The relationship between absence from work and job satisfaction: Greece and UK comparisons

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ABSTRACT

The paper starts with a literature survey concerning absenteeism and job satisfaction. Most of the literature on absenteeism suggests that absence from work is a complex issue influenced by multiple causes, both of personal and of organizational nature. Job satisfaction has also been identified as one of the factors affecting an employee's motivation to work attendance. There is no universal agreement concerning the relationship between absenteeism and job satisfaction. Some research has found no correlation between these two variables whereas other studies indicate a weak relationship between these two variables. It has also been suggested that absence and job satisfaction might be more strongly related under some conditions, for instance in case of blue collar workers. After a survey of the relevant literature, this study attempts to establish a causal relationship between absenteeism and job satisfaction using a new set of Greek and European data. The paper concentrates on Greek data given that absenteeism has not been the subject of systematic investigation in Greece. The empirical results suggest that there is a weak negative relationship between injury absenteeism and job satisfaction. Furthermore, comparisons are made with similar findings from UK.

Keywords: Job Satisfaction, Absenteeism, Greek labour market

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I. Introduction

In recent years, there has been an increasing interest concerning the economics of absenteeism, spurred by a growing awareness that the economic and social costs of the phenomenon are quite substantial. Besides the cost implications, absenteeism is influenced by many factors which make it even more difficult to quantify, qualify or rectify (Tylczak, 1990). Some of these factors can be family obligations, working conditions, occupational accidents, and distance to work (see Rhodes and Steers 1990; Michie and Williams 2003; Ose, 2005). One of the factors that has been cited by different researchers is the employee's level of job satisfaction in the workplace (e.g. Tylczak, 1990). Furthermore, many studies have concentrated on the relationship between absenteeism and job satisfaction in an attempt to discover ways to reduce absenteeism. In particular, a number of researchers maintain that job dissatisfaction represents the primary cause of absenteeism (e.g. George & Jones 2002). Job satisfaction is generally defined as an employee's attitude toward the job and the job situation. Robbins et al. (2003) define job satisfaction as "the difference between the rewards employees receive and the reward they believe they should receive". Thence, the higher this discrepancy, the lower job satisfaction will be.

The issue of the relationship between absenteeism and job satisfaction has not been the subject of systematic investigation in Greece. Most official Greek public databases provide no data in this regard, except from the Social Insurance Institute (IKA) which offers some primary data on absenteeism. It should also be emphasised that these data are insufficient, because they refer only to private sector employees who are insured by IKA. The most recent IKA Statistical Bulletin for 2006 and 2007 indicates that the level of subsidy for ordinary illness, workplace accidents and maternity leave, is quite significant[1]. According to the fifth European Working Conditions Survey, the percentage of absent days in Greece is 22,7% (1 to 15 days span) and 2% (more than 15 days span). In addition, the percentage of satisfied employees is 63,2%, whereas the percentage of dissatisfied employees is 36,8% (European Foundation for the Improvement of Living and Working Conditions, 2010).

On the contrary, there are sufficient data sources for absenteeism and job satisfaction in the UK. The issue of sickness absence has received ample attention in the UK, as employers and the government pay particular attention to the direct and indirect costs (e.g. statutory sick pay,

[1] According to the most recent IKA Statistical Bulletin for 2006 and 2007, the following totals emerged: 6,337,686 days of subsidy for ordinary illness (2006); 556,848 days (2006) and 600,831 days (2007) of subsidy for workplace accidents; 3,700,647 days of subsidy for maternity leave.

cost of replacement staff, lost output) of absentee staff. Data from the UK Labour Force Survey (LFS) indicate that the sickness absence rate has been fairly stable in recent years at a magnitude of close to 3%. Another measure of the economic cost of sickness absence in the UK can be obtained from the Workplace Employee Relations Surveys (WERS). Over the year 2004, approximately 4,5% of workdays on average were declared by managers as being lost due to sickness absence or absence at their establishments (Pouliakas & Theodoropoulos, 2009; Barham & Begum, 2005). According to the fifth European Working Condition Survey, the percentage of absent days in UK is 41% (1 to 15 days span) and 5,9% (more than15 days span). In addition, the percentage of satisfied employees is 92,6%, whereas the percentage of dissatisfied employees is 7,4% (European Foundation for the Improvement of Living and Working Conditions, 2010). Hence, the percentage of absenteeism and job satisfaction in UK is higher than in Greece.

