

# **An analysis of job satisfaction of Spanish PhD holders**

## **Abstract**

We analyze the determinants of job satisfaction of PhD holders in Spain. Specifically, we consider overall job satisfaction as well as basic and motivational satisfaction, following Herzberg's typology (based on Maslow's hierarchy of needs). Using representative data for Spain's PhD population, drawn from the Spanish Survey on Human Resources in Science and Technology (2009), we report an analysis by gender and the institutional sector (university and non-university) in which employees work. We employ OLS regressions to identify the determinants of basic and motivational satisfaction in the workplace and an ordered logit model for overall job satisfaction. Results do not allow us to confirm Herzberg's factor differentiation for Spanish PhD holders, since the factors of basic motivation (including salary or working conditions – needs of 'safety') have a bearing on all types of job satisfaction (and not solely on the basic satisfaction of PhD holders). Our results do not show any significant differences by gender. However, it seems that meeting these 'basic' needs is less important for the job satisfaction of PhD holders working in universities. The results seem reasonable in a Southern European country where the monetary conditions of the labor market are worse than those in other developed countries.

**Keywords:** Job satisfaction, PhD, Maslow's typology

## **Introduction**

Holders of doctorate degrees (PhDs) enjoy better economic conditions in the labor market both in terms of rates of employment and earnings. Thus, unemployment in Spain among PhD holders is just 4.3%, compared to 16.0% among university graduates and 25.7% among the active population (INE, 2013); while PhD holders on average earn 60% more than those who have finished secondary school education and roughly twice as much as those who only finished compulsory education (INE, 2010). However, job satisfaction has been shown to depend not solely on earnings, but on a number of non-monetary factors, including job stability, promotion opportunities, conciliation between labor and family life, self-fulfillment, etc. (Vila, 2000). Indeed, the literature tends to indicate that the more highly educated have lower rates of job satisfaction (Clark and Oswald, 1996). Here we ask whether PhD holders, who are at the top of the education system and who enjoy the best working conditions in terms of salaries, are satisfied with their jobs.

The importance of job satisfaction is twofold: on the one hand, employees maximize their well-being; on the other, it is associated with increased productivity and organizational commitment, lower absenteeism and turnover as well as with greater organizational effectiveness (Ellickson and Logsdon, 2001). Job satisfaction can be measured either objectively or subjectively. Objective measures typically refer to the position attained in the hierarchy and, especially, the salary level (for a review, see Canal-Domínguez and Wall, 2013); subjective measures ask workers about their degree of satisfaction in several areas related to their job. In this article we adopt this second approach based on Maslow's typology of job satisfaction and Herzberg's subsequent revision (Maslow, 1943, 1954; Herzberg et al., 1959; Herzberg, 1968).

Maslow famously established a hierarchy of needs (in the shape of a pyramid): from top to bottom, they comprise esteem, affection, safety, and physiological needs. Maslow stressed that the basic levels (safety and physiological needs) have first to be met before the individual can start to crave the higher level needs (although he was at pains to clarify that the levels are interrelated). Additionally, he showed that esteem comprises two levels: a lower one which includes the need for the respect of others, status, and recognition; and a higher one (that of self-actualization) which comprises the need for self-respect, mastery, self-confidence, independence and freedom.

Herzberg (1968) incorporated an additional dual approach whereby not having job satisfaction does not mean a worker is dissatisfied, but rather has no satisfaction. Thus, failing to fulfill the lower order needs in Maslow's pyramid generates dissatisfaction, but achieving them does not serve as a motivator. Rather motivation is achieved when higher-level needs (related to the job itself) are satisfied. Herzberg defined the factors related to working conditions as 'hygiene' factors, which in turn are related to the work environment and which may result in job dissatisfaction. These needs have to be satisfied before higher-level needs emerge and

affect motivation. Thus, personnel policies should focus on the satisfaction of higher-level needs (once those of the lower levels have been fulfilled) in order to increase individuals' motivation (for a critique of Herzberg's taxonomy see Shin and Jung, 2014).

In this study, we analyze the determinants of job satisfaction among PhD holders in Spain. Specifically, we consider overall job satisfaction, and we also look at satisfaction in terms of Herzberg's dual-factor theory of basic (hygiene) and higher (motivation) needs levels. We conduct the analysis for the whole sample and also by subsamples of gender and work sector (university and non-university). The literature seems to suggest that both factors are relevant; however, among Spain's PhD holders Herzberg's distinction is not so clear, since factors related to basic needs (including salary and 'safety' in working conditions) appear to have a bearing on all types of job satisfaction (not only the basic ones as would be expected). Indeed, in our sample, it seems that these 'basic' needs are important for all types of job satisfaction, albeit that factors related to basic needs are less relevant among those working in universities and there are minor differences in the determinants of job satisfaction between men and women.

