Academic staff quality in higher education: an empirical analysis of Portuguese public administration education

Cláudia S. Sarrico · André A. Alves

Abstract
Higher education accreditation frameworks typically consider academic staff quality a key element. This article embarks on an empirical study of what academic staff quality means, how it is measured, and how different aspects of staff quality relate to each other. It draws on the relatively nascent Portuguese experience with study programme accreditation.
The study provides an analysis of staff quality in public administration education, an area of massive expansion in recent years. Several dimensions of quality are assessed (staff qualifications, research intensity, disciplinary orientation, diversity, international orientation, professional orientation, and inbreeding) along with the interactions that occur between them. A statistical analysis is made of the indicators for all 21 study programmes in the area of public administration, involving 236 academics in 6 public universities.
We find that, in general, the quality of academic staff complies with standards, but there are issues regarding qualifications and research intensity that need to be addressed.
The findings emphasize the need to uphold academic staff quality standards but calls for policies to curtail possible gaming resulting from it.
The article illustrates the relevance of analysing staff quality from an empirical point of view and its contribution to our understanding of how different quality accreditation processes function and their implications for how quality is achieved in higher education.

Key words Academic staff · quality · accreditation · public administration education · Portugal

Acknowledgements

The authors would like to thank the reviewers for their helpful comments. They would also like to thank A3ES for providing the data. C. S. Sarrico acknowledges support by FCT – Fundação para a Ciência e Tecnologia under grant PEst-OE/CED/UI0757/2011 (which is funded by the Program COMPETE).

Conflict of interest statement

The authors have no conflicts of interest to declare.

Introduction

Quality in higher education has received substantial attention over the years in the higher education studies' literature (Barnett 1992; Brennan and Shah 2000; Cave et al. 1997; Harvey and Williams 2010; Westerheijden et al. 2007b; Westerheijden et al. 2014; Rosa and Amaral 2014). The meaning of quality has been discussed at length (Green 1994; Harvey and Green 1992), along with its purposes (Vroeijenstijn 1995), the development of quality assurance (Westerheijden et al. 2007b), the perceptions of staff (Rosa et al. 2012) and students (Cardoso 2012), and the impact of the quality movement in higher education (Harvey 2006; Harvey and Williams 2010).

In Europe a 'common grammar' for European higher education governance has developed (Magalhães et al. 2013), and the norms regarding quality governance have been synthesised in the Standards and Guidelines for Quality Assurance in the European Higher Education Area – ESG (ENQA 2009). Similar to a number of accreditation frameworks, the ESG lays down an expected standard for the quality of academic staff. However, despite the growth in the study of quality in higher education, academic staff quality seems to be an understudied dimension. It seems we know little of how this dimension is operationalised and how different dimensions of staff quality relate to each other. To the best of our understanding, no comparable empirical studies have been conducted to date.

Indeed, from early on in the quality movement, indicators have been used to support quality reviews (Cave et al. 1997; J. Johnes and Taylor 1990; G. Johnes 1992), namely to assess output performance in research (G. Johnes 1988, 1990) and teaching (G. Johnes et al. 1987; J. Johnes 1990; J. Johnes and Taylor 1987, 1989a, 1989b). But there seems to be less empirical studies on the issue of input factors – such as academic staff quality – and consequently the indicators that could be used to measure it. This is in spite of the fact that the assessment of academic work relies more and more on indicators rather than peer judgement (Musselin 2005).

Given the above, this article has a general aim of improving our understanding of how quality assurance processes function and their implication for how quality is achieved in higher education. This responds to the challenge of Stensaker et al. (2010), who call for standards not to be taken for granted but analysed empirically to better understand their role and function.

More specifically, the study's purpose is to contribute empirical evidence to the debate surrounding the issue of academic staff quality by focusing on the analysis of a paradigmatic case: public administration

education in Portugal. The significant growth in the provision of public administration degrees over recent decades raises concerns of quality, namely regarding the quality of academic staff.

The article starts with an overview of quality accreditation in higher education in general and in public administration in particular. The following section presents the Portuguese case – which provides the setting for the empirical analysis conducted in this article – giving particular attention to the Portuguese administrative law tradition and its implications for public administration education, training and practices within the contemporary policy context of the country. It also outlines a number of potential issues that arise in a context where there is rapid growth of public administration education, such as has occurred in Portugal. Following from this, the research question, data and methods are presented. These elements provide the groundwork for the empirical analysis, which starts by focusing on the characteristics of public administration educators before proceeding to analyse several issues relevant to assessing academic staff quality. The article concludes with the main implications that can be derived from the empirical analysis of the Portuguese case and the broader implications in terms of the role and function of accreditation processes.

Accreditation and staff quality

The rise of accreditation, as a way to assure academic quality in higher education, has been widely reported (Harvey 2007; Westerheijden et al. 2014). It is part of the necessary governance mechanisms for 'consumer protection' resulting from a trend towards market regulation (Westerheijden et al. 2007a), and where external academic quality assurance is necessary to protect the public interest (Dill and Beerkens 2013). The European Network for Quality Assurance in Higher Education (ENQA) was created as part of the Bologna process designed to create an open European education area. ENQA was subsequently responsible for developing the European Standards and Guidelines for Quality Assurance in higher education in Europe (ENQA 2005, 2009).

The ESG contains a standard that specifically addresses the quality assurance of teaching staff: 'Institutions should have ways of satisfying themselves that staff involved with the teaching of students are qualified and competent to do so.' It is not prescriptive regarding what is meant by 'qualified' or 'competent', but only that institutions should have mechanisms in place to assure those characteristics, have staff development and support processes in place, and means of removing from duty those falling

below the required level of performance. Langfeldt et al. (2010) show that the implementation of this particular ESG standard often led to quantitative requirements for staff qualifications for the accreditation of study programmes. However, this has been a disputed criterion as the same quantitative requirements often apply regardless of study field and the professional orientation of the programme. Barnett (2005) also makes the point that evaluation instruments are not neutral in their effects and they might constrain the 'scholarly space' of academic staff. Research is generally seen as easier to assess than teaching, as Altbach and Lewis (1996) concluded from the results of one of the first international surveys on the academic profession. Accordingly, the research record is particularly important in academic evaluation, and there is widespread dissatisfaction with the way teaching is assessed. More recently Kreber (2002), while investigating the meaning of the scholarship of teaching, makes the point that significant progress has been made in staff development and support regarding the scholarship of teaching, but it still is not granted the same recognition attributed to research, for which there are more readily available metrics. Thus there may often be a tense relationship between accreditation metrics and what Barnett calls academic 'spaces' (Barnett 2005).

