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To cite this article: Maria de Lourdes Machado-Taylor, Virgílio Meira Soares, Rui Brites, José Brites Ferreira, Minoo Farhangmehr, Odília Maria Rocha Gouveia & Marvin Peterson (2016) Academic job satisfaction and motivation: findings from a nationwide study in Portuguese higher education, *Studies in Higher Education*, 41:3, 541-559, DOI: [10.1080/03075079.2014.942265](https://doi.org/10.1080/03075079.2014.942265)

To link to this article: <https://doi.org/10.1080/03075079.2014.942265>



Published online: 31 Jul 2014.



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Academic job satisfaction and motivation: findings from a nationwide study in Portuguese higher education

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Academic staff is a key resource in higher education institutions (HEIs) and therefore has a major role in the achievement of the objectives of these institutions. Satisfied and well-motivated academic staff can build a national and international reputation for themselves and their institutions. Moreover, the performance of academic staff impacts student learning. In this context, the study of academic staff job satisfaction and motivation to perform their professional activities becomes crucial, especially as higher education is traversed by multiple changes. The purpose of this paper is to present and analyze the findings of a nationwide study on satisfaction and motivation of academics. All academics working in Portuguese HEIs were invited to complete a survey online. The data obtained from 4529 academics were extensively analyzed and findings are presented here along with their implications for HEIs in Portugal.

Keywords: job satisfaction; motivation; academic staff; higher education; Portuguese higher education

Introduction

Today's higher education institution (HEI) is an extremely complex social organization. One must examine a multitude of factors and their numerous interactions to even approach an understanding of HEI functions. One cannot minimize the confounding effects introduced by the human factor into social organizations. An important constituent group that contributes to the culture of an institution is the faculty or academic staff. The academic staff is a key resource for HEIs and therefore has a major role in the achievement of the objectives of the institution (Machado-Taylor, Meira Soares, and Gouveia 2010; Machado-Taylor et al. 2011).

Demands on academic staff in higher education (HE) have been increasing and may be expected to continue to increase. The centrality of the faculty role makes it a primary sculptor of institutional culture. The performance of academic staff as teachers and researchers determines much of the quality of the student satisfaction and impacts

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student learning and thus the contribution of HEIs to society. Therefore, the contribution of the academic staff to an HEI has implications for the quality of the institution (Enders 1999; Teichler 2009; Altbach 2003). Although job satisfaction is clearly an issue of importance to the professoriate, those outside academe pay it scant attention. In fact, for many casual observers, it is a moot point rendered meaningless by what is perceived to be the inordinately comfortable working conditions enjoyed by professors. Oversimplified and naive explanations of job satisfaction abound in all sectors of the workforce. Most typical is the mistaken belief that pay incentives alone create effective levels of motivation and thus overall job satisfaction. Serious research, however, has revealed that the concept of job satisfaction is a complex collection of variables that interact in myriad ways. Furthermore, the precise arrangement of these factors differs across segments of the job market. There are intrinsic variables related to personal growth and development and extrinsic factors associated with security in the work environment. There are global trends that impact professors and universities, notably accountability, massification, managerial controls, and deteriorating financial support (Hagedorn 2000; Stevens 2005; Addio, Eriksson, and Frijters 2007). There is also ample and somewhat obvious evidence that job satisfaction is related to employee motivation.

Job satisfaction is important in revitalizing staff motivation and in keeping their enthusiasm alive. Well-motivated academic staff can, with appropriate support, build a national and international reputation for themselves and the institution (Capelleras 2005) in the professional areas of research and publishing. Such a profile may impact the quality of an HEI. At the same time, institutions and their leaders who understand the intricate tapestry of organizational culture have an opportunity to tap into the multiple resources at their disposal and thus manage job satisfaction and employee motivation more effectively.

Although several studies have been examined around the world, little is known in the context of HE in Portugal. Certainly, the important area of academic staff job satisfaction is an under-researched subject in need of further discussion and documentation.

The project 'An Examination of Academic Job Satisfaction and Motivation in Portuguese Higher Education,' financed by the Foundation for Science and Technology, is being developed by the Center for Research in Higher Education Policies by a research team composed by seven members, including a consultant.¹ This is a national study of academic staff satisfaction and motivation in the Portuguese context.

This paper aims to identify the career issues and their impacts on academic staff job satisfaction and motivation and to offer additional insights into relationships and strategies that can promote satisfaction and motivation. The main goal is to help Portuguese HEIs/researchers/professionals, etc., understand the parameters of job satisfaction and motivation in the professoriate.

This paper focuses on the findings from the initial analyses of the responses to a survey applied to academics from private and public HEIs. The questionnaire included questions about the academic career, motivation, and dimensions of satisfaction.

The following sections provide information about the framework of the research; key facts about Portuguese academic careers; methods; results by institutional type, gender, and age group; and a summary and initial conclusions.

Framework of the research

Research has revealed that the concept of job satisfaction is a complex collection of variables that interact in myriad ways. Moreover, according to Seifert and Umbach

(2008), job satisfaction is an important factor as a predictor of the intent to remain in or leave the HE sector.

There is a belief that pecuniary factors are determinant to job satisfaction. However, salary alone is rarely the most important mover in faculty decisions to leave, as defended by Caplow and McGee (1958); Gartshore, Hibbard, and Stockard (1983); Johnsrud and Rosser (2002); Matier (1990); Smart (1990); Toombs and Marlier (1981; all as cited in Ambrose, Huston, and Norman 2005).