The study we report here is, we believe, of value for a number of reasons. First, few studies to date specifically consider the job satisfaction of PhD holders, apart from a line of research that examines the job satisfaction of faculty members. Second, unlike most of the research in this field, our study includes many responses related to job satisfaction (a total of thirteen, in fact). This is a highly relevant point given that job satisfaction has been shown to be a complex concept comprising several dimensions. Indeed, various authors suggest that multiple-item scales are preferable to single-item scales in the case of job satisfaction (Oshagbemi, 2006). Third, we take a highly infrequent perspective on satisfaction in educational research (hygiene and motivational), which has more points in common with the perspective provided by human resource management. Finally, we divide the sample into

several groups so as to obtain a better understanding of the determinants of the job satisfaction of different groups of employees.

### **The determinants of the job satisfaction of PhD holders**

The majority of studies analyzing job satisfaction adopt a wide-angled focus with few examining PhD graduates in isolation. Moguerou (2002) and Bender and Heywood (2006) analyze job satisfaction in the United States. Both studies report a U-shaped age profile for job satisfaction (especially among males).

The gender analyses conducted by Moguerou (2002) and Bender and Heywood (2006) show that female PhD graduates enjoy greater job satisfaction than men. This result is in line with what has been referred to as the ‘paradox of the contented female worker’, whereby it is argued that higher levels of job satisfaction among women are related to their lower expectations (see Clark, 1997; Bender et al., 2005). However, Sabharwal and Corley (2009), drawing likewise on SDR data, show that the gender gap in job satisfaction disappears when all demographic, institutional and job-related characteristics are included.

A specific analytical framework seems to be associated with the job satisfaction of academics. Thus, Sabharwal and Corley (2009), report that the majority show male faculty members as having higher levels of overall job satisfaction than female faculty members, particularly as regards benefits and salary received and opportunities for promotion. However, Sabharwal and Corley (2009) found no difference in the satisfaction levels of men and women in certain field, but they reported that men were significantly less satisfied than women in the sciences and health studies. For their part, Kifle and Desta (2012) report that no consensus is reached by existing studies on gender job satisfaction among academics. Considering age and gender, Sloane and Ward (2001), who analyze academics in Scotland, report a negative effect of being female among academics younger than 35 but a positive effect among an older cohort. Ward and Sloane (2000) show that gender (being a man) only has a bearing on promotion prospects.

Moguerou (2002) emphasizes job security both for men and as an important predictor of job satisfaction. However, Bender and Heywood (2006) report just the opposite for those who work in the business sector. Within this same framework of analysis, Oshagbemi (2006), who considers university instructors in the UK, shows that although length of employment in higher education does not correlate with job satisfaction, the longer an individual has been employed at their current university the higher their level of job satisfaction.

Moguerou (2002) reports that the number of hours worked has a positive effect on the job satisfaction of males but a negative effect on females. However, Bender and Heywood (2006) report no effect of the number of hours worked.

Finally, studies that consider the sector in which PhD holders work show that this factor affects levels of job satisfaction and that some of the determinants of job satisfaction may vary according to the sector (Sabharwal and Corley, 2009). Likewise, in their study for the US, Bender and Heywood (2006) show a slightly higher level of job satisfaction among those working in the university as opposed to a non-academic sector. This positive effect is also reported by Moguerou (2002) in his subsample of those holding PhDs.

Cruz and Sanz (2004) find that Spanish PhD graduates not working in a University value job stability. Canal-Domínguez and Wall (2013), show that, in contrast to private sector jobs, working in the public sector or for non-profit institutions increases the level of satisfaction of both male and female PhDs. Likewise, in line with international evidence, women express higher degrees of satisfaction. Moreover, age and having a permanent contract have a positive effect on employee satisfaction. However, the presence of over-education or over-qualification creates dissatisfaction, again in line with international evidence. Finally, civil status has a bearing on satisfaction: compared to single women, married women are more satisfied than married men, whereas the opposite is the case for widows or divorced women. In this context, Di Paolo (2012) considers the specific case of Catalonia and shows that

compared to faculty members PhD recipients working in other sectors are more satisfied with their earnings but they have a lower level of non-monetary satisfaction.