Portugal is not an exception on the road to accreditation in higher education (Rosa and Amaral 2012). New legislation in the Portuguese higher education framework changed the legal regime of higher education institutions, the statutes of the university teaching staff career, and the assurance of quality system. This was a result of placing more emphasis on institutions' accountability for quality issues and their responsibility for assuring and improving the quality of their education (Rosa and Sarrico 2012). A specific agency for assessment and accreditation of higher education institutions and their programmes (A3ES) was created and new requirements imposed determining minimum standards for academic staff (ENQA 2006; A3ES 2009). The Portuguese standards (A3ES 2013) follow very closely the ESG (ENQA 2009), with three additions regarding research, internationalisation, and the third mission, revealing a more comprehensive view of higher education quality.

Comparative work using a number of institutional case studies to look at the implementation of the ESG in Europe has shown that academic staff quality is less developed relative to other standards in the ESG (Chmielecka et al. 2013). A study of the Portuguese case came to the same conclusions (Cardoso et al. 2015).

Academic staff quality and the accreditation framework in public administration

A brief overview of some of the main international public administration accreditation standards reiterates the preoccupation with academic staff quality as a necessary element for good quality public administration education.

In the United States, Standard 3 of NASPAA's accreditation standards emphasises the importance of academic staff qualifications: 'The program's faculty members will be academically or professionally qualified to pursue the program's mission'; diversity: 'The program will promote diversity and a climate of inclusiveness through its recruitment and retention of faculty members'; and research intensity and third mission: 'Program faculty members will produce scholarship and engage in professional and community service activities outside of the university appropriate to the program's mission, stage of their careers, and the expectations of their university' (NASPAA 2009).

Similarly, in Europe, the EAPAA's Accreditation Criteria stress the relevance of faculty academic qualifications: 'A substantive percentage of the professional faculty nucleus actively involved in the programme holds an earned doctorate or other equivalent terminal academic degree in their field'; involvement with research: 'A sufficient number of the staff is actively involved in public administration research activities'; and gender diversity: 'The programme strives for a balanced percentage of men and women among their (professional) staff, which is in accordance with the principles of gender equality as specified by the higher education institution hosting the programme' (EAPAA 2013).

Portuguese public administration education

The provision of education in the area of public administration has increased significantly in recent years, raising questions about its quality and adequacy. These questions are intrinsically linked not only to the higher education system but also to country specific characteristics relating to the organization of public administration and its long-standing traditional approaches to issues of public administration.

The data used in this article refers to the Portuguese reality. Although a large proportion of the findings are relevant for the broader field of higher education studies, there are nevertheless national characteristics that one should be aware of. The study of public administration is in many ways affected by national specificities in terms of state, politics and administrative structures and practices. Thus, before proceeding to the data it is important to provide a brief contextualization of the Portuguese reality.

In Portugal, as in any other country, the trends and practices in public administration are necessarily shaped to a large extent by the prevailing views on the role and organization of the state and public administration (Kickert 2005). Portugal is characterized by a heavily conservative culture surrounding public institutions and this has profoundly affected the outcomes of efforts to introduce public administration reforms (Tavares and Alves 2006). This culture is heavily influenced by the French legalistic model that was adopted in the nineteenth century and is associated with a long and persistent tradition in Portugal whereby policymaking and public administration are largely dependent and conditioned by an intricate legislative process (Caupers 1999). Interestingly, as already noted by Guyomarch (1999), the distinctive characteristics of French public administration (such as the emphasis on administrative law, the status and rights of civil servants, and the role and organisational modes of state public-service providers) are essential to understanding the hybrid nature of modernisation reforms. While one should be careful not to ignore influences and transfers of ideas across different public administration traditions (Sager et al. 2012), it should also be expected that countries where the influence of the French model proved more significant retain some of their distinct features over time, even under strong external pressures.

As in other Southern European countries – such as Spain (Torres and Pina 2004) and Italy (Capano 2003) – the established administrative law paradigm means that issues of public administration in Portugal are usually approached first and foremost through the jurisdictional framework. Unsurprisingly, as explored below, traditional forms of Portuguese public administration education and training place a great emphasis upon administrative law and the study of formal and procedural rules.

This long-standing Portuguese administrative law paradigm has subsisted through several political regime changes and perhaps one of the key factors behind its staying power is that it blends well with the traditionally high patterns of direct governmental intervention in the economy and society. The authoritarian regime that existed in Portugal from 1926 to 1974 reinforced the administrative law culture through the introduction of elements of corporatist state doctrines. While the 1974 revolution put an end to the authoritarian regime, several elements of corporatism remained and the administrative law tradition was further strengthened – even if indirectly – through the major expansion of the state and the apparatus that grew up around it. The new 1976 Portuguese Constitution included wide ranging social rights that became the basis of a rapid expansion of the welfare state, while Portugal's accession to the

European Union further reinforced that trend. In two decades, the share of GDP consumed by public social expenditure in Portugal more than doubled and the bureaucratic structures of public administration experienced a correspondingly intense expansion and complexification (Alves 2011).

This rapid expansion and complexification of the state, coupled with broader economic and social changes over the last few decades, inevitably posed new challenges to public administration but nevertheless the deeply rooted administrative law tradition has proven to be resilient and often a source of resistance to change. A major contradiction has thus emerged (Tavares and Alves 2006).

This tension is naturally reflected in public administration practices and education. Issues such as the rigidity and excessive formal and procedural bureaucratic requirements of Portuguese public administration, the inadequacy of personnel selection and training processes, the lack of effective performance evaluation mechanisms, and the persistence of high degrees of clientelism have caused increasing concern and discussion (Tavares and Alves 2006; Rego et al. 2006; Alves and Moreira 2006; Magone 2011). Successive initiatives to modernise public administration in Portugal have been put into effect over the most part of the last three decades, and as Stoleroff (2013) rightly notes:

> When the sovereign debt crisis exploded in Portugal in 2010, public sector employment relations were still in the midst of the great sea change that had been the 'Public Administration Reform' (Reforma da Administração Pública). This reform, begun at the turn of the century, has since been overtaken by the austerity that followed the €78 billion 'bail-out' of the Portuguese state through the external intervention of the Troika.