Verhaegen (2005) analyzed the recruitment and retention of academic talent as important factors for the success and competitiveness of a business school. The author verified that the most important factors for faculty from both recruitment and retention perspectives were academic freedom, research time, geographic location of the school, and opportunities for professional development. The less important factors for faculty were institutional factors, specifically the reputation of the school, innovativeness, and progressiveness of the school and international orientation (Table 1).

Key facts about the Portuguese academic career

Until the early 1970s, the Portuguese higher education (PHE) system was an elite system attended by a small portion of the population, mostly from the upper classes. The issue with the educational system was that it reproduced the dominant class. There was a situation of great inequality based on socioeconomic origin (Boudon 1973, as cited in Cabrito 2006). Thus, the HE system was not a democratic one, which was the consequence of the very political system itself. After 1974, as a consequence of the democratization of the country, the social demand for HE increased greatly (Cabrito 2006).

Today, PHE is organized into public and nonpublic HE. The legal framework of academic careers is quite different in public and private institutions. The government defines the size of the teaching staff and creates the rules for promotion in public institutions. In private institutions, the size of the academic body, career advancements, and remunerations are defined by the institutional decision-makers. The academic university and polytechnic staff differ in positions, career advancements, and remunerations. Mobility between the subsystems is possible; however, it is not very common. The rigidity of policies and regulations and the lack of a legal framework that supports any kind of mobility inhibit such moves (Meira Soares 2003).

Until 2009, the legal documents that regulate academic careers dated back to 1979 for the university academic staff and to 1985 for polytechnic academic staff. Recently, in 2009, academic careers in public HEIs were changed, although the main structures remain very similar. Not much is known about academic careers in private HEIs (private institutions follow private legislation, which makes their situations more difficult to analyze).

It is not the purpose of this work to delve into details, but the following aspects deserve mention:

- (1) In the university sector, the career structure is reduced to three positions: auxiliary professor, assistant professor, and full professor. All of these positions can be filled only by candidates who have a PhD (a full professor also must have the Portuguese title *Agregado*²), and all of the positions can be filled only after a public competition. In the case of auxiliary professor, the competition must be international. Invited academic staff members have fixed-term contracts

Table 1. Categories and factors used in the survey.

Categories	Factors
The school's culture and values	Academic freedom Stimulating peer community Participation in decision-making processes Identification with school's mission and strategy Availability of resources for new initiatives Innovativeness and progressiveness of the school
The school's reputation and position	Reputation of the school in the academic community Reputation of the school in the business community Prestige/reputation of the department/discipline Composition of the program portfolio International orientation of the school Partners in the school's network
Conditions of employment	Remuneration Career opportunities Job security Nonfinancial reward systems Resources for professional activities Opportunities for sideline activities or additional jobs
Personal and professional development	Balance between work and life Opportunities to work with people outside the school Opportunities and facilities for family Opportunities for personal growth and development Opportunities for professional development Opportunities to pursue cross-disciplinary scholarship
Teaching climate	Teaching time Recognition of teaching achievements Availability of teaching support Availability of teaching facilities Quality of students Participation in executive education
Research climate	Research time Recognition of research achievements Financial resources for research Availability of research support Availability of research facilities Research climate within the school
Work environment	Geographic location of the school Need to speak local language Professional opportunities for partner Campus quality Office quality Competency of administrative staff and support services

Source: Verhaegen (2005).

and may be exempted from the requirement to hold a PhD. The tribunal that fills posts from public competitions must be staffed with a majority of external members. Additionally, an auxiliary professor who holds the required degrees and titles can compete for the post of full professor (which was not previously the case). These new legislations discourage in-breeding, favor internationalization, and encourage mobility.

- (2) In the polytechnic sector, career structures also have changed, and with the exception of one special case (described later), candidates to fill a post, also from public competition, must hold a PhD. A new rank was introduced – Principal Coordinator Professor (*Professor Coordenador Principal*) – and a candidate must hold a PhD and the title of *Agregado*. The tribunals follow the same rules as the university sector regarding the number of external members. One exception exists here as well; given the more professional character of the sector, some people with exceptionally good CVs can be candidates for the professorship. They must hold the title of Specialist, which is awarded after public discussion of the CV and of a professional work presented by them. Invited staff also can exist but with some limitations.
- (3) In the university sector and to a certain extent in the polytechnic sector, incentives can be considered for the development of scientific work, which confers staff conditions for promotion.
- (4) In both sectors, periodic performance evaluations have been introduced and their results may have positive or negative impacts in staff careers.

These are some, but not all, of the main characteristics that we think must be mentioned to enrich the background context of our work.

Table 2 provides data on key characteristics of academic staff in Portuguese HEIs.

As given in Table 2, in 2009, 56.5% of academics were men and 43.5% were women, or slightly more men than women. The vast majority of the academics worked in public HEIs (69.3%). In PHE, 40.9% of the academic staff was teaching in public universities and 28.4% in polytechnic institutes; 19.1% of the academics were in private universities and only 11.7% in private polytechnic institutes. The

Table 2. Academic staff in Portuguese HEIs.

Academic staff	Year	N	%
By gender			
Female	2009	15,756	43.5
Male	2009	20,459	56.5
By institutional type			
Public university	2009	14,803	40.9
Public polytechnic	2009	10,289	28.4
Private university	2009	6899	19.1
Private polytechnic	2009	4224	11.7
By age group			
<30	2009	2274	6.3
30–39	2009	10,518	29.0
40–49	2009	12,296	34.0
50–59	2009	8106	22.4
60+	2009	3021	8.3
By degree of education			
PhD	2008 ^a	14,205	40.1
Master	2008	9472	26.0
Licenciatura	2008	11,217	31.7
Bachelor	2008	261	0.7
Other	2008	225	0.0

Sources: 2009: PORDATA (2011) and 2008: GPEARI (2010).