(Graph 1 about here)

(Graph 2 about here)

In addition, data from the 2001 wave of the European Community Household Panel (ECHP), shows that on a scale from 1 to 6.6 being the highest possible level of job satisfaction, UK employees state an average value of 4.4, while Greek employees state an average value of 3.8 approximately (Oswald & Gardner, 2001).

The paper will investigate the relationship between absenteeism and job satisfaction in Greece and UK. Given the inadequacies of the public Greek databases, the data used in this study has been drawn from a European research project (SOCIOLD). The structure of the paper is as follows. Section II will present an extensive literature survey concerning absenteeism and job satisfaction, as well as other determinants of absenteeism. Section III will describe the data and the methodology. Section IV will present the research findings regarding the statistical significant relationship (if there is any) between absenteeism, job satisfaction and other determinants. A concluding section will close the paper.

II. Literature review

Absence from work is defined as non-attendance when attendance was scheduled or clearly expected. The majority of absences are generally attributed to sickness or incapacity, but there may be other reasons. According to Brown & Sessions (1996), there are three different classes of absenteeism: absence due to sickness, absence due to accidents and a residual class,

interpreted as voluntary absence. The causes of absenteeism are in general multi-faceted, and are influenced not only by the health status of individuals, but also by the social insurance system, the work environment, biological factors, attitudes and commitment to work, macroeconomic conditions and other social and psychological determinants (see Brown & Sessions 1996; Yianiv, 1995).

Flanagan et al. (1974) were the first to explore the economic implications of job satisfaction. Their theoretical framework suggested that as an economy grows, there will be an increase in workers' demands for both pecuniary and non pecuniary rewards. If any combination of these rewards is not deemed to be satisfactory, it will lead to lower productivity and higher levels of strikes, quits and absenteeism. However, Flanagan et al. were unable to find any supporting empirical evidence for their theoretical suggestions. The nature of the problem has been examined more fully in the applied psychology literature (e.g. Chelius, 1981). For instance, Steers & Rhodes (1978) attempt to construct a theory of absenteeism, attributing its incidence primarily to the existence of job dissatisfaction. In particular, job satisfaction was highlighted as the key to an individual's voluntary absence decision.

In a meta-analysis of twenty three studies, Scott & Taylor (1985) used absence frequency to measure the relationship between employee absenteeism and job satisfaction. The stronger association between job satisfaction and absence frequency supported the hypothesis that absence frequency will be more strongly related to job satisfaction than absence duration. According to Allen (1981), absences are understood as the outcome of the worker's labour - leisure choice. The contracted working time is greater than the number of the desired working hours, so employees have an incentive to miss work. A worker is absent whenever the benefits of not working are greater than the costs (Bockerman & Ilmakunnas, 2008). One of the common relevant theories, is the notion that absenteeism is caused by dissatisfied employees avoiding painful work situations. Although absenteeism may be caused by the employee's inability to come to work, motivation to attend work is assumed to be a major factor determining the rate of absenteeism (Scott & Mabes, 1984). Thus, one can argue that job satisfaction is a predictor of absenteeism (see also Siu 2002).

It has to be pointed out though, that there is no universal agreement concerning the exact nature of the relationship between absenteeism and job satisfaction. Some empirical studies have found a significant negative relationship between the two. Waters and Roach (1971) and Hrebiniak and Roteman (1973) reported that the level of frequency of absence was significantly related to job satisfaction. Oldham et al. (1986) suggested that the workers who

felt under-rewarded were less satisfied and exhibited lower performance and higher absenteeism than employees who felt equitably treated. Lau et al. (2003) conducted a meta-analysis on 19 different studies and found a weak job satisfaction effect on absence from work. Moreover, Hoque & Islam (2003) found that job satisfaction contributes negatively to absenteeism, thus the lower the satisfaction levels, the higher absenteeism amongst the sample of workers.