Although for some time attempts have been made at reform under several different labels, it was only with the fully-fledged outbreak of the financial and economic crisis in Portugal that public administration reforms which openly break with the administrative law paradigm have been pushed to the top of the agenda (Alves 2011, 2014; Bragues 2012). As part of the agreement that led to the international rescue loans provided to Portugal, the government was obliged to enact a vast array of reforms, many of which directly connected with public administration reform (European Commission 2011).

It is still too early to make a definitive evaluation of the implications of this process for Portuguese public administration and the discussion is sure to continue for many years. Nevertheless, preliminary

findings suggest that in Portugal, as in other Southern European countries undergoing similar processes (Spain, Greece, and to some extent also Italy), the public policy strategy directed by fiscal austerity goals failed to connect short-term austerity cuts to long-term consistent administrative modernization programmes (Di Mascio and Natalini 2015). The developments in Portuguese public administration under significant external contextual pressures also suggest a strong role for path-dependency (Stoleroff 2013) and the continued influence of its public administration tradition and culture (Tavares and Alves 2006).

The difficulties in implementing a wide reaching administrative modernization strategy, even under strong external pressures, therefore would appear to reinforce the broader relevance of analysing the arousal and expansion of public administration education in this type of setting.

Public administration in the context of the Portuguese higher education system

Enrolment numbers in Portuguese higher education have swollen massively over the last four decades, with absolute numbers more than quadrupling. This is not surprising, considering that in the 1970s nine new universities were created in addition to the four that then existed. Although the expansion in higher education provision applied to the vast majority of areas, some new subjects experienced a particularly rapid development. This was the case with public administration education provision.

In line with the strong administrative law tradition, public administration was generally regarded as a sub-branch of law studies (Hajnal 2003). By the early 20th century, the universities of Lisbon and Coimbra had in their curricula a few subjects within administrative sciences but these were under the more general umbrella of administrative law (Caupers 1999). An implication of this state of affairs is that public administration was not regarded as an autonomous field of study until very recently (Moreira and Alves 2008).

In this context, the Portuguese civil service was – and to a significant, although decreasing, extent continues to be – characterised by professionals with a law background. Other educational backgrounds, of a more technical nature, such as engineering, economics or accounting, also hold some degree of relevance even if traditionally it was unequivocally administrative law that shaped the professional area. Against this background, the development of progressively autonomous public administration education is necessarily subject to continuing tensions and dialogue with pre-existing paradigms (Moreira and Alves

2008). The gradual affirmation of a specific autonomous space and role for public administration education is linked with the reshaping of the associated professional area.

These tensions extend as well into the ongoing definition of closely related disciplines and fields of study such as public management. In professional and educational contexts where economics and business studies have a stronger hold, a broader notion of public management will typically prevail, often encompassing most dimensions of public administration education. Where that is not the case, stricter and more limited definitions of public managements will typically arise, with other disciplines, such as first and foremost, law, but also others such as political science or sociology claiming a more central role in public administration education (Moreira and Alves 2008).

The first inroads into the development of some form of public administration education came about as a result of the need to train officials for the Portuguese overseas colonies. In 1906, the *Escola Colonial* (Colonial School) was created, passing through several restructuring processes over the 20th century. This led to the emergence of the *Instituto Superior de Ciências Sociais e Política Ultramarina* (Institute of Social Sciences and Overseas Policy) in the early 1960s. It was there that in 1967 an autonomous degree in administrative science was created, but it proved to be a short-lived experience (Tavares and Alves 2006; Moreira and Alves 2008). In 1974 the Institute adopted its current designation of *Instituto Superior de Ciências Sociais e Políticas* (ISCSP – Institute of Social and Political Sciences), and became integrated into the Technical University of Lisbon.

It was only after the 1974 revolution that public administration and public administration studies gradually started to develop some autonomy in relation to administrative law. It is worth emphasizing that this development came about roughly two decades later than was the case in other European countries (Kickert 1996), a delay which is important to understanding why public administration education is still at a comparatively early stage of implementation in Portugal.

In 1980, ISCSP created a degree in *Gestão e Administração Pública* (Public Administration and Management) and in 1990 the University of Minho offered an autonomous degree in *Administração Pública* based upon an earlier (1979) line of studies in *Administração Pública Regional e Local* (Regional and Local Public Administration) that was offered as one of the branches of a degree in Administrative Sciences – the other branch being Business Management and Administration (Moreira and Alves 2008).

It is interesting to note that public management and public administration studies at the Technical University of Lisbon are part of ISCSP (the Institute of Social and Political Sciences), while at the University of Minho they are part of the *Escola de Economia e Gestão* (the School of Economics and Management), and in the case of the University of Coimbra they continue – to this day – to be fully integrated in the Faculty of Law, both at undergraduate and postgraduate level.

From the 1990s onwards, public administration education provision experienced a rapid expansion in Portugal and questions have naturally been raised about its quality and adequacy. The specific characteristics of the evolution of public administration education provision in Portugal coupled with this new regulatory framework and the current challenges faced by the country thus make this a particularly interesting case to analyse.

Potential issues in the context of rapid growth of public administration education

The rapid growth of public administration education raises a number of potential issues that can be subjected to empirical analysis, and in particular issues associated with quality accreditation: staff qualifications, diversity, research intensity, and the third mission. Other relevant factors for public administration education are disciplinary orientation, internationalisation, and possible inbreeding problems.

The application of minimum standards for staff qualification by a regulatory agency is a particularly sensitive issue in a field that has only recently developed autonomously and is closed to professional practice (Langfeldt et al. 2010). This compares to fields that have been established for a considerable time (such as, for example, Law, Architecture or Medicine) where the existing standards and practices that have developed over time – both nationally and internationally – can be used as a source of guidance. In a recently developed area, such as that of public administration, there will naturally tend to be a larger degree of uncertainty and divergence. This is therefore an area where a thorough empirical characterization of the academic staff engaged in this field is particularly relevant. The mandatory minimum standards are also associated with the risk of inducing gaming patterns of behaviour. An example of gaming is acting on the incentive to accelerate the production of doctorates to comply with the requirements for staff accreditation standards; this behaviour would then raise legitimate questions about their quality. This issue is closely related with another dimension of our analysis: the research

intensity of academic staff involved in public administration education, and their internationalisation. There is evidence that these two dimensions are closely related (Delgado-Márquez et al. 2013; Richardson and McKenna 2003).

Another major potential issue arising with the rapid growth of public administration education revolves around the challenges posed by the intrinsic interdisciplinarity of public administration as a scientific and educational subject. Dealing with interdisciplinarity is never easy but in the case of public administration this challenge is made more salient by the sheer number of other scientific areas that are relevant: law, management, economics, political science, philosophy, sociology, history, psychology and engineering, among others – all pertinent and in 'competition' for room in an interdisciplinary domain such as public administration. Assessing disciplinary orientation and its implications is therefore key.