^aFor this variable, the most recent data are available from 2008.

vast majority of the academics (63%) were between the ages of 30 and 49. Academics younger than 30 and over 60 were less frequent (6.3% and 8.3%). With respect to the degree of education, the highest proportion of academics had a PhD (40.1%), 31.7% had a *Licenciatura*, and 26.8% had a master's degree. The other situations (bachelor's degree and others) are residual.

Method: the survey

Before the distribution of the questionnaire, the research team held three focus groups to determine the factors of satisfaction/dissatisfaction and motivation/demotivation of academics. The information gathered was used in the construction of the questionnaire. Thus, the survey resulted from the review of the literature on this theme and from the concerns expressed by faculty members/participants in the focus groups. The survey was posted online and all university faculty members, including all subgroups (professor, researcher, part-time, full-time, etc.), of all types of Portuguese HEIs (public-private and university-polytechnic) were invited to participate.

The questionnaire was available to all Portuguese academics on the website <http://questionarios.ua.pt/index.php?sid=19766&lang=pt> with the address sent to potential participants. The survey includes questions about the motivation of the academics, their general satisfaction, and about the degree of satisfaction with a variety of aspects related to the academic profession and to the HEI where academics taught (the satisfaction dimensions).

The dimensions of satisfaction considered in this study were: teaching climate, management of the institution/department/unit, colleagues, nonacademic staff (administrative staff, technical, and laboratorial staff), physical work environment, conditions of employment, personal and professional development, institutional culture and values, institutional prestige, research climate, and general satisfaction, as given in [Table 3](#).

All of the academics were invited to complete the online survey. A total of 4529 academics participated in the study.

All quantitative data collected were placed in a database. The database and its subsequent analyses were performed using the Statistical Package for the Social Sciences. Statistical procedures conducted for this paper included descriptive statistics, custom tables, one-way ANOVA tests, independent-sample *t*-tests, and synthetic indices. When three or more groups were compared, we used ANOVA and if significant, we use a multiple comparison test to the post. When the variances are not homogeneous, we used the GAMES-HOWELL. The construction of the analysis dimensions (synthetic indexes) from the information collected from indicators, necessarily fragmented, should be driven by theory. In this sense, as highlighted by Saris (2010), many concepts are measured using multiple indicators. Construction of the analysis adhered to the following criteria: (1) items must be evaluated on quality and should be equivalent to those from other countries (i.e. in translation, retroversion, and expert analysis); (2) weights should be chosen for calculation of composite scores; and (3) the quality of the composite scores must be determined.

From this perspective, the construction of synthetic indices should be completed not by using the simple arithmetic average of the indicators but with a principal component analysis with a single component. The factorial scores are, in this case, the individual scores in the index. Thus: (1) the quality of the items must first be assessed using Cronbach's alpha; (2) the process ensures the weighting of indicators; and (3) the explained variance

Table 3. Dimensions of satisfaction.

Teaching climate	Distribution of teaching service for teachers of one's department/organizational unit Recognition from one's peers Teaching facilities (e.g. classrooms and laboratories) Training of students Results of one's work as a faculty member Degree of autonomy in one's teaching practice Class sizes Organization of schedules
Management of the institution/ department/unit	Those in top management positions in one's institution Those in top management positions in one's department/organizational unit Communication with managers Management response to faculty needs Ability of those in management to innovate Time that those in management take to respond to the needs of faculty
Colleagues	Skills of faculty of one's department/organizational unit <i>Scientific</i> quality of the faculty of one's department/organizational unit compared with faculty of other similar institutions <i>Pedagogic</i> quality of the faculty of one's department/organizational unit compared with faculty of other similar institutions Interaction between faculty members of different courses Cooperation with colleagues from different departments/units Openness to change shown by faculty of one's department/organizational unit
Nonacademic staff (administrative staff, technical and laboratorial staff)	Cooperation of administrative staff in one's institution Cooperation of technical/laboratory staff in one's institution Performance of nonacademic staff in one's institution Adequacy of the number of nonacademic staff for the amount of existing work
Physical work environment	Quality of the office Adequacy of laboratory equipment for one's needs Adequacy of computer facilities for one's needs Adequacy of reviews and books in one's institution to perform one's work Food service (restaurant/bar/canteen) Cleanliness of the institution Equipment available to faculty and their families (e.g. gym, nursery, and living spaces) Existence of an area in which to monitor the students (e.g. ask questions) The fact that one must share an office Existence of meeting space Size of classrooms Availability of parking for faculty

(continued.)

Table 3. Continued.

Conditions of employment	One's remuneration Career opportunities Job security
Personnel and professional development	Conditions one must balance between work and family life Conditions for personal development Conditions for professional development
Institutional culture and values	Academic freedom Participation of faculty of one's institution in decision-making processes Ability to innovate in one's institution
Institutional prestige	Prestige of institution International partners of one's institution National partners of one's institution
Research climate	Efforts of one's institution to improve its image Time to do research Recognition by the institution of one's research work Financial resources to do research Logistical conditions to do research One's research outputs Degree of internationalization of one's research work Opportunities to do research
General satisfaction	One's number of publications/presentations One's job One's institution Opportunity to update knowledge Adequacy of one's skills for one's teaching practice Social prestige of one's job

quantifies the quality of the index. In support of this procedure, it should also be noted that the index can contain indicators with different measurement scales.