Other studies have challenged those that observed a strong relationship between job satisfaction and absenteeism. More specifically, Nicholson et al. (1976) found that job satisfaction is not a major cause of absence. However, they suggested that under some situational and individual circumstances, there may be some causal relationship. Clegg (1983) and Goldberg & Waldman (2000) also found no relationship between the two variables, while others find a highly negative relationship (Farrell & Stamm, 1988). Spector (2000) has suggested that absence and job satisfaction might be more strongly related under some conditions (e.g. blue collar workers). Scott & Taylor (1985) concluded that the conflicting findings are a result of sampling error and measurement reliability, scale inadequacies and of different measures of job satisfaction and absence.

Many studies argue that job satisfaction and absenteeism are related among employees, but the connection is inconsistent. Most absence research has concentrated on two main themes: the association of personal characteristics with absence and the association of job satisfaction with absence. Job satisfaction and personal characteristics (such as age and family size), have been found to be related to absenteeism in some studies, but not related in others. According to Steers and Rhodes (1978), the inconsistency of these findings may be explained by other variables which moderate these relationships. Scott and Mabes (1984) identified gender as one such moderator. Gender has become a significant employment factor due to the changing nature of the labor force in many countries. Traditionally, it has been assumed that men and women participate in the workforce for different reasons. In the past, men provided the primary source of family income while most women were unpaid homemakers. In more recent years, the increase in the number of single parent households, the feminist movement, civil rights legislation, and inflation have all had an effect on changing the make-up of the workforce and on the nature of the relationship between women and their jobs (for a discussion, see Schultz, 1990). Not only are more women working, but they are also holding more diverse jobs, some of which were previously held only be men (Scott and Mcclellan, 1990). According to Clegg (1983), females tend to be more frequently absent than males, most of the time for unexcused reasons (Fitzgibbons & Moch, 1980). This gap may be due to

differences in the social roles females and males play as well as to differential socialization (Romme,1990). Lau et al. (2003) support these findings and also report that women are generally more absent than men due to domestic and general health issues.

The relevant literature provides some insights concerning the relationship of demographic and socioeconomic characteristics, and the absence rate. More specifically, research on the relationship between age and absenteeism is equivocal. Age has been shown to be negatively related to absence frequency (Lau et al., 2003). This implies that absenteeism is higher amongst younger employees. This relationship can be explained by the fact that older workers usually take up higher responsibility at work, and they will not ask for a sick leave as a result of minor illness. Rhodes (1983) suggested that the relation between age and absenteeism may depend on factors such as the type of absence measures used, whether the job is physically demanding, and the worker's gender. Thus, employee absenteeism might depend on this type of factors and not necessarily on their age.

Furthermore, Alen (1981) & Leigh (1991) found education to be negatively related to absence rate. According to Chaudhury & Ng (1992), more educated employees are less absence prone. Hence, years of education are inversely related to absenteeism (Muchinsky, 1977). Higher educated employees have more autonomy at work and more involvement in their jobs. Moreover, the proportion of employees on fixed – term/temporary contracts that face a greater risk of job loss, is negatively associated with absenteeism, while flexible working time arrangements are found to be related with lower employee absence (Theodossiou & Pouliakas, 2010). Individuals with inflexible working hours are more prone to absence than those with flexible hours and part time jobs (Brown & Sessions, 1996). Bockerman & Ilmakunnas (2008) suggest that absences are more frequent in manufacturing than in other sectors. Finally, Drago & Wooden (1992) supported that absenteeism is higher among females, singles, blue collar workers and low educated employees.

III. Data and Methodology

The data used in this paper was drawn from SOCIOLD, a European research survey. This three – year research project commenced on January 2003 and contains data from six EU countries (UK, France, Finland, Denmark, Netherland and Greece). The final sample, after data processing, consists of 1001 individuals from Greece and UK. The UK sample was the most consistent and similar to the one from Greece regarding our data of interest. The

participants were 45 – 65 years old, and were selected by the method of multistage sampling. The procedure had four stages of random and systematic sampling. The participants responded to a questionnaire of 40 minutes duration, comprising of 58 questions relating to demographic and socio-economic data. The methodological tools for analysing absence data were the OLS regression and the Tobit model. Although OLS regression remains the dominant model of absenteeism research, the Tobit model is more sensitive, according to Baba (1990). The Tobit model is a regression model designed to handle truncated data, where the truncated value occurs with a high probability and the variable is continuously distributed beyond that point. The Tobit model is espoused in order to provide more consistent, reliable and less biased estimates than the OLS model (Baba, 1990; Sturman, 1996).