Finally, it is also important to assess how a rapidly expanding sector is coping with the challenges of both diversity and minimizing inbreeding, particularly in contexts where these problems permeate large segments of society and can be considered to be, at least to some extent, endemic (Horta et al. 2010; Inanc and Tuncer 2011).

Data and methods

The empirical research sought to answer the following questions: to what extent are the characteristics of academics aligned with the accreditation standards and how do the different dimensions of staff quality relate to each other. The main results are presented below.

As a requirement for degree accreditation, universities in Portugal had to submit information on every member of academic teaching staff in 2010. For each person there is a form with the following information: name, institution, unit, category, employment regime, academic training, relevant research (up to five references), relevant professional experience, and annual teaching allocation. It is based on this information that the panels assessing each degree programme form their judgement regarding academic staff quality. As such, these dimensions are operationalising the concept of staff quality.

From this information, as submitted to A3ES, a database was built consisting of all academics in Portugal teaching at 1st, 2nd and 3rd cycle level in degree programmes in the area of public administration. Such degree programmes were spread over 6 public universities. The sample thus comprises 21 programmes (4 bachelor degrees – 1,193 students, 13 master's degrees – 644 students, 3

doctoral degrees – 22 students), corresponding to 236 academics (see Table 1). Data refers to the academic year 2009/10.

Table 1. Distribution of academics by institution

The data available was coded as in Table 2. Most of the data was easily coded from the information available. However, some variables had to be constructed. The coding of *scientific field* was constructed from the information regarding academic training, research activity and subjects taught. It thus implies a judgement on the part of the authors as to how this information fits with the Frascati classification, used in OECD, European Union and UNESCO statistics on research and development (OECD 2002). A more challenging task was coding the research intensity of each academic. Research production in the respective scientific field is a necessary condition for the accreditation of postgraduate degrees. For a master's degree it is necessary to show 'existence of research activity', while for a doctoral degree a sterner test is required: evidence of 'relevant research'. There is no definition of standards in this respect, and it is up to the academic peers sitting in the panel of assessors to make a judgement on research relevance. As such, the authors had to make an informed judgement when coding this variable, based on the information available on the forms. It was decided that to comply with the criterion of the 'existence of research activity' there had to be some research outputs in the form of published articles, chapters or books. For the criterion of 'relevant research' to have been met, it was considered necessary that at least two published articles appeared in international refereed journals out of the five references given on the form. This decision is in line with requirements published in recent national competitions for professoriate positions. The variable was thus coded using three levels of research intensity: no research, some research and relevant research. The authors have followed the lead of Hajnal (2003), and worked independently to classify each individual's research intensity. In an ensuing phase, cases that had been rated differently were jointly reviewed to assure consistency in the application of pre-defined criteria.

Table 2. Variables and coding

Once the variables were constructed, descriptive statistics were used to characterise public administration educators. Since the data is mostly composed of categorical variables, we further analysed relationships between all the variables using contingency tables, and by calculating chi-square statistics to ascertain if the relationships were significant, measuring their strength with Cramer's V (Field 2005).

Results

Table 3 presents descriptive statistics for the variables available.

Table 3. Descriptive statistics

The 2009 career statutes of public sector university teaching staff (who are civil servants) demand that the combined number of associate and full professors represent 70% of academic staff. Our data, which is from the first year of the accreditation regime, shows that these two categories represent only 25.9%. It will take many years to change the situation as these categories have higher salaries, especially given the current and future financial constraints of the country. Also, the new statutes introduce the requirement that the academic career should start at the level of assistant professor, for which a doctorate is a requirement. However, at present, only 67.4% of academics in the area of public administration possess a doctorate, and 11.9% do not even possess a master's degree. This is in line with the overall proportion of 68.3% of academics in the professoriate echelons, i.e. those with a doctorate. These figures mean there is some way to go before reaching the new standards, although given the field's proximity to professional practice, some would argue this is not a major problem (Langfeldt et al. 2010).

Academics can be in the career (with permanent contracts, on tenure-track or already tenured), or be 'invited' academics (not in the career, and with non-permanent contracts). The new statutes impose a limitation on the proportion of 'invited' academics of 1/3. These are meant to have professional experience outside academia and be on part-time contracts. Currently 36.0% of academics are 'invited', a number which is not very far from the legally stipulated limit and, as such, not a grave cause for concern. Indeed this mix might in fact be considered beneficial to maintaining links to professional practice. The majority of academics, 53.0%, are employed on exclusive, full time contracts, i.e. they may not work outside of academia; a further 17.8%, although employed full time, do not have exclusivity. The remaining

academics are divided into 26.3% that work part-time and 3.0% on other contracts. Confusingly, only 50.6% of invited staff stated they were on part-time contracts. However, comparing this against the proportion of career staff on part-time contracts (13.7%) shows that those on invited contracts were 6.45 times more likely to be employed part-time compared to those in the career. As might be expected of a field that is concerned with a professional arena (i.e. the civil service), 45.1% of academics do have experience outside academia. It does mean that a significant proportion of staff are able to bring practical experience to their teaching and research. As expected, more invited academics have experience outside of academia than those in the career. However, the data show that this is not a universal trait: while 61.1% of invited academics stated they had experience, this also means that nearly 40% (38.9%) had no experience (this may also reflect the fact that almost half of invited academics work full time in academia). In context, invited academics are 2.75 times more likely to have experience outside of academia compared to career academics.

We do not have a variable for the age of academics, but use the decade of initial graduation as a proxy. More than 40% of academics graduated in the 1990s or 2000s, and are thus, being at most in their forties, relatively young. This probably reflects the massification of Portuguese higher education from the 1990s onwards (Teixeira et al. 2007).

Academics from a number of scientific fields (inferred from academic activity, research training and subjects taught) contribute to the teaching of public administration in Portugal, namely Mathematics, Engineering, Health Sciences, and Humanities. As expected, however, Social Sciences form the most common scientific background: Economics (23.3%), Other Social Sciences – including Sociology, and Social and Economic Geography (25.4%), Law (20.8%), Business (12.7%), and lastly, with the smallest weighting, Political Science (5.5%). The reduced influence of Political Science may indicate its relative youth as part of Portuguese academia, and/ or a miscoding of the variable from the available information.