### **Data and Econometric Strategy**

The database is the Survey on Human Resources in Science and Technology (2009), conducted by the INE. This survey provides information about PhD holders from Spanish doctoral programs and who were resident in Spain between 1990 and 2009. The survey includes 13 questions about self-perceived levels of satisfaction with various aspects of work. Accordingly, two composite scales are constructed, namely basic (or ‘hygiene, in Herzberg’s terms) and motivational satisfaction (see table 1).

As shown in Table 1, Men are more satisfied in relation to all the elements making up the scale of basic satisfaction (except in the case of salaries where male and female levels are the same). In the case of motivational satisfaction, men are more satisfied in terms of career opportunities and job autonomy. By employment sector, PhD holders working in the university are more satisfied in relation to most elements of both basic and motivational satisfaction. In contrast, those working outside the university have higher levels of satisfaction only in relation to salary and fringe benefits (basic satisfaction) and responsibility (motivational satisfaction). Our analysis also considers gender by employment sector. In universities, men are more satisfied in terms of basic satisfaction but levels of motivational satisfaction are similar. Men employed outside the university are more satisfied than women in terms of their basic job satisfaction, but we find hardly any differences in terms of their motivational satisfaction.

*(Insert Table 1)*

We propose Ordinary Least Squares regression to identify the determinants of basic and motivational satisfaction. In addition, considering the ordered response for the overall job

satisfaction variable, an ordered logit model is estimated in line with the literature (Bender and Heywood, 2006; Ward and Sloane, 2000).

Job satisfaction is analyzed for the total sample of PhD holders (1), PhD holders working in the non-university sector (2) and PhD holders working at universities (3). Each equation is estimated by gender and for the three different types of job satisfaction (overall, basic and motivational). On the right side of the equations, explanatory variables are represented by elements from different vectors corresponding to the following categories: IC (individual characteristics), LC (labor conditions), DT (doctoral training), AE (academic employment), and RR (Spanish region of residence).

## **Results**

Tables 2 to 4 show the determinants of the job satisfaction. The analysis considers the determinants of overall, basic and motivational satisfaction by gender. Table 2 considers the entire sample, Table 3 includes only those working in universities, and Table 4 those employed elsewhere. For overall satisfaction we consider ordered logit estimations, whereas our analyses of the determinants of basic and motivational satisfaction follow OLS estimations. Table 2 shows the results for the whole sample. In the case of individual characteristics, only one of the variables is significant (married men) – in one of the six regressions. Thus, we can conclude that this variable type is not significant in determining job satisfaction. The same is true of the doctoral training variables. However, most labor conditions have a bearing on job satisfaction: thus, the higher the wage level, the higher the level of overall, basic and motivational satisfaction in both men and women employees. Likewise, having a permanent contract increases all types of satisfaction, whereas the number of hours worked reduces them. The other variables condition job satisfaction to a lesser extent. Thus, having a full-time job increases overall and basic satisfaction in female employees. A close relation between the job performed and the PhD holder's studies increases

overall and motivational satisfaction, while a weak relation reduces basic and motivational satisfaction. We find that a mismatch between the job performed and the PhD holder's qualifications reduces all types of satisfaction in men. The institution in which an employee works and the existence of an educational mismatch have hardly any impact on job satisfaction. Finally, some regional variables are significant.

The results in Table 3 consider only those PhD holders working in universities. In the case of labor conditions, we obtain the following outcomes: the influence of wages is less clear in the case of the university sector; a permanent contract has a positive effect on both male and female satisfaction in the case of overall and basic satisfactions; the number of weekly hours worked reduces all kinds of satisfaction, but only for men; and a full-time job is significant especially in the case of basic satisfaction. The relationship between the job and doctoral studies is positively significant only in the case of a close match (and especially in the case of male PhD holders). No effect of education/qualification mismatch is found, given that this is unlikely among PhD holders employed in universities. As for those variables related to the job position held, being a professor increases all types of satisfaction among male PhD holders. Additionally, being a supervisor of a Master's or PhD thesis increases the motivational satisfaction of men.