Results by institutional type, gender, and age group

Characterization of the respondents by institutional type, age group, and gender

Respondents can be briefly characterized by institutional type, age group, and gender.

Most survey participants worked in public HEIs (79%; universities and polytechnic institutes had 42.8% and 36.2%, respectively). Only 13.2% of the respondents pursued their academic professions in private universities and 7.8% in private polytechnic institutes.

Comparing these numbers with those that relate to the population of all Portuguese academics (Figure 2), we see that about 70% of the academics belong to public HE and only 30% belong to private HE. About 41% of the academics work at public universities and 28.4% teach in public polytechnic institutes. Among the academics in private HE, 19.1% belong to the university subsystem and only 11.7% to polytechnic institutes.

With regard to age groups, respondents were concentrated in age groups 41–50 years (38.2%), 31–40 years (28%), and 51–60 years (23.7%). On average, the age of respondents was 45 years and the mode was 44 years.

Data about the population were similar to those for the numbers of respondents. The age groups for which values are high were 40–49 years (34%), 30–39 years (29%), and

50–59 years (22.4%). The age groups for younger (< 30 years) and older (\geq 60 years) academics are those with less weight (6.3% and 8.3%, respectively).

The distribution of respondents by gender was 50.7% male and 49.3% female.

The genders of the total academics in PHE were verified at slightly more males (56.5%) than females (43.5%). This shows that our sample has relatively more female respondents than the total proportion of academics in PHE.

General satisfaction by institutional type, age groups, and gender

With regard to general satisfaction, the academics were satisfied, with the mean = 6.30 on a scale from 0 to 10 ('extremely dissatisfied' to 'extremely satisfied'). However, general satisfaction was not very high (i.e. was not close to point 10 of the scale) (Table 4).

General satisfaction was higher (i.e. above the average with mean = 0) for those in private institutions, and within this group, the general satisfaction was higher for those in private universities than for the academics in private polytechnic institutes. In public HE, general satisfaction was lower in public universities. Public polytechnic institutes had a value around the average value (-0.031). Using the one-way ANOVA test with a significance level of 0.05, it is clear that these differences in the satisfaction of academics in various institutional types are statistically significant [$F(3) = 18.676$; $p = .000$].

In terms of satisfaction by age group, we found that academics aged between 41 and 50 years and between 51 and 60 years were those who were least satisfied and had the lowest values (-0.68 and -0.40 , respectively). Academics aged 30 years or less reported a higher degree of satisfaction (0.503). Following these academics were those aged 61 years or more and those aged between 31 and 40 years, also with significant degrees of satisfaction (0.100 and 0.053, respectively). Overall, academics at the beginnings of their careers and those who were older (aged 61 years or more) indicated greater satisfaction. Using the one-way ANOVA test at a significance level

Table 4. General satisfaction by institutional type, age and gender.

		General satisfaction				
		<i>N</i>	Minimum	Maximum	Mean	Standard deviation
Institutional type	Public university	1377	0	10	6.1**	1.87
	Public polytechnic	1167	0	10	6.3	1.86
	Private university	425	0	10	6.9**	2.00
	Private polytechnic	252	1	10	6.8**	1.92
	Total	3221	0	10	6.3**	1.90
Age	Under 30 years	143	1	10	7.3**	1.71
	31–40 years	877	0	10	6.4**	1.83
	41–50 years	1198	0	10	6.2**	1.93
	51–60 years	743	0	10	6.2**	1.87
	>60 years	176	0	10	6.5*	2.15
	Total	3137	0	10	6.3	1.90
Gender	Female	1587	0	10	6.3	1.83
	Male	1629	0	10	6.3	1.97
	Total	3216	0	10	6.3	1.90

* $p < .005$.

** $p < .001$.

of 0.05, it is clear that these differences in satisfaction among academics in various age groups were statistically significant [$F(4) = 10.911$; $p = .000$]. The largest difference verified was among academics aged 30 years or less and all of the other age groups.

Most studies have shown that age is associated with academic job satisfaction, and older individuals generally show greater satisfaction with their work (Holden and Black 1996; Near, Rice, and Hunt 1978; Oshagbemi 1997, 2003, all as cited in Platsidou and Diamantopoulou 2009).

In the Portuguese case, we noticed some nuances, including the fact that academics aged less than 30 years show high satisfaction, possibly because the early-career academics feel a big difference when comparing their recent careers in HE with other professions that endure poor working conditions in the country. The dissatisfaction of academics aged 41–60 may be attributed to the change in laws and the working and economic conditions that constrain their promotions, contrary to their expectations when they joined academia.

General satisfaction of academics was similar for women and men, but men seemed to be slightly more satisfied.

However, using the independent-samples *t*-test at a significance level of 0.05, we found that the difference between women and men was not statistically significant [$t(2998.834) = -0.186$; $p > .05$]. This result coincides with results of other studies in other countries. Authors such as Ward and Sloane (2000), Santhapparaj and Alam (2005), and Stevens (2005) found that women and men expressed similar levels of satisfaction.

Satisfaction dimensions

The dimensions of satisfaction considered in this study were chosen after an extensive review of the literature and the analysis of questionnaires developed by experts in the area of academic job satisfaction and motivation. These dimensions are: teaching climate; management of the institution/department/unit; colleagues; nonacademic staff (administrative and technical and laboratorial staff); physical work environment; conditions of employment; personal and professional development; institutional culture and values; institutional prestige and research climate.