A finer analysis points to imbalances in the distribution of academics of different areas between institutions:

- Business studies seems to be evenly distributed;
- Economics seems over-represented at Universidade do Minho;
- Sociology seems to be dominant at ISCTE;

- Law seems to be quite over-represented at Universidade de Coimbra, and also at Universidade de Lisboa;
- Political Science seems to be a feature mostly of Universidade Técnica de Lisboa.

This characterization is most likely due to the particularities of the units that host the degrees and academics in question, as well as the history of those units.

Only 28.0% of academics work in an institution of which they are not alumni. Of those alumni that do work for their alma mater, 58.5% were also awarded their last degree there, which seems to represent a staggering level of inbreeding in the sector. Nevertheless, the data shows that almost a quarter of academics have been awarded their last degree (excluding *habilitation*) from an institution outside Portugal.

The old career statutes, pre-2009, stipulated that academics on full-time contracts should teach between 6 and 12 hours per week over the semester, while the 2009 statutes narrowed this value to between 6 and 9 hours. The data shows that staff teach an average of 7 hours per week per semester. Those that teach 9 hours or less per week per semester, account for 75% of academics, which is already in line with the new regulations. Thus teaching is not necessarily an impediment to research. However, and even considering the not very demanding criterion explained above, only 15.7% of academics got a 'relevant research' accolade, while 38.1% did not present evidence of any research output.

To further characterise staff teaching public administration in Portugal we looked at how the individual variables correlated. Table shows the strength of the associations (measured by Cramer's V, ϕc) between those variables where the relationship is statistically significant (measured by the chi-square statistics, $\chi 2$; for our purposes, we chose a significance level of $p < 0.05$). The results allow us to investigate issues of qualifications, diversity, research intensity, professional experience outside the academy, and inbreeding, and how they relate to each other.

Table 4. Significant associations

The strong association between *Sex* and *Category* belies the fact that males are significantly overrepresented in the most senior categories of associate and full professors; there are actually no female full professors in the area. However, the situation is changing, as women are better represented

in the younger generation of academics (as shown by the significant association between *Sex* and *Year of Graduation*); the number of women and men who have finished their first degree in the nineties is the same, whereas for the previous decades men were always in the majority. Men are also significantly more likely to have professional experience outside academia than women (reflected in the association between *Sex* and *Professional Experience*).

'Invited' academics are statistically more likely to have professional experience outside academia, as should be expected (shown in the association between *Tenure* and *Professional Experience*). Accordingly, they are also significantly less likely to be involved in research (*Tenure* vs. *Research Intensity*). There is a very strong association between *Tenure* and *Employment Regime*, indicating that 'invited' academics are much more likely than those in the career to be employed on part-time contracts, as should be expected. Also, those with exclusivity, as expected, seem to be more research active (*Employment Regime* vs. *Research Intensity*). Superficially this is not obvious: 72% of those on exclusive contracts produce at least some research compared to 62% overall. Looking at just 'relevant' research though shows a more distinct picture: here 24.8% of those on exclusive contracts produce 'relevant' research compared to an average of just 4.8% of those on other contracts. In other words, academics on exclusive contracts are 6.5 times more likely to have 'relevant' research compared to other academics.

Those in the professoriate are more likely to be tenure-track or tenured staff (*Category* vs. *Tenure*), while they are also more likely to have obtained their last degree abroad (*Category* vs. *Internationalisation*). In the past, the accusation was often levied that promotion to the higher echelons of the hierarchy was based more on seniority than merit. Looking at the association between *Category* and *Year of Graduation* (a proxy for age) leads to the conclusion that there is a significant, medium strength, association between a staff member's category and their decade of graduation. However, it is also true that there is a significant association between the *Category* and *Research Intensity*, also of medium strength. Thus it seems that merit does play its part in promotion to higher categories. However, this does not tell the whole story: the same percentage of both assistant professors and full professors showed evidence of 'relevant' research (16%), compared with nearly double this number for associate professors (31%).

We were interested to know if younger academics tend to be more qualified than their older peers. However, we could not discern an association between those with a doctoral degree and their decade of initial graduation.

As expected a degree abroad seems to combat inbreeding; the association between *Inbreeding* and *Internationalisation* is significant and strong. In fact, 76.7% of those that studied for their last degree in Portugal work for the same institution where it was awarded. However, some 38.6% of those that studied for their last degree abroad returned to an institution from which they had been awarded a previous degree. It seems that inbreeding is thus still quite strong, despite the internationalisation effect. This is in line with Musselin's (2004) findings regarding the European academic labour market where mobility is used as way to increase the chances of being recruited at home, and once one enters a specific national career, it is difficult to leave it.

Internationalisation also seems to contribute to *Research Intensity*. Conversely, having *Professional Experience* outside of academia initially seems to hinder *Research Intensity*. However, if one excludes from the analysis 'invited' academics and all others on part-time contracts, the association is no longer significant (at the p=0.05 level) for those in the career track ($\chi^2(2)=5.850$, p=0.058). Thus having professional experience outside academia for those in the career track is not detrimental to research intensity.

Conclusions

Our research questions concerned the characteristics of academics and how they are aligned with accreditation standards, and how the different dimensions of staff quality relate to each other. We offered an empirical analysis of the Portuguese case, using data on academic staff that teach in public administration study programmes. We find that, in general, the quality of academic staff complies with standards, but there are issues regarding qualifications and research intensity that need to be addressed.

Our study is subject to some limitations: we worked with secondary data, whose collection was not for the purpose of a research study. Thus some variables had to be constructed with data that can only be considered a proxy for what would need to be measured, such as age, scientific field, or research intensity, for instance.

Hajnal (2003), in his survey of public administration education programmes in Europe, showed three different traditions: *corporate*, where management and business administration are consistently overrepresented and with limited emphasis on law; *public*, with a continental public administration culture, where political science and public policy approaches are emphasised the most; and *legal*, with the prevalence of law, and limited presence of other disciplines. Portugal was placed in the latter cluster. Reichard (1998) also shows that the public administration as a subject is less studied in countries where administration has strong juridical traditions. These facts to some extent explain our findings.

Portuguese programmes have a strong component of established disciplines such as Economics and Law, with limited influence from less established areas such as business administration and political science. Other social sciences have quite a strong presence, possibly because of a perceived excess of people in those areas relative to demand in the labour market. Moreover, not all programmes seem to have an equally balanced disciplinary orientation, as some fields of study are more prevalent in some schools than others, indicating a need for further investigation into the content of the curriculums of those schools.