Results for PhD holders not working in universities are shown in Table 4. Here again the estimations show few differences with respect to the previous analyses in the case of individual characteristics and doctoral training. Labor conditions, however, are more relevant. The results in Table 4 show that wages have a similar bearing on satisfaction to that described for the whole sample. As such, this variable is more relevant than for those employed in the University sector: low wages significantly reduce the three types of satisfaction among men and women. High wages increase satisfaction (especially in the case of male PhD holders). A



permanent contract increases (especially overall and basic) satisfaction. A full-time job also increases job satisfaction (above all basic satisfaction). As above, the number of hours worked reduces satisfaction. The closeness of the relationship between a worker's doctoral studies and the job performed is again significant; yet, it mainly increases levels of motivational satisfaction. Our results for the educational and qualification mismatch confirm, to some extent, those found for the total sample: overqualified women have lower levels of motivational satisfaction, whereas overqualified men have lower levels of basic and overall satisfaction. As for the institution in which PhD holders work, only men in non-profit organizations show higher levels of motivational satisfaction. For non-university employees, some regional variables are also significant.

## **Conclusions**

Most PhD holders enjoy better labor market conditions, measured in monetary terms (rates of employment and salary). In the preceding study we have analyzed whether they also enjoy higher levels of job satisfaction. In this analysis, our definition of job satisfaction adheres closely to Maslow's typology and the subsequent revision made by Herzberg.

Maslow stresses that the most basic levels of need (safety, and physiological needs) must be met before the individual starts to desire the secondary or higher level needs. In this context, Herzberg (1968) added a dual approach by which the lack of achievement of the lower order needs (in Maslow's typology) generates dissatisfaction but their achievement does not motivate. Motivation is only achieved when higher-level needs (related to the job itself) are satisfied.

In the study we have specifically analyzed the determinants of job satisfaction among PhD holders in Spain. To this end, we consider overall job satisfaction as well as basic and motivational satisfaction following Herzberg's typology. We conducted our analysis for the

whole sample as well as for subsamples based on gender and work sector (university or elsewhere).

Our analysis has revealed several interesting results. Thus, when the whole sample is considered, the variables that can be related to basic motivation (salary, type of contract and workday) have a bearing, with the expected signs, on both basic and motivational job satisfaction (as well as overall satisfaction). However, the variables that can be related to motivational satisfaction affect mainly this type of job satisfaction. As such, it seems that the differentiation between basic and motivational satisfaction in Spain is not so clear in the case of the former, since wages and labor stability increase all three types of job satisfaction among Spanish employees. Our results do not reveal any significant differences by gender. Similarly, other variables related to individual characteristics and PhD training are not significant either.

Our subsample of university employees however presents a clearer differentiation between the factors related to basic and motivational satisfaction. Among these workers, moreover, we find that wage levels have a minor impact on their satisfaction, while variables related to mismatch are not significant (as expected among PhD holders working at the University). Certain 'motivational variables' related to status and mastery, such as being a professor or a PhD advisor, are found to increase male motivational satisfaction (as well as basic satisfaction in the case of being a professor). Among PhD holders not working at a university, wages are relevant for all types of satisfaction (as they are for the whole sample). In general, these results are more similar to those for the whole sample (which was expected given that almost 60% of all employees work outside the university). The rest of the variables (personal and related to training), in common with the whole sample, are hardly significant. Likewise, no significant differences by gender are found in either subsample.

To sum up, the differentiation drawn by Herzberg is not so clear among Spanish PhD holders, since the factors of basic motivation (including salary and working conditions, the so-called ‘safety’ needs) have a bearing on all types of job satisfaction. As such it seems that meeting these ‘basic’ needs is important for the job satisfaction of PhD holders. This is perhaps a reasonable finding in a Southern European country with lower income levels than in other European countries, and where labor relations are not as ‘sophisticated’, to use the terminology of Purcell and Sisson (1983). Yet, these factors related to basic needs do not seem to be so relevant for PhD holders employed in universities.

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**Table 1. Comparison of means for job satisfaction (overall, basic and motivational) across gender and sector**