Our analysis of the synthetic indexes for each dimension of satisfaction verified that the higher values are in the dimensions of nonacademic staff (administrative and technical and laboratorial staff; mean = 6.3), teaching climate (mean = 6.0), and colleagues (mean = 6.0). On the contrary, the dimensions for which academics expressed less satisfaction were research climate (mean = 4.2) and conditions of employment (mean = 4.3) (Table 5).

The results are consistent with the conclusions of Ssesanga and Garrett (2005) that academics were relatively satisfied with coworker behavior and intrinsic factors of teaching. Ward and Sloane (2000) found that academics were most satisfied with the opportunity to use their own initiative, with relationships with their colleagues, and with the actual work; they were least satisfied with promotion prospects and salary. In the present study, academics were least satisfied with conditions of employment and research climate.

The analysis of academics' satisfaction with the dimensions of nonacademic staff, physical work environment, conditions of employment, and institutional culture and values by gender, using the independent-samples *t*-test at a significance level of 0.05, we verified that the difference in satisfaction between the genders for these aspects was not statistically significant.

Table 5. Satisfaction dimensions (synthetic index).

	Valid <i>N</i>	Minimum	Maximum	Mean	Standard deviation
Satisfaction with teaching climate	3870	0	10	6.1	1.53
Satisfaction with management of the institution/department/unit	3667	0	10	5.3	2.52
Satisfaction with colleagues	3709	0	10	6.1	1.94
Satisfaction with physical work environment	1729	0	10	5.3	1.95
Satisfaction with nonacademic staff (administrative staff, technical, and laboratorial staff)	3059	0	10	6.4	1.94
Satisfaction with conditions of employment	3919	0	10	4.3	2.41
Satisfaction with personal and professional development	3952	0	10	5.3	2.49
Satisfaction with institution: culture and values	3849	0	10	5.7	2.20
Satisfaction with institution: prestige	3683	0	10	5.8	2.28
Satisfaction with research (only researchers <i>N</i> = 3327)	2911	0	10	4.2	2.04

With respect to the dimensions of teaching climate, management, colleagues, personnel and professional development, institutional prestige, and research climate, and the degree of satisfaction with these aspects, using the same test, we concluded that there are statistically significant differences between the genders.

Males (mean = 6.1482) were more satisfied than females (mean = 6.0121) with teaching climate; females (mean = 5.4210) were more satisfied than males (mean = 5.1321) with management; females (mean = 6.1826) revealed more satisfaction than males (mean = 5.9532) with colleagues; males expressed more satisfaction (mean = 5.5500) than females (mean = 5.1712) with personal and professional development; females (mean = 5.9437) revealed more satisfaction than males (mean = 5.6011) with institutional prestige; and males (mean = 4.4818) were more satisfied than females (mean = 4.0807) with research climate.

With respect to satisfaction with physical work environment by age groups, there were no statistically significant differences [$F(4) = 1.178$; $p = .319$]. The differences in satisfaction with teaching climate by age group were clear. Using the one-way ANOVA test at a significance level of 0.05, it was evident that these differences in satisfaction among academics in various age groups were statistically significant [$F(4) = 5.114$; $p = .000$]. The largest difference verified was among academics aged 30 years or less (the most satisfied; mean = 0.333) and the age group 41–50 years (mean = -0.024); for respondents aged 51–60 years the mean was -0.018, and for the 31–40 group, the mean was 0.053. Academics aged 61 years or more years were the second most satisfied group of academics for the teaching climate dimension (mean = 0.144).

With respect to differences in satisfaction with colleagues by age group, differences in satisfaction were statistically significant [$F(4) = 6.650$; $p = .000$]. The largest difference verified was among academics aged 30 years or less (the most satisfied; mean = 0.438) and all the other age groups: for those aged 31–40 years, the mean was 0.027; for the 41–50 year group, the mean was -0.0004; for those aged ≥ 61 years, the mean was

−0.040; and for those in the 51–60 year group, the mean was −0.052. Thus, it seems that older academics were more dissatisfied with colleagues.

Differences in satisfaction with the nonacademic staff dimension by age group were statistically significant [$F(4) = 7.595$; $p = .000$]. The largest difference confirmed was among academics aged 30 years or less (the most satisfied; mean = 0.450) and all the other age groups: for those aged ≥ 61 years, the mean was 0.155; for the 31–40 group, the mean was 0.035; for those aged 51–60 years, the mean was −0.037; and for the 41–50 year group, the mean was −0.061. Therefore, academics aged between 41 and 60 years were the most dissatisfied with nonacademic staff. Younger academics (aged ≤ 30 years) were the most satisfied with this dimension of the academic profession.

Differences in satisfaction with the personal and professional development dimension by age group were statistically significant [$F(4) = 11.817$; $p = .000$]. The largest difference confirmed was among academics aged 30 years or less and those aged 61 years or more (the most satisfied; means = 0.354 and 0.347, respectively) and academic staff aged between 31 and 60 years. Academics who were most dissatisfied were those aged between 41 and 50 years with a value below the average (mean = −0.079).

With respect to satisfaction with the research climate dimension by age group, there were statistically significant differences [$F(4) = 4.791$; $p = .001$]. The largest difference confirmed was among academics aged 61 years or more (the most satisfied with research climate; mean = 0.332) and those academics aged between 41 and 50 years (the most dissatisfied with research climate; mean = −0.045).

Regarding satisfaction with the management of the institution/department/unit dimension by age group, the group of academics that was most satisfied were those aged 30 years or less (mean = 0.526). The most dissatisfied academics with this aspect were those aged between 41 years and more, with negative means: 41–50 years (mean = −0.062); 51–60 years (mean = −0.048); and ≥ 61 years (mean = −0.069).

