experiments simulating situations of strategic relations and that we must consider, at least, altruistic motivations and reciprocity. This last concept is an extension of the gift exchange one: reciprocity means that "in response to friendly actions, people are frequently much nicer and much more cooperative than predicted by self-interest; converse-

[1] Actually, links between job satisfaction and quits have been shown by Freeman (1978), Akerlof et al. (1988). Levine et al. (1990) offer a review of studies suggesting that participation can lead to performance improvements. Ichniowsky et al. (1997) found that participatory practices increase productivity.

ly, in response to hostile actions they are frequently much more nasty and even brutal"[2]. So, experimental results have confirmed, through the reciprocity concept, the "gift exchange tendency" and the importance of studying determinants of job satisfaction.

Inside firms and organizations in general, problems caused by information asymmetry (i.e. moral hazards) could be efficiently faced by adopting governance models based not only on material incentives and monitoring but on psychological motivation too. In general, the target would be to encourage cooperation when it is possible, in such a way as to support information exchanges and economize on transaction costs[3].

Generally, economists tend to avoid data on subjective feelings and as a rule question their usefulness. Clark (1997) and Oswald (1997) give good reasons why survey data on job satisfaction can be used for empirical analysis: first, job satisfaction measures correlate with observable facts such as quit rates (see Clark et al., 1997); second, psychologists usually use such data[4]. Obviously, this is not enough to avoid the main problem: regressing a subjective measure (satisfaction) on subjective factors could generate endogenity problems. So, the best way to interpret results from these studies is to consider them simply as multivariate analyses and to take the possible normative consequences on Human Resources Management merely as useful indications that can be considered by managers in their activity. In any case, the majority of regressors in this paper could considered non subjective.

2 Searching for factors in job satisfaction

Past studies have already shown that job satisfaction is not only determined by material incentives like wages and security. Actually, most empirical studies do not find a significant correlation between wage and job satisfaction. Groot et al. (1999) asses this is due to preference drift, because of a form of adaptation to higher wages. We can briefly sum up previous results on the most studied factors:

- **Gender**. It has been proved by a number of studies that women are more satisfied with their job than men[5]. The main reason for this finding could be that men and women have different expectations from their jobs.

[2]Fehr and Gatcher (2000).

[3]See, for example, Bowles et al. (1998), Bowles et al. (2002).

[4]Blanchflower and Oswald (1999): "it seems difficult to believe that economists have a more acute understanding of the limitations of well-being statistics than do the thousands of psychologists who use such data in their own research".

[5]Clark (1996), Meng (1990), Clark (1997), Groot et al. (1999).

- **Age**. Sloane et al. (2000), Clark et al. (1996), Blanchflower et al. (2001) have observed a U-shaped relationship between age and job satisfaction.

- **Marital status**.People who live in a couple seem to be more satisfied than singles, probably because married individuals are happier in general with their lives[6].

- **Education**. Clark et al. (1996), Sousa-Poza et al. (2000) report that more educated people are likely to be less satisfied with their job, probably due to expectations as in the case of gender

- **Income**. While the wage level is often not correlated with job satisfaction[7], some studies show that relative wage influences job satisfaction, as observed by Hamermesh (2001) and Shield et al. (2002).

- **Establishment size**. Some contributions show that people are more likely to be satisfied in smaller establishments[8].

I aim to improve the study of variables in job satisfaction in view of what is said in the introduction: job satisfaction is extra-material, so we must find other determinants by studying psychological variables. It is known from experimental results that people seem to value and appreciate the "procedure" by which something is done. This is called "procedural utility" and it means, for example, that it is not only important how much one is paid, but the way in which the wage is given (i.e. if it is based on trust or incentives[9]. . In actual fact, material incentives and monitoring could be perceived as a lack of trust and repaid with reduced satisfaction and less effort (or absenteeism) . These considerations are strictly linked with human resources management. In determining their effort, workers could consider if and how information is spread, if and how their voice is really considered by managers, if and how they are monitored and supervised or helped. For these reasons, it is useful to include among possible determinants of job satisfaction some management features, such as how information is spread in firms or how workers' voice methodology is organized.

Before introducing regressors for these "organizational factors", in the next section the data set and methodology used for analysis are presented.

[6]Blanchflower et al. (2001), Clark (1996).

[7]Belfiedl et al. (2002)

[8]Bauer (2004), Idson (1990)

[9]For a useful introduction to "procedural utility", see Frey et al. (2002).