Our equation of interest is:

$$A_j=\alpha_1+\alpha_2\ JS_j\ +\alpha_3 X_j+\varepsilon_A$$

Assume that Injury Absenteeism for individual j in country c, then $A_{j,}$ the dependent variable, is determined by a variety of factors. JS is Job Satisfaction, which is the basic independent variable, X is a vector of other individual characteristics variables, such as *age, gender, type of employment, education level, industry* dummies and *career,* assumed to influence injury absenteeism. The a's are the associated coefficients, and ε_A is a randomly distributed error term.

Theoretically, Job Satisfaction can simultaneously be affected by injury absenteeism (Brooke, 1986; Clegg, 1983; Erwin, 1995; Kumar & Bakhshi, 2008). Thus

$$JS_j=\gamma_1+\gamma_2 X_j\ +\gamma_3 Z+\varepsilon_{js}$$

Z is a vector of individual characteristics that influences Job Satisfaction and contains one variable that is not in X above. The X variables that were used are: *age, gender, type of employment, education level, industry* dummies and *career*. The Z variable has to be highly correlated to Job Satisfaction but it should not affect Injury Absenteeism directly. The *spouse's contribution to the overall household income*, was used as Z variable.

From the above equation, Job Satisfaction is predicted from each individual. Then these predictions $\boldsymbol{JS_{pr}}$ are placed in the Injury Absenteeism estimation.

$$A_j=\alpha_1+\alpha_2\ \boldsymbol{JS_{pr}}_{\ j}\ +\alpha_3 X_j+\varepsilon_A$$

IV. Results

The sample used in this paper comprised of 547 (55%) males and 454 (45%) females from Greece and UK. The education level of the participants was 35% having completed secondary education and 30% having completed tertiary education. Concerning absenteeism, 89% of the respondents reported no absence due to a recent serious injury at work, 3% reported 1 to 15 days absence and 8% reported more than 15 days absence. In terms of the type of employment, 3,3% reported fixed - term job, 3,4% temporary job while the majority of participants (59%) reported permanent job. Furthermore, 25% of the respondents saw themselves as following a career path. The majority of the individuals (39,5%) worked in other services and 17% worked in engineering and manufacturing industries.

The OLS regression results reveal that there is a strong negative relationship between injury absenteeism and job satisfaction. This is an interesting result given that a specific type of absenteeism is associated with job satisfaction. The negative relationship between injury absenteeism and job satisfaction also supports findings that link absenteeism to continuing high levels of job stress (burnout) and therefore low job satisfaction (see also Yianiv, 1995). Moreover, four predictors exhibited significant relationship to injury absenteeism. The coefficients for males, fixed contract, job satisfaction and UK are statistically significant. For a one unit increase in age, there is a 0.16 point increase in the predicted value of Injury Absenteeism. There is a positive relation between injury absenteeism and sex (males). Some researches suggest that females are more likely to report a positive number of absences, while in other studies men tend to show higher absence percentages than women (Gimeno et al., 2004). According to results below, males seem to have higher percentage of absence. Moreover, injury absenteeism is higher for UK than for Greece which is consistent with Gimeno et al. (2004): absence percentages in Southern European countries seem to be lower than in Central and Northern European countries. The results from the Tobit model are very similar to those from the OLS regression and also reveal a strong negative relationship between injury absenteeism and job satisfaction.

(Table 1 about here)

(Table 2 about here)

Considering the issue of the endogeneity in the Job Satisfaction – Injury Absences relationship, the results using OLS regression are not statistically significant: there is no relationship between injury absenteeism and job satisfaction. Furthermore, the utilization of a

Tobit model, indicates a weak negative relationship between injury absenteeism and job satisfaction. Although prior research suggested that all of the predictors should relate to absenteeism, only three had significant relationship. The coefficients for males, job satisfaction, industry 5 (transport & communication) and UK are statistically significant. For a one unit increase in age, there is a 3.4 point decrease in the predicted value of injury absenteeism. Even if the result is not significant, however, it is consistent with Hoque & Islam (2003) who found a non-significant relationship between age and absenteeism, as well as with Gellatly (1995), who suggested that age is negatively related to absence. In addition, many studies have shown that older workers have better adjustments, better conditions and greater rewards at work than younger workers, thus older workers are more satisfied (see for instance, Siu, 2002).