As a growing field of study it is natural that public administration will have its share of growing pains. It is clear that an effort needs to be made for a significant proportion of its academics to meet qualifying criteria. While such criteria should be upheld, it is not clear that Portugal currently has critical mass in the field, capable of producing researchers to international level. Internationalisation is strongly associated with research intensity, which should be actively encouraged if public administration in Portugal is to meet the criteria in a reasonable timescale. Our findings question the national policy in the area, since the proportion of people obtaining a doctorate abroad has been decreasing with time: 62% in the seventies, 40% in the eighties, 26% in the nineties, and 15% in the noughties (GPEARI 2011).

Inbreeding is prevalent and, encouraged by accreditation requirements, there is a danger that academics will obtain their doctorates where they work for convenience, rather than because their research is significantly contributing to the body of knowledge in the area. Hopefully, that can be corrected with more stringent requirements regarding doctoral level education provision. Albeit, doubts remain as to how the panel of assessors will judge what is to be considered 'relevant research' when judging their fellow peers, especially considering the inbred environment in Portuguese academia. This

will be a challenge for the credibility of the accreditation process itself, as assessment does not necessarily lead to improvement (Sarrico et al. 2010).

In other areas the situation looks more favourable; the gender bias is beginning to be corrected as younger academics join the profession, there are not excessive amounts of 'invited' personnel, and most of those do seem to bring outside professional experience to the programmes where they teach. Also, the teaching load seems to be fair and thus not an impediment to research activity. Positively, professional experience outside academia does not seem to hinder research activity, either.

It seems that current working conditions are not unfavourable to practising research but the research capacity clearly needs further development, possibly by increasing internationalisation of doctoral education, and research activity in general.

Stensaker et al. (2010) argue that standards of the ESG may be regarded as simply encapsulation of good practice or, in a more optimistic view, input to best practice formed during implementation. This study is a snapshot that made an empirical contribution to this debate. More longitudinal empirical studies will give us a more informed view on this matter, and indeed on the dimensions of staff quality.

In the future, we would also like to compare the findings for public administration with other fields of study to establish its comparative standing, as well as extending the research to other countries, namely in Europe. This would permit a better understanding of how accreditation standards relating to academic staff quality relate to quality in higher education.

References

A3ES (2009). *Regulations on the assessment and accreditation procedures*. Lisboa: Agência de Avaliação e Acreditação do Ensino Superior.

A3ES (2013). *Auditing Internal Quality Assurance Systems in Higher Education Institutions, Manual for the Audit Process*. Lisboa: Agency for Assessment and Accreditation of Higher Education.

Altbach, P. G., & Lewis, L. S. (1996). The Academic Profession in International Perspective. In P. G. Altbach (Ed.), *The International Academic Profession: Portraits of Fourteen Countries* (pp. 3-48). Princeton: The Carnegie Foundation for the Advancement of Teaching.

Alves, A. A. (2011). The Portuguese malaise: structural causes of the crisis and lessons for the Eurozone. *Economic Affairs, 31*(2), 47-52.

Alves, A. A. (2014). In the eye of the storm: Portugal and the European crisis. In L. C. Ferreira-Pereira (Ed.), *Portugal in the European Union: Assessing Twenty-Five Years of Integration Experience*. Abingdon, Oxon: Routledge.

Alves, A. A., & Moreira, J. M. (2006). *Key issues for the training of senior civil servants in the context of public administration reform in Portugal*. Oeiras: Instituto Nacional de Administração.

Barnett, R. (1992). *Improving higher education: total quality care*. Buckingham: Society for Research into Higher Education and Open University Press.

Barnett, R. (2005). Introduction. In R. Barnett (Ed.), *Reshaping the University: New Relationships between Research, Scholarship and Teaching* (pp. 1-8). Maidenhead: Society for Research into Higher Education & Open University Press.

Bragues, G. (2012). Portugal's Plight: The Role of Social Democracy. *The Independent Review, 16*(3), 325–349.

Brennan, J., & Shah, T. (2000). *Managing quality in higher education: an international perspective on institutional assessment and change*. Buckingham: Organisation for Economic Co-operation and Development, The Society for Research into Higher Education & Open University Press.

Capano, G. (2003). Administrative traditions and policy change: when policy paradigms matter: the case of Italian administrative reform during the 1990s. *Public Administration, 81*(4), 78-801.

Cardoso, S. (2012). Students' perceptions of quality assessment – is there an option besides treating them as consumers? In B. Stensaker, J. Välimaa, & C. S. Sarrico (Eds.), *Managing reform in universities: The dynamics of culture, identity and organisational change* (pp. In press.). Basingstoke: Palgrave.

Cardoso, S., Tavares, O., & Sin, C. (2015). The quality of teaching staff: higher education institutions' compliance with the European Standards and Guidelines for Quality Assurance—the case of Portugal. *Educational Assessment, Evaluation and Accountability*, doi:10.1007/s11092-015-9211-z.

Caupers, J. (1999). Public administration programmes in Portugal. In T. Verheijen, & B. Connaughton (Eds.), *Higher Education Programmes in Public Administration: Ready for the Challenge of Europeanisation?* (pp. 32-35). Limerick: Centre for European Studies, University of Limerick.

Cave, M., Hanney, S., Henkel, M., & Kogan, M. (1997). *The Use of Performance Indicators in Higher Education: the Challenges of the Quality Movement* (3rd ed.). London: Jessica Kingsley.

Chmielecka, E., Brdulak, J., Miller, P., & Doroszewicz, S. (2013). European Standards and Guidelines for Quality Assurance and Teaching Staff. *Journal of the European Higher Education Area, 4*, 87-102.

Delgado-Márquez, B. L., Escudero-Torres, M. Á., & Hurtado-Torres, N. E. (2013). Being highly internationalised strengthens your reputation: an empirical investigation of top higher education institutions. *Higher Education, 66*(5), 619–633.

Di Mascio, F., & Natalini, A. (2015). Fiscal retrenchment in southern Europe: changing patterns of public management in Greece, Italy, Portugal and Spain. *Public Management Review, 17*(1), 129-148.

Dill, D. D., & Beerkens, M. (2013). Designing the framework conditions for assuring academic standards: lessons learned about professional, market, and government regulation of academic quality. *Higher Education, 65*(3), 341–357.

EAPAA (2013). *Accreditation Criteria, Version 9*. Enschede: European Association for Public Administration Accreditation.

ENQA (2005). *Standards and Guidelines for Quality Assurance in the European Higher Education Area*. Helsinki: European Association for Quality Assurance in Higher Education.