Tabella 1: Data set features

Coverage
Dates of Fieldwork: June 2000-January 2001
Country: Great Britain
Spatial Units: Standard Regions
Observation Units: Individuals
Kind of Data: Numeric data; Individual (micro) level
Universe Sampled
Location of Units of Observation: National
Population: Working individuals aged 20-60 in Great Britain during 2000
Methodology
Time Dimensions: Cross-sectional (one-time) study
Number of Units: 3815 (target) 2466 (obtained)
Sampling Procedures: Multi-stage cluster sample
Method of Data Collection: Face-to-face interview; Self-completion

3 Data and methodology

The analysis is carried out using a British data set: "Changing Employment Relationship, Employment Contracts and the Future of Work Survey (Working in Britain 2000)". This project was designed to identify changes in employment relationships and the contractual basis of employment and to examine their consequences for the future of work. It is based on a questionnaire covering some subjects which are very useful for the aim of this paper: current main job details, organization of work, information and communications, training, benefits and working time, job satisfaction and organizational commitment, job security, personal and family details, etc...

The data's technical features are briefly shown in table 1 as they are presented in the UK Data Archive site.

I use an ordered probit model, the appropriate methodology for categorical

ordered data as a questionnaire data set[10]. With ordered probit it is possible to interpret coefficients signs as a standard regression, but you can not attribute to coefficient values the same meaning as in a standard regression. To analyze the extent of the impact of independent variable changes on the dependent one, it would be necessary to compute marginal effects. However, for the aim of this paper it is sufficient to reason about signs.

4 Analysis and results

The dependent variable, Job Satisfaction, is obtained by the question: "All in all, how satisfied would you say you are with your job?", with possible answers ranging from 1 (completely satisfied) to 7 (completely dissatisfied); the dependent variable actually used in analysis is built reversing the order of the answers, in such a way that it represents job satisfaction in an increasing way. In table 2 variable mean and standard errors are listed.

Among independent variables there are regressors related to **personal conditions**:

- *Gender*, 1 female, 0 male;
- *marital Status*, 1 married, 0 single, divorced or widowed;
- *Child-number* indicates the number of children under 16 in household: 0, 1, 2 or 3 indicating more than 2 children;
- *Age* and age^2, to verify the U-shaped relation reported by previous studies;
- *Education*, with 0 indicating no qualifications, 1 referring to education up to O-level, 2 A-level or equivalents, 3 degree or equivalents. The ordered probit is carried out considering 0 the reference-case and transforming other levels in dummies; with this methodology, used for other variables too, the right way of interpreting results is: is there some significant differences in reported job satisfaction between the reference-case (who has no education) and the other cases taken one by one (O-level, A-level, degree)?

[10] In ordered probit, an underlying score is estimated as a linear function of the independent variables and a set of cut points. The probability of observing outcome i corresponds to the probability that the estimated linear function, plus random error, is within the range of the cut points estimated for the outcome:

$$Pr(outcome_j = i) = Pr(\kappa_{i-1} < \beta_1 x_{1j} + \beta_2 x_{2j} + ... + \beta_k x_{kj} + u_j \leq \kappa_i)$$

where u_j is assumed to be normally distributed. The model estimates the coefficients $\beta_1, \beta_2, ...\beta_k$ and the cut points $\kappa_1, \kappa_2, ..., \kappa_{I-1}$ where I is the number of possible outcomes and κ_0 is taken as $-\infty$ and κ_I as $+\infty$.

Tabella 2: Variables description (n=904)