The results indicate a positive relation between injury absenteeism and sex (males). Previous evidence on gender differences in their associations with absence has been inconsistent. Although in most countries women have higher absence rates than men (Barmby et al., 2002), according to Gimeno et. al (2004), males tend to show higher absence percentages than females. Various factors relating to home and private life have been suggested to explain female excess in absence (Laaksonen et al., 2007). In the present study, the predicted value is higher for men than for women. It is also higher for individuals with temporary and fixed contract than for those with permanent contract. Permanent workers exhibit less absenteeism rates according to Bockerman & Ilmakunnas (2008). Moreover, there is no effect of education on absenteeism. The predicted value is lower for low education individuals, and higher for middle education individuals than for those with high education. This implies that individuals with middle education are more prone to absenteeism. Moreover, injury absenteeism is higher for UK than for is for Greece (this is in agreement with Gimeno et al. 2004).

(Table 3 about here)

Moreover, in order to enhance the statistical analysis, we estimated the effects of marginal changes. The marginal effects were computed for the expected value of the dependent variable conditional on being uncensored. Marginal effects measure the expected instantaneous change in the dependent variable as a function of a change in a certain explanatory variable while keeping all the other covariates constant. The marginal effect measurement is required to interpret the effect of the regressors on the dependent variable and is also needed to infer the substantive significance of coefficients (for a discussion, see Green,

2003). According to the results, marginal effects did not differ from level effects (Tobit regression) in terms of significance.

(Table 4 and Table 5 about here)

V. Discussion and Concluding Comments

Researchers have generally believed that job satisfaction is inversely related to absenteeism. The basis of the theory was that employees will withdraw or be absent from a work situation that is painful and dissatisfying (Waters & Roach, 1971; Muchinsky, 1977). Since the 1970's, many specialists started to question the nature of this relationship. More specifically, the established theory that an undesirable work situation causes absenteeism, had little empirical support (e.g. inconsistent findings) (Nicholson, 1976). Thus, alternative hypotheses concerning this relationship started to appear. One of those advanced by Steers & Rhodes (1978) and Clegg (1983) is that the relationship between job satisfaction and employee absenteeism is not direct. They suggested that undiscovered moderator variables may cause the mixed findings. Other researchers such as Scott & Taylor (1985), argued that sampling errors, scale inadequacies and the use of different measurement instruments are the reasons for inconsistencies and for the non-significant relationships between job satisfaction and absenteeism in previous empirical research.

The belief that dissatisfaction is the primary cause of absenteeism was sustained by four main factors. First, the results of the less methodologically rigorous research on absenteeism and job satisfaction may have been influenced by the operation of experimenter expectations. Second, because of the failure to distinguish between absenteeism and labour turnover, it was inferred that satisfaction is a major cause of withdrawal behavior in general, even though the evidence established that job satisfaction is consistently related to turnover while its relationship with absenteeism is more tenuous. Furthermore, the empirical research derived mainly from industrial psychology specialists, was problematic (e.g. sampling and interpretation errors). Finally, it seems that the belief to the validity of this relationship had to do with important environmental constrains or other relevant moderators which if included, will re-establish the relationship (Chelius, 1981).

In contrast to UK and other European countries, the issue of absenteeism in Greece has not been the subject of systematic investigation. This paper utilized a large sample to test the issue of absenteeism – job satisfaction relationship. In particular, by using OLS and Tobit models, the results indicated a statistically significant inverse relationship between the

number of days employees stay absent due to occupational injury, and their job satisfaction levels. This implies that a low level of employee job satisfaction is associated with an increase in the number and frequency of injury absences. Although prior research suggested that all of the predictors should relate to absenteeism, only three had significant relationship in this paper. A non-significant negative relationship between age and injury absenteeism has been found. This relationship can be explained by the fact that older workers usually take up higher responsibility at work and are more satisfied, appreciating greater benefits. Furthermore, there is a significant relation between injury absenteeism and sex (males). Although in most countries women have higher absence rates than men, in this study males tend to show higher absence percentages than females, which is consistent with other empirical work. Although there is no effect of type of employment and education on absenteeism, permanent workers exhibit less absenteeism rates, while individuals with middle education seem to be more prone to absenteeism. Finally, injury absenteeism is higher for UK than for Greece, hence absence percentages in Southern European countries are lower than in Central and Northern European countries.