	<i>Gender</i>			<i>Sector</i>			<i>Non-university</i>			<i>University</i>		
	<i>Mean males</i>	<i>Signif.</i>	<i>Mean females</i>	<i>Mean non-university</i>	<i>Signif.</i>	<i>Mean university</i>	<i>Mean males</i>	<i>Signif.</i>	<i>Mean females</i>	<i>Mean males</i>	<i>Signif.</i>	<i>Mean females</i>
Salary	3.00		3.00	3.03	***	2.95	3.05		3.01	2.93		2.97
Fringe benefits	2.68	*	2.62	2.71	***	2.58	2.75	*	2.66	2.58		2.56
Job stability	3.56	***	3.36	3.42	***	3.53	3.53	***	3.29	3.59	***	3.45
Work location	3.58	**	3.52	3.53	**	3.59	3.56	*	3.49	3.61		3.57
Labor conditions	3.36	***	3.25	3.28	***	3.36	3.32	**	3.23	3.42	***	3.28
<b>Basic satisfaction</b>	3.23	***	3.15	3.19		3.20	3.24	***	3.14	3.23	*	3.17
Career opportunities	2.73	***	2.63	2.57	***	2.83	2.64	***	2.50	2.84		2.81
Intellectual challenge	3.50		3.45	3.32	***	3.69	3.33		3.31	3.71		3.66
Responsibility	3.53		3.55	3.57	***	3.49	3.58		3.57	3.46	*	3.52
Level of autonomy	3.47	***	3.39	3.35	***	3.55	3.37		3.32	3.60	***	3.49
Contribution to society	3.56		3.57	3.58		3.55	3.58		3.57	3.54		3.57
Social status	3.13		3.16	3.13		3.16	3.13		3.12	3.12	**	3.21
Work-life balance	3.17		3.11	3.07	***	3.24	3.05		3.10	3.32	***	3.14
<b>Motivational satisfaction</b>	3.30	*	3.27	3.23	***	3.36	3.24		3.21	3.37		3.34
<b>Overall satisfaction</b>	3.27		3.23	3.19	***	3.33	3.21		3.16	3.34		3.32
<i>Sample size</i>	2219		1741	2279		1681	1251		1028	968		713

**Table 2. Overall, basic and motivational job satisfaction by gender.**

	Overall satisfaction		Basic satisfaction		Motivational satisfac.	
	Female	Male	Female	Male	Female	Male
<i>Individual characteristics</i>						
Age	-0.052 (0.071)	-0.042 (0.062)	-0.014 (0.015)	-0.019 (0.013)	-0.013 (0.014)	-0.017 (0.012)
Age squared	0.000 (0.001)	0.000 (0.001)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Single	-0.084 (0.224)	-0.239 (0.231)	0.019 (0.048)	0.012 (0.049)	-0.029 (0.043)	-0.026 (0.045)
Married	0.088 (0.206)	-0.426* (0.206)	0.036 (0.044)	-0.053 (0.044)	0.006 (0.040)	-0.072 (0.040)
Father with tertiary education	0.035 (0.138)	0.240 (0.128)	-0.001 (0.029)	0.028 (0.028)	0.001 (0.026)	0.048 (0.025)
Private publicly financed	0.072 (0.128)	-0.067 (0.124)	-0.002 (0.027)	-0.032 (0.027)	-0.004 (0.025)	0.003 (0.024)
Private	0.205 (0.130)	-0.044 (0.111)	-0.009 (0.028)	-0.027 (0.024)	0.032 (0.025)	0.007 (0.022)
<i>Labor conditions</i>						
Wage level 1	-1.066*** (0.245)	-1.161*** (0.260)	-0.463*** (0.050)	-0.278*** (0.055)	-0.230*** (0.045)	-0.149** (0.051)