Variable	**Mean**	**Std. Dev.**	**Min**	**Max**
Job Satisfaction	5.23	1.21	1	7
Inequality	1.49	0.55	1	3
Part time, student	0.01	0.07	0	1
Part time, disable	0.003	0.06	0	1
Part time, preferred	0.15	0.36	0	1
Part time, full not found	0.03	0.16	0	1
Pay increments for who those work hard	0.38	0.49	0	1
Info notice board	0.59	0.49	0	1
Info news sheet	0.46	0.50	0	1
Info magazine	0.39	0.49	0	1
Info website	0.19	0.40	0	1
Info email	0.32	0.47	0	1
Info meetings	0.73	0.44	0	1
Training usable in current job	0.50	0.50	0	1
Training usable by present employer	0.43	0.49	0	1
Training usable in present industry	0.46	0.50	0	1
Training usable in other industries	0.30	0.46	0	1
Voice - Meetings with management	0.67	0.47	0	1
Voice - Employees groups	0.26	0.44	0	1
Voice - Formal suggestion scheme	0.35	0.48	0	1
Supervisor	0.94	0.23	0	1
Formal assessment	0.56	0.50	0	1
Seen all the time	.55	0.50	0	1
Glance on work progress	0.60	0.49	0	1
Explicit target affect pay	0.17	0.38	0	1
Team incentives	0.15	0.36	0	1
Own incentives	0.19	0.39	0	1
Organization incentives	0.26	0.44	0	1
Profit sharing	0.15	0.35	0	1
Relative wage	1.74	0.61	1	3
Education	1.41	1.12	0	3
On going learning	0.81	0.39	0	1
Marital status	0.61	0.49	0	1
Public sector	0.32	0.47	0	1
Team work	0.55	0.50	0	1
Pay negotiable	0.22	0.41	0	1
Promotion probabilities	2.32	1.25	1	5
Gender	0.50	0.50	0	1
Age	38.17	10.97	20	60
Age^2	1577.28	864.14	400	3600
Child number	0.64	0.91	0	3

It is important to notice that a negative correlation between union membership and job satisfaction is widely confirmed by past studies. The main problem is to

analyze the direction of this link; Bryson et al. (2003) studied this topic and found robust arguments to support the endogeneity hypothesis; so, I prefer to exclude "union membership" from analysis.

As suggested by previous studies, wage level turns out to be insignificant in analysis, so I do not include it in the final regression, but I use the relative wage indicator. As stated before, one aim of the analysis is to research whether the way pay is given affects job satisfaction; for these reasons independent variables referring to material incentives are included. Among **pay and pay-methods** regressors I consider:

- *Relative wage*: 1 (my wage is on the low side), 2 (neutral), 3 (my wage is on the high side); this variable is recoded in three dummies where the reference-case is, obviously, the neutral one;
- *Explicit targets affect pay* 1 yes, 0 no;
- *Team Incentives* indicating if part of the pay is determined by rewards related to team performances with 1 yes and 0 no;
- *Individual Incentives* 1 yes, 0 no;
- *Organization Incentives* 1 yes, 0 no;
- *Profit Sharing* 1 yes, 0 no.

The way monitoring and supervising activity is carried out could affect job satisfaction; for this reason variables indicating **monitoring and supervising** are included:

- *Supervisor* indicates if the interviewee has a direct manager or supervisor; 1 yes, 0 no;
- *Formal assessment* indicates if there is someone judging the interviewee's performance in a formal way on a regular basis, 1 yes, 0 no;
- *Seen all the time* is a dummy indicating if the work is carried out in a place where the worker can be seen all the time by a supervisor or manager;
- *Glance on work progress* is a dummy indicating if the supervisor or manager can tell at glance how work is progressing.

Leuven et al. (2002) show that firms investment in general training could be justified because "a reciprocal worker may be willing to give the firm the full return on its investment" gift-exchanging general training with more effort. If this

is true, the first step is that general training must positively affects job satisfaction. Dummies about **training politics** are included, indicating different levels of specific and general training:

- *Training usable in current job* 1 yes, 0 no;
- *Training usable by current employer* 1 yes, 0 no;
- *Training usable in current industry* 1 yes, 0 no;
- *Training usable in other industries* 1 yes, 0 no;
- *Job requires on going learning* 1 yes, 0 no.

The spreading of information from the firm's management could generally be positively correlated with job satisfaction; but if procedural utility is relevant, it is important to consider that different means of info spread could be differently perceived by workers, in particular as concerns their reliability. Dummies about **info spreading forms** are included among regressors, each one indicating (assuming value 1) whether the relative method is used in the interviewee's work place:

- *Info notice board*;
- *Info news sheet*;
- *Info magazine*;
- *Info web site*;
- *Info e-mail*;
- *Info meetings with management*.

The same considerations taken into account for info spreading can be supposed on the subject of the workers' voice: the more chances there are for voicing their opinions, the greater the satisfaction. But, even in this case, it could be crucial to analyze what kinds of voice forms are actually implemented in firms because they should be differently perceived . In ordered probit, there are three dummies on **voice forms**:

- *Meetings with management*;
- *Employees groups*;
- *Formal suggestion schemes*.

Another group of regressors refers directly to **equality and procedural equality** in firms:

- *Gap too big* and *Gap too small* are two dummies obtained by a variable indicating with 2 that the gap between the highest and the smallest wage in a firm is right, with 1 that it is too big and 2 that it is too small; so, the original variable is transformed in such way that the "right gap" is the reference case[11];

- *Pay increments for those who work hard*; 1 yes, 0 no.