Given the limited empirical research based on Greek and UK data, this study attempted to contribute to the complex absenteeism – job satisfaction relationship. However, more similar research and inter country comparisons of absenteeism similarities and differences are needed if appropriate policy recommendations can be identified.

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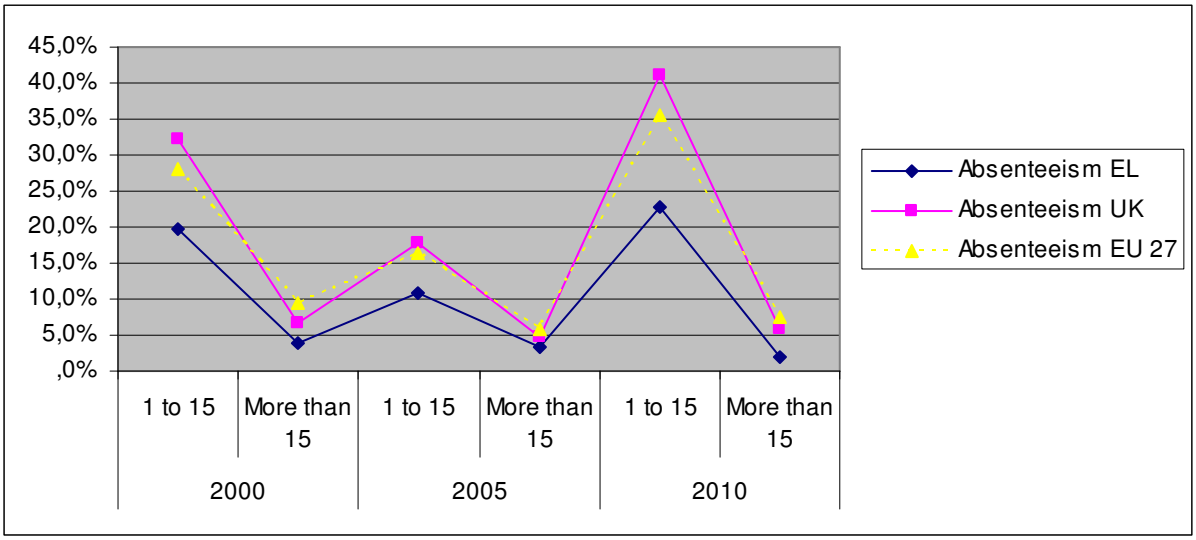
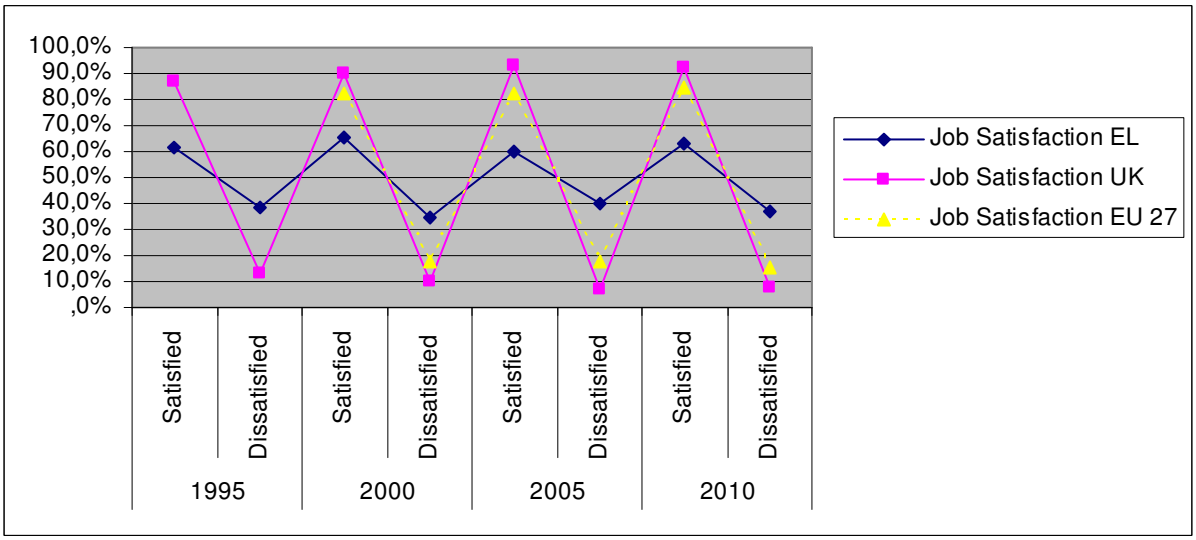
Graph 1. Absent days percentages (Grecce, UK and 27 EU countries average comparison)