ENQA (2006). *Quality Assurance of Higher Education in Portugal: An Assessment of the Existing System and Recommendations for a Future System*. Helsinki: European Association for Quality Assurance in Higher Education.

ENQA (2009). *Standards and Guidelines for Quality Assurance in the European Higher Education Area. 3rd edition* (3rd ed.). Helsinki: European Association for Quality Assurance in Higher Education.

European Commission (2011). *The Economic Adjustment for Portugal. European Economy Occasional Papers 79*. Brussels: Directorate-General for Economic and Financial Affairs.

Field, A. (2005). *Discovering Statistics Using SPSS* (2nd ed.). London: Sage.

GPEARI (2011). *Fluxos e situação profissional dos doutorados em Portugal – 2009 [Flows and professional status of PhDs in Portugal - 2009]*. Lisboa: Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais.

Green, D. (1994). What is quality in higher education? Concepts, policy and practice. In D. Green (Ed.), *What is Quality in Higher Education* (pp. 3-20). Buckingham: Society for Research into Higher Education & Open University Press.

Guyomarch, A. (1999). 'Public Service', 'Public Management' and the 'Modernization' of French Public Administration. *Public Administration, 77*(1), 171–193.

Hajnal, G. (2003). Diversity and convergence: a quantitative analysis of European public administration education programs. *Journal of Public Affairs Education, 9*(4), 245-258.

Harvey, L. (2006). Impact of Quality Assurance: Overview of a Discussion between Representatives of External Quality Assurance Agencies. *Quality in Higher Education, 12*(3), 287-290.

Harvey, L. (2007). The power of accreditation: views of academics. *Journal of Higher Education Policy and Management, 26*(2), 207-223.

Harvey, L., & Green, D. (1992). Defining quality. *Assessment and Evaluation in Higher Education, 18*(1), 9-34.

Harvey, L., & Williams, J. (2010). Fifteen years of quality in higher education. *Quality in Higher Education, 16*(1), 3-36.

Horta, H., Veloso, F. M., & Grediaga, R. (2010). Navel gazing: academic inbreeding and scientific productivity. *Management Science, 56*(3), 414-429.

Inanc, O., & Tuncer, O. (2011). The effect of academic inbreeding on scientific effectiveness. *Scientometrics, 88*(3), :885-898.

Kickert, W. J. M. (1996). Expansion and diversification of public administration in the postwar State: the case of the Netherlands. *Public Administration, 56*(1), 88-94.

Kickert, W. J. M. (2005). Distinctiveness in the study of public management in Europe. *Public Management Review, 7*(4), 537-563.

Kreber, C. (2002). Controversy and Consensus on the Scholarship of Teaching. *Studies in Higher Education, 27*(2), 151-167.

Langfeldt, L., Stensaker, B., Harvey, L., Huisman, J., & Westerheijden, D. F. (2010). The role of peer review in Norwegian quality assurance: potential consequences for excellence and diversity. *Higher Education, 59*(4), 391–405.

Magalhães, A., Veiga, A., Sousa, S., Ribeiro, F., & Santiago, R. (2013). Creating a Common Grammar for Higher Education Governance. *Higher Education, 65*(1), 95–112.

Magone, J. (2011). The difficult transformation of State and public administration in Portugal: europeanization and the persistence of neo-patrimonialism. *Public Administration, 89*(3), 756-782.

Moreira, J. M., & Alves, A. A. (2008). Ciências da administração, gestão pública e governação em Portugal. In J. M. Moreira, C. Jalali, & A. A. Alves (Eds.), *Estado, Sociedade Civil e Administração Pública: Para um Novo Paradigma do Serviço Público* (pp. 99–110). Coimbra: Almedina.

Musselin, C. (2004). Towards a European Academic Labour Market? Some Lessons Drawn from Empirical Studies on Academic Mobility. *Higher Education, 48*(1), 55-78.

Musselin, C. (2005). European Academic Labor Markets in Transition. *Higher Education, 49*(1/2), 135-154.

NASPAA (2009). *Accreditation Standards for Master's Degree Programs*. Arlington, VA: National Association of Schools of Public Affairs and Administration, Commission on Peer Review and Accreditation.

OECD (2002). *Frascati Manual 2002: Proposed Standard Practice for Surveys on Research and Experimental Development*. Paris: OECD Publishing.

Rego, A., Sarrico, C. S., & Moreira, J. M. (2006). Trust in Portuguese Public Authorities. *Public Integrity, 8*(1), 77-92.

Reichard, C. (1998). Educational training for new public management. *International Public Management Journal, 1*(2), 177-194.

Richardson, J., & McKenna, S. (2003). International experience and academic careers. *Personnel Review, 32*(6), 774-795.

Rosa, M. J., & Amaral, A. (2012). Is there a bridge between quality and quality assurance? In B. Stensaker, J. Välimaa, & C. S. Sarrico (Eds.), *Managing Reform in Universities: the dynamics of culture, identity and organisational change* (pp. 114-134). Basingstoke: Palgrave.

Rosa, M. J., & Amaral, A. (2014). *Quality Assurance in Higher Education: Contemporary Debates*. Basingstoke: Palgrave Macmillan.

Rosa, M. J., & Sarrico, C. S. (2012). Quality, Evaluation and Accreditation: from Steering, through Compliance, on to Enhancement and Innovation? In A. Amaral, & G. R. Neave (Eds.), *Higher Education in Portugal 1974 – 2009. A Nation, a Generation* (pp. 249-264). Dordrecht: Springer.

Rosa, M. J., Sarrico, C. S., & Amaral, A. (2012). Academics' perceptions on the purposes of quality assessment. *Quality in Higher Education, 18*(3), 349-366.

Sager, F., Rosser, C., Hurni, P. Y., & Mavrot, C. (2012). How traditional are the American, French and German traditions of public administration? A research agenda. *Public Administration, 90*(1), 129–143.

Sarrico, C. S., Rosa, M. J., Teixeira, P. N., & Cardoso, M. F. (2010). Assessing quality and evaluating performance in higher education: worlds apart or complementary views? *Minerva, 48*(1), 35-54.

Stensaker, B., Harvey, L., Huisman, J., Langfeldt, L., & Westerheijden, D. F. (2010). The Impact of the European Standards and Guidelines in Agency Evaluations. *European Journal of Education, 45*(4), 577–587.

Stoleroff, A. (2013). Employment relations and unions in public administration in Portugal and Spain: From reform to austerity. *European Journal of Industrial Relations, 19*(4), 309-323.