The one-way ANOVA test revealed statistically significant differences [$F(4) = 11.363$; $p = .000$] between satisfaction of academics aged 30 years or less (the most satisfied) and the satisfaction of all the other academics (aged > 31 years). In addition, academics aged 31–40 years expressed more satisfaction than those aged between 41 and 50 years.

With respect to satisfaction with the conditions of employment dimension by age group, the academics aged 31–40 years and 41–50 years were the most dissatisfied (means were −0.066 and −0.060, respectively). The most satisfied were the older academics: those aged 51–60 years (mean = 0.147) and those aged 61 years or more (mean = 0.251). The one-way ANOVA test revealed statistically significant differences [$F(4) = 8.803$; $p = .000$] between satisfaction of academics aged 31–40 years and 41–50 years (less satisfaction) than those aged 51 or more years (more satisfaction).

With regard to satisfaction with the institutional culture and values dimension by age group, academics most satisfied were those aged 30 years or less (mean = 0.416), followed by those aged 31–40 years (mean = 0.035). Academics aged 41–50 (mean = −0.024), 51–60 years (mean = −0.020), and 61 or more years (mean = −0.003) were dissatisfied.

The one-way ANOVA test revealed statistically significant differences [$F(4) = 6.021$; $p = 0.000$] between the satisfaction of academics aged 30 years or less (expressed more satisfaction) and that of all of the other academics aged 31 years or more (expressed less satisfaction).

Finally, for satisfaction with the institutional prestige dimension by age group, the most satisfied academics were those aged 30 years or less (mean = 0.333); the most dissatisfied were those aged 41–50 years (mean = -0.058).

The one-way ANOVA test revealed statistically significant differences [$F(4) = 4.760$; $p = .001$] between satisfaction of academics aged 30 years or less (expressed more satisfaction) and academics aged 31–40 years, 41–50 years, and 51–60 years (indicated less satisfaction or dissatisfaction).

Given the above, the analysis of satisfaction dimensions by institutional type revealed some important details.

The differences in satisfaction with the teaching climate dimension by institutional type were clear. The one-way ANOVA test at a significance level of 0.05, revealed statistically significant differences in satisfaction with this aspect by institutional type [$F(3) = 35.611$; $p = .000$]. There is a huge difference among academics from public HEIs, who had negative means and were thus more dissatisfied (-0.120 for public universities and -0.006 for public polytechnic institutes) and academic staff from private HEIs, who were more satisfied (0.358 for private universities and 0.366 for private polytechnic institutes).

The one-way ANOVA test at a significance level of 0.05 revealed statistically significant differences in satisfaction with the management dimension by institutional type [$F(3) = 37.964$; $p = .000$]. There was a large difference among academics from public universities (mean = -0.215; more dissatisfied) and academics from private universities (mean = 0.276) and private polytechnic institutes (mean = 0.265; more satisfied). There were no significant differences among those from public polytechnics.

With respect to satisfaction with the dimension personnel and professional development by institutional type, academics in public HE (public polytechnic institutes and public universities) were the most dissatisfied, with values below the average (-0.035 for public polytechnic institutes and -0.031 for public universities). The more satisfied academics were those in private universities (mean = 0.241). This difference is statistically significant [$F(3) = 10.062$; $p = .000$].

With regard to satisfaction with the institutional prestige dimension, using the one-way ANOVA test at a significance level of 0.05, it was evident that there are statistically significant differences [$F(3) = 9.948$; $p = .000$]. Academics at public polytechnic institutes were the most dissatisfied (mean = -0.089), followed by those at public universities (mean = 0.000); the most satisfied are those who worked at private universities (mean = 0.230).

Regarding satisfaction with the colleagues dimension by institutional type, the more satisfied academics were those at private universities (mean = 0.408), followed by those at private polytechnic institutes (mean = 0.331). The most dissatisfied academics with this aspect were those at public universities (mean = -0.137), followed by those at public polytechnic institutes (mean = -0.014).

The one-way ANOVA test showed statistically significant differences [$F(3) = 38.316$; $p = .000$] between the satisfaction of academics at private universities and private polytechnic institutes (the most satisfied) and the satisfaction of the academic staff working at public universities and public polytechnic institutes (the most dissatisfied).

Academics who were more satisfied with the nonacademic staff dimension were those at private universities (mean = 0.508), followed by those at private polytechnics (mean = 0.448). The most dissatisfied academics with this aspect were those at public universities (mean = -0.172), followed by those at public polytechnic institutes (mean = -0.052).

The one-way ANOVA test proved that there were statistically significant differences [$F(3) = 54.496; p = .000$] between satisfaction of academics at private universities and private polytechnic institutes (the most satisfied) that those who worked at public universities and public polytechnic institutes (the most dissatisfied).

Academics who were more satisfied with the physical work environment dimension were those at private universities (mean = 0.300), followed by those at private polytechnic institutes (mean = 0.208). Academics from public universities were dissatisfied (mean = -0.149). The value for academics at public polytechnic institutes was close to the average (mean = 0.053).

The one-way ANOVA test confirmed that there are statistically significant differences [$F(3) = 10.815; p = .000$] between the satisfaction of academics at public universities (less satisfied) and those who worked at public polytechnic institutes, private universities, and private polytechnic institutes (more satisfied).