Wage level 2	-0.398** (0.131)	-0.511*** (0.118)	-0.205*** (0.028)	-0.157*** (0.025)	-0.059* (0.025)	-0.080*** (0.023)
Wage level 4	0.467** (0.168)	0.505*** (0.128)	0.092* (0.036)	0.131*** (0.027)	0.088** (0.032)	0.101*** (0.025)
Permanent contract	0.704*** (0.142)	0.716*** (0.141)	0.403*** (0.030)	0.460*** (0.030)	0.057* (0.027)	0.076** (0.027)
Full time job	0.558* (0.249)	-0.019 (0.268)	0.241*** (0.052)	-0.012 (0.057)	0.013 (0.047)	0.059 (0.052)
Hours worked	-0.022** (0.008)	-0.021*** (0.006)	-0.005*** (0.002)	-0.006*** (0.001)	-0.004** (0.001)	-0.004*** (0.001)
Public administration	0.164 (0.185)	-0.111 (0.162)	0.022 (0.039)	-0.053 (0.035)	0.045 (0.035)	-0.005 (0.032)
University	0.391 (0.202)	-0.246 (0.171)	-0.006 (0.043)	-0.105** (0.037)	0.063 (0.039)	0.003 (0.034)
Non-profit organization	0.446 (0.306)	0.194 (0.272)	0.003 (0.065)	-0.076 (0.058)	-0.016 (0.059)	0.085 (0.053)
High relation job	0.612*** (0.139)	0.592*** (0.125)	0.041 (0.030)	0.051 (0.027)	0.156*** (0.027)	0.193*** (0.025)
Low relation job	-0.329 (0.172)	-0.435** (0.162)	-0.059 (0.036)	-0.122*** (0.035)	-0.131*** (0.033)	-0.151*** (0.032)
Mismatch education	-0.006 (0.082)	0.057 (0.078)	0.011 (0.017)	0.040* (0.016)	-0.021 (0.016)	-0.014 (0.015)
Mismatch qualification	-0.126 (0.078)	-0.157* (0.078)	-0.021 (0.017)	-0.050** (0.016)	-0.039* (0.015)	-0.035* (0.015)
<i>Doctoral training</i>						
Natural science	-0.143 (0.293)	-0.316 (0.270)	-0.126* (0.063)	-0.043 (0.059)	0.021 (0.057)	-0.039 (0.054)
Engineering & technology	0.233 (0.362)	-0.235 (0.293)	-0.007 (0.077)	-0.001 (0.063)	0.071 (0.070)	-0.008 (0.058)
Medical science	-0.346 (0.307)	-0.479 (0.284)	-0.150* (0.066)	-0.099 (0.062)	0.092 (0.060)	0.002 (0.057)
Humanities	0.077 (0.311)	-0.151 (0.286)	-0.033 (0.067)	0.025 (0.062)	0.069 (0.060)	0.012 (0.057)
<i>Doctoral training</i>						
Social science	-0.096 (0.302)	-0.069 (0.280)	-0.057 (0.065)	0.037 (0.061)	0.069 (0.059)	0.060 (0.056)
Duration doctoral studies	0.000 (0.002)	-0.002 (0.001)	-0.000 (0.000)	-0.001* (0.000)	0.000 (0.000)	-0.001* (0.000)
Grant	-0.100 (0.124)	0.108 (0.108)	0.040 (0.026)	0.029 (0.023)	0.011 (0.024)	-0.008 (0.021)
Intention to work on research	-0.163 (0.138)	0.220 (0.119)	-0.074* (0.029)	-0.031 (0.026)	0.019 (0.026)	0.047* (0.023)
Regional variables	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Cut1	-3.863* (1.705)	-4.352** (1.516)				
Constant	-0.382 (1.701)	-1.176 (1.512)				
R-squared			0.295	0.234	0.176	0.184
N	1641	2084	1641	2084	1641	2084