Supposing that a **part-time** job can be evaluated differently on the basis of reasons for not having a full time contract, I include four dummies[12]:

- *Part-time, student*;

- *Part-time, disabled*;

- *Part-time, full time not found*;

- *Part-time, preferred*.

All the remaining regressors are included in the last group, which can be named **general features of job**:

- *Promotion probabilities* is a variable ranging from 1 (no chance) to 5 (100%);

- *Pay negotiable*is a dummy indicating whether pay was directly contractible between worker and superiors at the beginning of the relationship;

- *Public sector*, 1 yes, 0 no;

- *Team work*, dummy assuming value 1 if the interviewee works in a group with two or more people.

The choice of including a large number of regressors forces the exclusion from analysis of a lot of observations; this is the price to pay for analyzing specific aspects of the causes of job satisfaction. Ordered probit's results are shown in tables 3 and 4.

All the results concerning factors related to **personal conditions** confirm the findings of past studies: the U-shaped impact of age, the greater satisfaction of

[11]The original variable is showed as "inequality" in table 2.

[12]All the subjects having a part-time job for other reasons are eliminated from analysis because of the difficulty of eventually interpreting their results.

women, the married and the non skilled[13]. I check for number of children because some previous work has hypothesized a relationship which I don't find.

Before including the different causes of having a **part time** job in regression, I tried with a general category including all subjects with a non full time job, which turns out to be positively and highly correlated with job satisfaction. Probably this was due to the fact that the majority of those subjects had chosen this option and was not obliged into it; actually, differentiating the causes, only the volunteer category results significantly correlated with job satisfaction.

General features of job have "expected" signs; on the subject of teamwork, a positive relationship between productivity and job satisfaction has often been hypothesized; more recently, literature on psychological incentives has introduced the idea that the social, informal and reciprocal control in teams should be an efficient auto-monitoring system, which is also preferred by workers, as this result seems to suggest. The greater satisfaction linked to the public sector is not easy to interpret; it is probably due to more job security and/or to a greater involvement in the reason for labor, such as education or health. Allowing workers to negotiate initial pay seems to positively affect job satisfaction; to justify these results it is useful to refer to the idea that the more individuals have control over their own situation, the greater the satisfaction. Findings on promotion probabilities can be considered "obvious".

Negative correlation between a relative wage and satisfaction confirms previous findings. Results on incentives are interesting. In general, generic material incentives for the single worker, team and organization seem not to affect job satisfaction. But if there are explicit targets and they affect **pay**, this reduces job satisfaction. We can argue that it is not merely the fact that the pay is variable that hits workers satisfaction, but the possibility that this variability is linked to explicit targets for which they could feel less than completely responsible.

In general a work-place requiring ongoing learning enhances job satisfaction; it is interesting to notice that the more generic training form (other industries) is significantly related to job satisfaction. This sounds like a confirmation of the Leuven et al. (2002) hypothesis, according to which firms make general training as a "gift exchanging strategy" directed to reciprocal workers.

Results referring to **monitoring and supervising** are very interesting. Considering all of them it is possible to argue that having a superior is not perceived as a problem and it could be appreciate if work progress is, sometimes, visually assessed by him; workers seem to interpret the presence of a superior seeing work progress as a potential help. But when this presence is in excess (*seen all the time*)

[13]On skill it is necessary to note that the non significant coefficient of A-level is probably due to the fact that this category includes few cases, and this is not considered in weighting.

and becomes a formal judgement (*formal assessment*) it is probably perceived as a lack of trust and reduces job satisfaction.

On **inequality** it is important to note that workers seem to aspire to a social context based on meritocracy (*pay increments for who works hard*) and with a not excessive gap between the smaller and the higher wage. In an ideal pay context the gap would be not too high, but there would be a significant wages diversification exclusively related to actual effort of each worker. In general, perceived equality and justice in work place results to be very important in determining job satisfaction. It is crucial to note that these variables on inequality could be strongly affected by subjective perceptions and they can influence results on job satisfaction: if I think that I'm not treated as I deserve, I will probably say that there is inequality of treatment and I'm not satisfyed of my job. So it is important to be careful about these specific results.