The percentage of absent days in Greece is 22,7% (1 to 15 days span) and 2% (more than 15 days span), while the percentage of absent days in UK is 41% and 5,9% respectively. Thus, the percentage of absent in Greece is lower than in UK and in 27 EU countries average (5th European Working Condition Survey, 2010).

Graph 2. Job Satisfaction percentages (Grecce, UK and 27 EU countries average comparison)



The percentage of satisfied employees in Greece is 63,2%, whereas the percentage of dissatisfied employees is 36,8%. On the contrary, the percentage of satisfied employees in UK is 92,6%, whereas the percentage of dissatisfied employees is 7,4%. Thus, the percentage of job satisfaction in Greece is lower than in UK and in 27 EU countries average. Compared to 27 EU countries average, the level of job satisfaction in UK is relatively higher (5th European Working Condition Survey, 2010).

Table 1. Definitions of variables

Variable	Definitions
Absentinju	Injury Absenteeism = number of days off work due to serious injury
Age	Age 45 - 65
Males	Males
Fixedcontr	Fixed contract = lasting between 1 & 3 years
Temporaryc	Temporary contract = lasting less than 12 months
Educlow	Low education
educmiddle	Middle education
Lnjobsatisf	Ln Job Satisfaction
industrydu~1	Agriculture, forestry and fishing
industrydu~2	Construction
industrydu~3	Manufacturing
industrydu~5	Transport & communication
industrydu~6	Banking, finance, insurance
industrydu~7	Other services
Dummyuk	UK
wealth_5	Career opportunity
spouseincd~y	Spouse's contribution to the overall household income
Lnjobsatis_pr	Ln Job Satisfaction predictors

Table 2. Model Output

	OLS		TOBIT	
Variable	**Coef.**	**t-stat**	**Coef.**	**t-stat**
Age	.1694638	0.42	-.1760954	-0.08
Males	10.49176	2.34 **	99.09221	3.46 **
fixedcontr	-7.031383	-2.70 **	-37.14601	-0.50
temporaryc	2.279484	0.56	42.00175	0.64
Educlow	1.639077	0.45	14.08396	0.42
Educmiddle	9.25437	1.92	55.70413	1.89
Lnjobsatisf	-4.918878	-4.08 **	-21.58677	-4.22 **
industrydu~1	-8.424329	-1.44	23.11932	0.28
industrydu~2	-.19483	-0.03	62.61307	1.27
industrydu~3	-4.242494	-0.67	14.00291	0.34
industrydu~5	2.818667	0.33	79.01094	1.52
industrydu~6	2.095163	0.25	-10.37384	-0.16
industrydu~7	-.9018672	-0.16	26.22377	0.75
Dummyuk	20.12243	4.18 **	121.3065	4.15 **
wealth_5	-2.714202	-0.72	-28.145	-0.91
_cons	-24.66702	-0.99	-487.9872	-3.65 **
N	1001		1001	
R^2	0.0664			
Pseudo R^2			0.0288	
F(15, 985)	1.82			
Log likelihood			-932.03101	

* p<.05

** p<.01

The OLS regression and Tobit model results revealed a strong negative relationship between Injury Absenteeism and Job Satisfaction. Four of the predictors (males, job satisfaction, fixed contract, UK) were significantly related to Injury absenteeism.