**Table 3. Overall, basic and motivational satisfaction for doctorate holders working at the University**

	Overall satisfaction		Basic satisfaction		Motivational satisfac.	
	Female	Male	Female	Male	Female	Male
<i>Individual characteristics</i>						
Age	-0.005 (0.128)	-0.116 (0.101)	0.002 (0.026)	-0.023 (0.019)	0.004 (0.024)	-0.027 (0.017)
Age squared	-0.000 (0.001)	0.001 (0.001)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Single	0.132 (0.379)	0.229 (0.384)	-0.077 (0.078)	0.124 (0.071)	-0.059 (0.071)	0.067 (0.065)
Married	0.431 (0.346)	0.092 (0.350)	-0.011 (0.071)	0.008 (0.065)	0.012 (0.065)	0.012 (0.059)
Father with tertiary education	0.249 (0.232)	0.329 (0.214)	0.019 (0.047)	0.096* (0.041)	0.049 (0.043)	0.054 (0.037)
Private publicly financed	-0.005 (0.229)	-0.160 (0.211)	-0.006 (0.046)	-0.008 (0.040)	0.012 (0.042)	-0.007 (0.036)
Private	0.264 (0.221)	-0.272 (0.187)	-0.021 (0.045)	-0.026 (0.035)	0.029 (0.041)	-0.043 (0.032)
<i>Labor conditions</i>						
Wage level 1	-0.881 (0.465)	-0.637 (0.473)	-0.267** (0.092)	-0.115 (0.088)	-0.178* (0.084)	0.016 (0.080)
Wage level 2	-0.355 (0.210)	-0.555** (0.193)	-0.103* (0.043)	-0.158*** (0.037)	-0.014 (0.040)	-0.022 (0.033)
Wage level 4	0.335 (0.289)	0.353 (0.213)	0.104 (0.059)	0.065 (0.040)	0.139* (0.054)	0.069 (0.036)
Permanent contract	0.629* (0.286)	0.557* (0.264)	0.481*** (0.058)	0.381*** (0.049)	0.088 (0.053)	-0.013 (0.045)
Full time job	0.186 (0.475)	1.003 (0.546)	0.327*** (0.095)	0.255* (0.102)	0.013 (0.087)	0.195* (0.093)
Hours worked	-0.008 (0.013)	-0.038*** (0.011)	-0.002 (0.003)	-0.008*** (0.002)	-0.005 (0.002)	-0.006*** (0.002)
High relation job	0.503 (0.273)	0.769** (0.265)	0.040 (0.056)	0.103* (0.048)	0.138** (0.051)	0.208*** (0.044)
Low relation job	-0.276 (0.470)	-0.341 (0.485)	-0.073 (0.096)	-0.063 (0.089)	-0.120 (0.088)	-0.029 (0.081)
Mismatch education	-0.060 (0.162)	0.243 (0.171)	0.003 (0.034)	0.055 (0.032)	0.001 (0.031)	0.026 (0.029)
Mismatch qualification	-0.089 (0.158)	-0.171 (0.166)	0.017 (0.033)	-0.043 (0.031)	-0.026 (0.031)	-0.040 (0.028)
<i>Doctoral training</i>						
Natural science	-0.076 (0.580)	-0.720 (0.460)	-0.083 (0.121)	0.037 (0.085)	0.004 (0.110)	-0.117 (0.077)
Engineering & technology	0.314 (0.648)	-0.715 (0.484)	0.014 (0.133)	0.034 (0.090)	0.063 (0.122)	-0.134 (0.081)
Medical science	-0.446 (0.652)	-1.442* (0.631)	-0.153 (0.136)	-0.055 (0.116)	0.043 (0.124)	-0.173 (0.105)
Humanities	0.439 (0.593)	-0.711 (0.486)	0.007 (0.123)	0.025 (0.090)	0.062 (0.112)	-0.044 (0.082)
Social science	-0.027 (0.582)	-0.412 (0.467)	-0.079 (0.121)	0.102 (0.087)	0.033 (0.111)	-0.013 (0.079)
Duration doctoral studies	-0.003 (0.003)	-0.003 (0.002)	0.000 (0.001)	-0.001 (0.000)	-0.000 (0.001)	-0.000 (0.000)
Grant	0.068 (0.230)	0.158 (0.204)	0.117* (0.047)	0.026 (0.038)	0.009 (0.043)	0.013 (0.034)
Intention to work on research	0.092 (0.392)	0.245 (0.299)	-0.036 (0.077)	-0.097 (0.057)	0.096 (0.071)	0.032 (0.052)
<i>Academic job related characteristics</i>						
Professor	0.236 (0.605)	0.929* (0.401)	-0.039 (0.125)	0.223** (0.072)	0.079 (0.114)	0.164* (0.065)
Associate	0.077 (0.228)	0.299 (0.199)	0.042 (0.046)	0.058 (0.038)	0.004 (0.042)	0.021 (0.034)
Advisor	0.103 (0.189)	0.130 (0.159)	-0.048 (0.038)	0.046 (0.030)	0.022 (0.035)	0.080** (0.027)
Regional variables	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Cut1	-2.186 (3.114)	-6.059* (2.513)				
Constant	1.254 (3.112)	-2.139 (2.502)				
R-squared			0.289	0.244	0.082	0.107
N	603	825	603	825	603	825