With respect to satisfaction with the conditions of employment dimension, academics who were more satisfied with this aspect were those who taught at private universities (mean = 0.232). Academics at public polytechnic institutes and at public universities showed negative values (-0.055 and -0.024, respectively). Thus, academics at public polytechnic institutes were the most dissatisfied with conditions of employment.

The one-way ANOVA test confirmed that there are statistically significant differences [$F(3) = 9.314; p = .000$] between the satisfaction of academics at private universities (more satisfied) and those at public universities and public polytechnic institutes (less satisfied).

Regarding satisfaction with institutional culture and values, academics who were more satisfied with this aspect were those who taught at private universities (mean = 0.297), followed by those at private polytechnic institutes (mean = 0.258). Academics at public universities and public polytechnic institutes expressed negative values (-0.105 and -0.010, respectively).

The one-way ANOVA test validated statistically significant differences [$F(3) = 21.983; p = .000$] between satisfaction of academics at private HEIs (universities and polytechnic institutes; satisfied) and those at public HEIs (universities and polytechnic institutes; dissatisfied).

Academics who were more satisfied with the research climate dimension were those who taught at private universities (mean = 0.184), followed by those who worked at public universities (mean = 0.150). Academics who were more dissatisfied were those at public polytechnic institutes (mean = -0.211), followed by those at private polytechnic institutes (mean = -0.075). The one-way ANOVA test showed statistically significant differences [$F(3) = 24.434; p = .000$] between the satisfaction of academics at universities (public and private; satisfied) and those at public polytechnic institutes (dissatisfied).

Overall, Portuguese academics are not very satisfied. These findings reflect those of Portuguese changing academic profession (CAP) respondents. The CAP findings placed Portugal among the countries with lower levels of overall satisfaction. Only South Africa showed a lower level of overall satisfaction among academics (Dias et al. 2012).

Motivation by institutional type, age groups, and gender

Academics were asked about their motivation (i) to teach; (ii) to do research; (iii) to serve the community; (iv) to participate in the governing bodies; (v) to work in their present institution; and finally (vi) to remain as a faculty member in HE.

Table 6. Motivation (synthetic index).

Motivation	Mean	Minimum	Maximum	Standard deviation
	7.0	0.00	10.00	1.78

Considering a scale from 0 to 10 (extremely demotivated to extremely motivated), the present research verified that academics in PHE are motivated (mean = 7). However, motivation was not very high (i.e. not close to point 10 of the scale; Table 6).

With respect to job motivation by institutional type, custom tables revealed that academics in private HE were more motivated in the academic profession (values for private universities and private polytechnic institutes were above the mean [0]; 0.320 and 0.281, respectively). The more demotivated academics were those who worked at public universities (-0.177), followed by those at public polytechnic institutes (0.052).

The one-way ANOVA test, at a significance level of 0.05, showed that these differences in motivation among academics at different institutional types were statistically significant [$F(3) = 36.017$; $p = .000$], except for the difference between motivation of the academic staff at private polytechnic institutes and private universities, which was not statistically significant (Figure 1).

In the analysis of job motivation by age groups, academics aged between 51 and 60 years and between 41 and 50 years were those who were least motivated, with the lowest values (below the average of 0 at -0.043 and -0.024, respectively). Academics aged 30 years or less were the most motivated (0.444). Those aged 31–40 years and academics aged 61 years or more were next, with a value of 0.025.

The one-way ANOVA test, at a significance level of 0.05, confirmed that these differences were statistically significant [$F(4) = 7.157$; $p = .000$]. The largest difference verified was among academics aged less than 30 years and all of the other age groups (Figure 2).

Results showed that women seem to be more motivated than men in PHE (values were 0.066 for women and -0.051 for men). The test independent-samples t -test, at

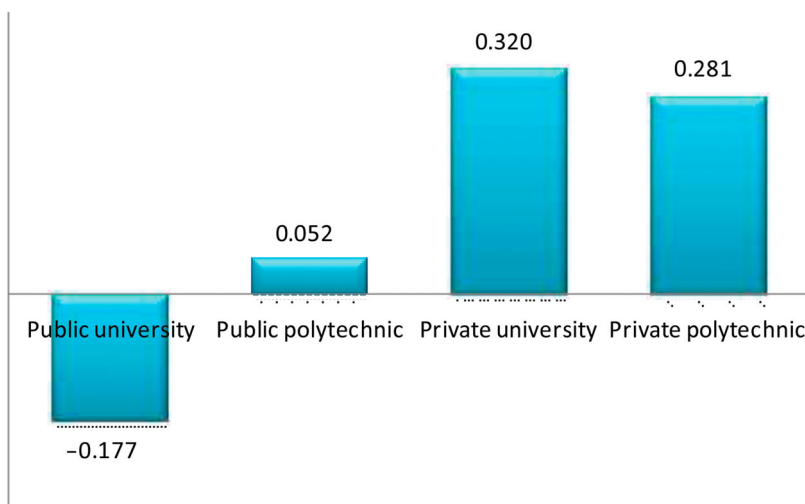


Figure 1. Job motivation by institutional type.