Table 3. Model Output considering Endogeneity

	OLS		TOBIT	
Variable	**Coef.**	**t-stat**	**Coef.**	**t-stat**
Age	-.353554	-0.84	-3.436051	-1.04
Males	22.86924	1.87	177.7451	2.95 **
fixedcontr	7.901691	0.74	53.6337	0.53
temporaryc	16.69592	1.44	125.7885	1.37
Educlow	-2.6915	-0.55	-12.76569	-0.32
Educmiddle	6.268631	1.38	41.30185	1.25
Lnjobsatisf_pr	-15.7264	-1.80	-91.46024	-1.98 *
industrydu~1	-7.624397	-1.49	33.36843	0.39
industrydu~2	1.85126	0.32	82.10118	1.57
industrydu~3	-2.532072	-0.41	19.81656	0.46
industrydu~5	8.687869	1.01	119.4528	1.97 *
industrydu~6	10.76065	0.98	44.27452	0.59
industrydu~7	.7557147	0.12	35.03581	0.95
Dummyuk	37.46283	2.39 *	249.2506	3.09 **
wealth_5	4.226295	0.85	11.68954	0.27
_cons	-31.66521	-1.13	-558.8731	-3.88 **
N	1001		1001	
R^2	0.0325			
Pseudo R^2			0.0214	
F(15, 985)	1.78			
Log likelihood			-939.03839	
spouseincd~y	*.0560978*	*0.74*	*.3807709*	*0.53*

* p<.05

** p<.01

The OLS regression revealed a non-significant negative relation between injury absenteeism and job satisfaction. In contrary, Tobit model revealed a weak negative relation between injury absenteeism and job satisfaction. A non-significant negative relationship between age & injury absenteeism had been found. There was a significant relation between gender & injury absenteeism (males have higher absence percentages than females). Although there was no effect of type of employment and education on absenteeism, permanent workers exhibited less absenteeism rates, while individuals with middle education were more prone to absenteeism. Finally, Injury Absenteeism was higher for UK than for Greece. The Z variable (spouseincd~y) was not significantly related to Injury Absenteeism.

Table 4. The marginal effects for the expected value of y conditional on being uncensored

	Tobit		Marginal effects after Tobit	
Variable	**Coef.**	**t-stat**	**dy / dx**	**z**
Age	-3.436051	-1.04	-.5627758	-1.04
Males *	177.7451	2.95 **	28.80202	3.00 **
Fixedcontr *	53.6337	0.53	9.343577	0.50
Temporaryc *	125.7885	1.37	23.8949	1.19
Educlow *	-12.76569	-0.32	-2.078074	-0.32
Educmiddle *	41.30185	1.25	6.866331	1.24
Lnjobsatisf_pr	-91.46024	-1.98 *	-14.97987	-1.99 *
industrydu~1 *	33.36843	0.39	5.680767	0.37
industrydu~2 *	82.10118	1.57	14.6514	1.45
industrydu~3 *	19.81656	0.46	3.298136	0.45
industrydu~5 *	119.4528	1.97 *	22.343	1.74
industrydu~6 *	44.27452	0.59	7.605327	0.56
industrydu~7 *	35.03581	0.95	5.791401	0.95
Dummyuk *	249.2506	3.09 **	39.7737	3.16 **
wealth_5 *	11.68954	0.27	1.928511	0.27
y			*108.96221*	

(*) dy / dx is for discrete change of dummy variable from 0 to 1

The Marginal effects on the expected value for y for uncensored observations do not differ from the level effects (Tobit regression) in terms of significance.

Table 5. Sum Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Absentinju	1001	10.57043	57.23549	0	900
Age	1001	52.73427	5.351945	45	65
Males	1001	.5464535	.4980862	0	1
Fixedcontr	1001	.032967	.1786395	0	1
Temporaryc	1001	.033966	.1812323	0	1
Educlow	1001	.2997003	.4583557	0	1
educmiddle	1001	.3556444	.4789474	0	1
Lnjobsatisf	1001	-1.437273	2.63434	-4.815758	1.074565
industrydu~1	1001	.025974	.1591373	0	1
industrydu~2	1001	.0809191	.2728471	0	1
industrydu~3	1001	.1678322	.373904	0	1
industrydu~5	1001	.0599401	.2374944	0	1
industrydu~6	1001	.0619381	.2411635	0	1
industrydu~7	1001	.3956044	.4892245	0	1
Dummyuk	1001	.5734266	.4948264	0	1
wealth_5	1001	.2447552	.4301569	0	1
spouseincd~y	1001	36.62537	33.14451	0	100
Lnjobsatis_pr	1001	-1.437273	1.274887	-4.546059	2.532559