**Table 4. Overall, basic and motivational satisfaction for doctorate holders not working at the University**

	Overall satisfaction		Basic satisfaction		Motivational satisfac.	
	Female	Male	Female	Male	Female	Male
<i>Individual characteristics</i>						
Age	-0.067 (0.095)	-0.034 (0.085)	-0.020 (0.020)	-0.019 (0.019)	-0.016 (0.018)	-0.013 (0.018)
Age squared	0.000 (0.001)	0.000 (0.001)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Single	-0.176 (0.296)	-0.605 (0.318)	0.060 (0.063)	-0.070 (0.071)	0.005 (0.058)	-0.070 (0.065)
Married	-0.073 (0.273)	-0.675* (0.279)	0.048 (0.058)	-0.063 (0.062)	0.018 (0.053)	-0.093 (0.057)
Father with tertiary education	-0.082 (0.191)	0.209 (0.175)	-0.006 (0.040)	-0.018 (0.040)	-0.041 (0.036)	0.024 (0.037)
Private publicly financed	0.128 (0.169)	-0.126 (0.169)	0.034 (0.036)	-0.079* (0.039)	-0.008 (0.033)	0.010 (0.036)
Private	0.224 (0.179)	0.108 (0.149)	0.015 (0.038)	-0.028 (0.034)	0.034 (0.034)	0.051 (0.031)
<i>Labor conditions</i>						
Wage level 1	-1.072*** (0.321)	-1.490*** (0.354)	-0.545*** (0.065)	-0.353*** (0.080)	-0.290*** (0.059)	-0.289*** (0.074)
Wage level 2	-0.420* (0.184)	-0.454** (0.171)	-0.272*** (0.039)	-0.153*** (0.039)	-0.092** (0.035)	-0.133*** (0.036)
Wage level 4	0.575** (0.222)	0.528** (0.173)	0.073 (0.047)	0.167*** (0.039)	0.058 (0.043)	0.092* (0.036)
Permanent contract	0.720*** (0.183)	0.676*** (0.190)	0.367*** (0.038)	0.472*** (0.043)	0.037 (0.035)	0.122** (0.040)
Full time job	0.735* (0.319)	-0.283 (0.328)	0.195** (0.066)	-0.146* (0.074)	0.027 (0.060)	0.041 (0.068)
Hours worked	-0.028** (0.010)	-0.015 (0.007)	-0.006** (0.002)	-0.005** (0.002)	-0.004* (0.002)	-0.003* (0.002)
High relation job	0.649*** (0.176)	0.614*** (0.153)	0.054 (0.037)	0.038 (0.035)	0.158*** (0.034)	0.188*** (0.032)
Low relation job	-0.308 (0.197)	-0.326 (0.177)	-0.033 (0.041)	-0.131** (0.041)	-0.126*** (0.038)	-0.147*** (0.038)
Mismatch education	0.016 (0.101)	0.076 (0.093)	0.014 (0.021)	0.041* (0.021)	-0.014 (0.019)	-0.022 (0.019)
Mismatch qualification	-0.162 (0.096)	-0.193* (0.094)	-0.036 (0.020)	-0.058** (0.021)	-0.046* (0.018)	-0.030 (0.019)
Public administration	0.230 (0.194)	-0.064 (0.167)	0.026 (0.041)	-0.052 (0.038)	0.057 (0.037)	0.027 (0.035)
Non-profit organization	0.518 (0.316)	0.240 (0.276)	-0.013 (0.067)	-0.074 (0.062)	-0.000 (0.061)	0.121* (0.057)
<i>Doctoral training</i>						
Natural science	-0.081 (0.375)	-0.162 (0.363)	-0.132 (0.080)	-0.092 (0.085)	0.026 (0.073)	0.016 (0.078)
Engineering & technology	0.315 (0.508)	0.007 (0.415)	0.042 (0.108)	-0.039 (0.096)	0.100 (0.099)	0.063 (0.089)
Medical science	-0.328 (0.387)	-0.365 (0.365)	-0.140 (0.082)	-0.155 (0.086)	0.114 (0.075)	0.019 (0.079)
Humanities	-0.193 (0.419)	0.133 (0.382)	-0.066 (0.089)	0.026 (0.089)	0.061 (0.081)	0.052 (0.082)
Social science	-0.072 (0.403)	0.098 (0.384)	0.001 (0.086)	0.010 (0.089)	0.102 (0.079)	0.068 (0.082)
Duration doctoral studies	0.003 (0.002)	-0.001 (0.002)	-0.000 (0.000)	-0.001 (0.000)	0.000 (0.000)	-0.001 (0.000)
<i>Doctoral training</i>						
Grant	-0.174 (0.159)	0.043 (0.139)	-0.002 (0.034)	0.032 (0.032)	0.000 (0.031)	-0.005 (0.029)
Intention to work on research	-0.211 (0.160)	0.233 (0.136)	-0.082* (0.034)	-0.018 (0.031)	-0.000 (0.031)	0.041 (0.029)
Regional variables	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Cut1	-4.609* (2.268)	-3.955 (2.088)				
Constant						
Cut1	-1.027 (2.262)	-1.004 (2.083)				
Constant						
R-squared			0.300	0.230	0.177	0.196
N	941	1134	941	1134	941	1134

← - - - Con formato: Justificado