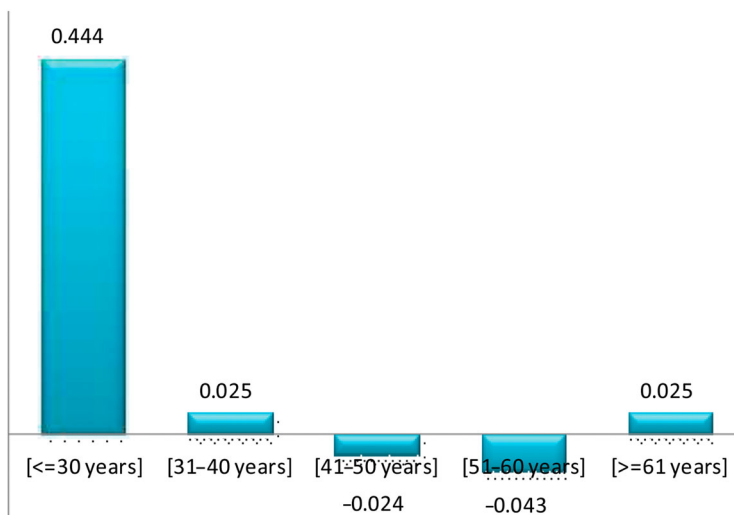


Figure 2. Job motivation by age group.

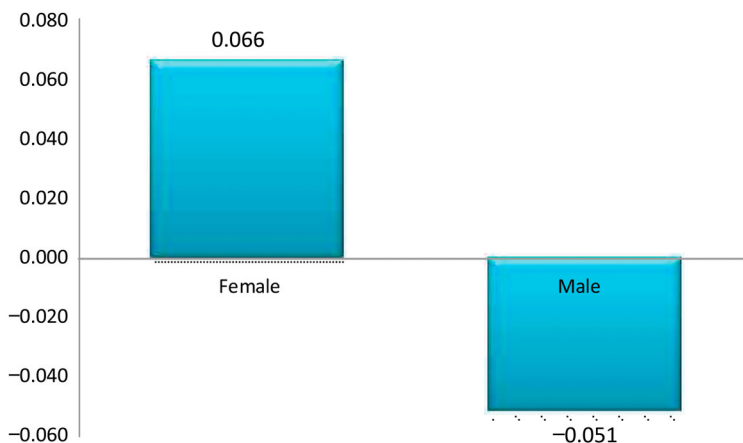


Figure 3. Job motivation by gender.

a significance level of 0.05, revealed that the difference between the genders was statistically significant [$t(3001.049) = 3.262; p < .05$; Figure 3].

Summary and preliminary conclusions

On a scale from 0 to 10 (extremely dissatisfied to extremely satisfied), Portuguese academics were satisfied with their academic professions (mean = 6.30) but not very satisfied in general. General satisfaction was higher for those at private institutions, and within this group, the value was higher at private universities than for those at private polytechnic institutes. In public HE, general satisfaction was lower at public universities. Regarding general satisfaction by age group, overall, academics who

were at the beginning of their careers and those who were older (aged 61 years or more) indicated greater satisfaction. With respect to general satisfaction by gender, the difference between females and males was not statistically significant. This result is similar to those from other studies conducted in other countries. Authors such as Ward and Sloane (2000), Santhapparaj and Alam (2005), and Stevens (2005) found that males and females expressed similar levels of satisfaction.

Academic staff expressed more satisfaction with nonacademic staff (administrative staff and technical and laboratorial staff), teaching climate, and colleagues. On the contrary, academics revealed less satisfaction with research climate and conditions of employment. These results were similar to the conclusions of Ssesanga and Garrett (2005) that academics are relatively satisfied with coworker behavior and intrinsic factors of teaching. Ward and Sloane (2000) found that academics were most satisfied with the opportunity to use their own initiative, with the relationship with their colleagues, and with the actual work; the academics were least satisfied with promotion prospects and salary.

Academics were motivated (mean = 7), but motivation was not very high. Academics in private HE were more motivated. The more demotivated academics were those who worked at public universities, followed by those at public polytechnic institutes. Academics aged 30 years or less were the most motivated, followed by the other age groups (31–40 years and academics aged 61 years or more). Females seem to be more motivated than males at Portuguese HEIs.

The findings of this research indicate that Portuguese academics are not very highly satisfied or even motivated. Results concur with those gathered from the CAP Project (Dias et al. 2012).

These results must be carefully examined by institutional leaders and policy-makers in Portugal to promote academic satisfaction, particularly in the areas with which academics are dissatisfied, which were mainly with conditions of employment and research climate. Moreover, particular attention also seems to be needed in public HEIs with academics aged in their 40s and 60s.

Future research could be conducted to determine the state of satisfaction and motivation of faculty in Portugal, in 5 or 10 years, to conduct a diachronic study and to check improvements enabled by the present study and aspects/dimensions of satisfaction/motivation to improve. Moreover, a comparative study on faculty satisfaction and motivation in various countries could provide fundamental information to improve human resource management at HEIs and, therefore, to create satisfaction, to improve the performance of the academic staff, and to retain and attract academic talent.

Institutional leadership has an important role in the creation of job satisfaction by identifying the factors that cause low job satisfaction and dissatisfaction and using these data to identify ways to improve. All of this is crucial because 'job satisfaction has significant impact on employee commitment to the organizations, job performance, and motivation. At the same time, employees with high job satisfaction would lead to lower turnover and absenteeism' (Noordin and Jusoff 2009, 125). According to Silva (1998), today's market requires permanent, ongoing evaluation of competitive ability. The importance of the human factor and its involvement in the objectives of the organization becomes clear in this context.

Acknowledgments

The article was prepared with the financial aid of the Foundation for Science and Technology.

Notes

1. The research team is composed of Virgílio Meira Soares, Maria de Lourdes Machado, José Brites Ferreira, Rui Brites, Mínoo Farhangmerh, Odília Gouveia, and Marvin Peterson.
2. Postdoctoral degree granted to those who, before an examination board composed of Full Professors selected at national/international level, during two days of formal open examination, present and defend their work.

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