The last results confirm that is not only important to spread **info** and give **voice** opportunities, but the way chosen by management to do it could be differently perceived and affect job satisfaction. Informations spreading trough impersonal and "cold" means (i.e. written) might not be well judged by workers and, probably, they are even considered as a way to avoid telling the truth, as the *news sheet* result confirm. On the contrary, if info are given "face-to-face" it is appreciated (*meetings*), probably because this method reduces chance of lying and allows to free questions to be directed to management. The same consideration can be done for voice forms: workers understand that, under the voice point of view, it is useless for them to talk only between themselves (*employees group*), because they feel the need to talk directly to management (*meetings*) and to leave something written and official, probably to avoid future complaints (*formal suggestion scheme*).

5 Conclusions

Analysis carried out in this paper has confirmed the findings of previous studies on the effects of the personal condition on job satisfaction. In advance, ordered probit shows results compatible with intuitions coming from studies on psychological incentives: it is important to spread information and to give voice, but it is necessary that the means chosen to do this are really democratic and credible; pay methods based on material incentives can hit job satisfaction, in particular if they are strictly linked to definite and explicit targets; the presence of a supervisor can be considered a help, but it must not became merely a control activity; organizing work in teams could be an easy way to introduce informal mechanisms of control and, at the same time, to increase job satisfaction; the aim of favoring job satisfaction in a gift exchange view could be a good explanation for general training implemented by firms.

Even if it is important to consider the regression carried out merely as a “multivariate analysis”, because of possible endogenity problems deeply rooted with the study of psychological aspects by survey data, as stated in the introduction, these results could be useful indications for building a modern theory of Human Resources Management practices based on the minimization of transaction costs coming from information asymmetries. To create a job environment able to satisfy all workers’ requirements, involving voice and info needs, could be an efficient way to face moral hazard problems in productive units, recurring to gift exchange with workers (job satisfaction vs effort) and to informal mechanisms of control mainly based on social and psychological relationships.

Tabella 3: Ordered probit results (n=904)

Dependent variable: job satisfaction			
	regressor	**coeff.**	**signif.***
personal conditions	Age	-1,83	⋆
	Age^2	+1,90	⋆
	Marital status	+3,15	⋆⋆⋆
	Gender	+2,10	⋆⋆
	Child number: 1	-0,17	
	Child number: 2	-1,57	
	Child number: 2+	+0,68	
	Education; O-level	-3,36	⋆⋆⋆
	Education; A-level	-1,29	
	Education; degree	-2,77	⋆⋆⋆
part time	Student	-0,65	
	Disabled	+1.08	
	Part time preferred	+2,03	⋆⋆
	Full time not found	+1,39	
general features	Promotion probabilities	+5,12	⋆⋆⋆
	Public sector	+2,58	⋆⋆⋆
	Team work	+1,61	⋆
	Pay negotiable	+1,85	⋆
pay and pay-methods	Relative wage - low	-5,01	⋆⋆⋆
	Relative wage - high	-0,00	
	Explicit targets affect pay	-2,57	⋆⋆
	Team Incentives	-0,49	
	Individual Incentives	+1,41	
	Organization Incentives	-0,25	
	Profit Sharing	+1,33	
training	Job requires ongoing learning	+5,53	⋆⋆⋆
	Training usable in current job	+0,63	
	Training usable by current employer	-0,32	
	Training usable in current industry	-0,81	
	Training usable in other industries	+1,94	⋆

Base group: man, single, no children, no education, full-time, private sector. A variable indicating the number of employees in the firm is included, but results are not shown because they are not statistically significant.

* significance: * 10%, ** 5%, *** 1%.

Tabella 4: Ordered probit results (n=904) - continue

Dependent variable: job satisfaction			
	regressor	**coeff.**	**signif.***
monitoring and supervising	Supervisor	-0,98	
	Formal assessment	-2,05	⋆⋆
	Seen all the time	-2,02	⋆⋆
	Glance at work progress	+1,86	⋆
equality and procedural equality	Pay increments for those who work hard	+2,10	⋆ ⋆
	Pay gap too big	-4,67	⋆ ⋆ ⋆
	Pay gap too small	-1,67	⋆
info spreading forms	Notice board	-0,34	
	News sheet	-2,43	⋆⋆
	Magazine	-0,50	
	Web site	-0,18	
	e-mail	-0,70	
	Meetings with management	+1,79	⋆
voice forms	Meetings with management	+1,78	⋆
	Employees groups	-0,71	
	Formal suggestion scheme	1+,93	⋆⋆

Base group: man, single, non union member, no children, no education, full-time, private sector.

* significance: * 10%, ** 5%, *** 1%.

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