Tavares, L. V., & Alves, A. A. (2006). The Future of Portuguese Public Administration and a New Agenda for Public Administration Sciences in the 21st Century. *Public Administration, 84*(2), 389-406.

Teixeira, P. N., Cardoso, M. F., Sarrico, C. S., & Rosa, M. J. (2007). The Portuguese public university system: on the road to improvement? In A. Bonnaccorsi, & C. Daraio (Eds.), *Universities and Strategic Knowledge Creation* (pp. 347-375). Aldershot: Edward Elgar.

Torres, L., & Pina, V. (2004). Reshaping public administration: the Spanish experience compared to the UK. *Public Administration, 82*(2), 445-464.

Vroeijenstijn, A. I. (1995). *Improvement and Accountability: Navigating between Scylla and Charybdis. Guide for External Quality Assessment in Higher Education*. London: Jessica Kingsley Publishers.

Westerheijden, D. F., Stensaker, B., & Rosa, M. J. (2007a). Introduction. In D. F. Westerheijden, B. Stensaker, & M. J. Rosa (Eds.), *Quality Assurance in Higher Education: Trends in Regulation, Translation and Transformation* (pp. 1-11). Dordrecht: Springer.

Westerheijden, D. F., Stensaker, B., & Rosa, M. J. (2007b). *Quality Assurance in Higher Education: Trends in Regulation, Translation and Transformation*. Dordrecht: Springer.

Westerheijden, D. F., Stensaker, B., Rosa, M. J., & Corbett, A. (2014). Next Generations, Catwalks, Random Walks and Arms Races: conceptualising the development of quality assurance schemes. *European Journal of Education, 49*(3), 421–434.

Table 4. Distribution of academics by institution

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	ISCTE - Instituto Universitário de Lisboa	35	14.8	14.8	14.8
	UA - Universidade de Aveiro	39	16.5	16.5	31.4
	UC - Universidade de Coimbra	43	18.2	18.2	49.6
	UL- Universidade de Lisboa	20	8.5	8.5	58.1
	UM - Universidade do Minho	36	15.3	15.3	73.3
	UTL - Universidade Técnica de Lisboa	63	26.7	26.7	100.0
	Total	236	100.0	100.0	

Table 5. Variables and coding

Variable	*Categories*	*Observations*
Name	Name	
Institution	Institution	
Unit	Unit	
Sex	• Female • Male	Coded from the name of the person
Professional category	• Assistant • Assistant Professor • Associate Professor • Full Professor	
Tenure-track	• Non-tenure track • Tenure/ tenure-track	
Employment regime	• Full time with exclusivity • Full time without exclusivity • Part time	
Graduation year	Year of first-degree awarded	Considered as a proxy for age
Highest degree	• Bachelor level • Master's level • Doctoral level • *Habilitation*	*Habilitation* is a degree which is a prerequisite to become a full professor
Scientific field	2 digit classification according to the Frascati Manual (OECD, 2002)	Inferred by the researchers from the information contained in the form.
Inbreeding	• No inbreeding (No degree from the current institution) • Weak inbreeding (One degree, but not the highest, is from the current institution) • Strong inbreeding (The highest degree awarded is from the current institution)	Excluding *habilitation*, as it is normally awarded by the employing institution.
Internationalisation	• Last degree awarded in Portugal • Last degree not awarded in Portugal	Idem

Variable	*Categories*	*Observations*
Research intensity	• No research • Some research • Relevant research	
Professional experience	• No professional experience outside academia • Professional experience outside academia	
Teaching load	Number of hours per week	

Table 6. Descriptive statistics

		Frequency	*Percent*	*Cumulative Percent*
Sex	Male	148	62.7	62.7
	Female	88	37.3	100.0
Professional category	Assistant	71	30.1	30.1
	Assistant Professor	100	42.4	72.5
	Associate Professor	42	17.8	90.3
	Full Professor	19	8.1	98.3
	Other	4	1.7	100.0
Tenure-track	Non-tenure track	63	26.7	26.7
	Tenure/ tenure-track	151	64.0	90.7
	Other	22	9.3	100.0
Employment regime	Full time with exclusivity	125	53.0	53.0
	Full time without exclusivity	42	17.8	70.8
	Part time	62	26.3	97.0
	Other	7	3.0	100.0
Graduation year	1960-1969	4	1.7	1.9
	1970-1979	44	18.6	22.2
	1980-1989	64	27.1	51.9
	1990-1999	88	37.3	92.6
	2000-2009	16	6.8	100.0
	Missing	20	8.4	
Highest degree	Bachelor	28	11.9	11.9
	Master's	49	20.8	32.6
	Doctorate	129	54.7	87.3
	Habilitation	30	12.7	100.0
Scientific field	1.1 Mathematics	8	3.4	3.4
	2.1 Civil engineering	1	0.4	3.8
	2.11 Other engineering and technologies	4	1.7	5.5
	2.2 Electrical engineering/ electronic engineering/ IT engineering	4	1.7	7.2
	2.3 Mechanical engineering	1	0.4	7.6
	2.4 Chemical engineering	1	0.4	8.1

		Frequency	*Percent*	*Cumulative Percent*
	2.7 Environmental engineering	1	0.4	8.5
	3.3 Health sciences	2	0.8	9.3
	5.1 Psychology	2	0.8	10.2
	5.2 Business	30	12.7	22.9
	5.2 Economics	55	23.3	46.2
	5.4 Sociology	18	7.6	53.8
	5.5 Law	49	20.8	74.6
	5.6 Political Science	13	5.5	80.1
	5.7 Social and economic geography	7	3.0	83.1
	5.9 Other social sciences	35	14.8	97.9
	6.1 History	1	0.4	98.3
	6.2 Languages and literature	3	1.3	99.6
	6.3 Philosophy, ethics and religion	1	0.4	100.0
Inbreeding	No inbreeding	66	28.0	28.0
	Weak inbreeding	32	13.6	41.5
	Strong inbreeding	138	58.5	100.0
Internationalisation	Last degree awarded in Portugal	179	75.8	75.8
	Last degree awarded not in Portugal	57	24.2	100.0
Research intensity	No research	90	38.1	38.1
	Some research	109	46.2	84.3
	Relevant research	37	15.7	100.0
Professional experience	Without experience outside academia	129	54.7	54.7
	With experience outside academia	107	45.3	100.0
Teaching Load (TL) per week (sum of the two semesters)	TL ≤ 6 hours	51	21.6	21.6
	6 ≤ TL ≤ 12 hours	78	33.1	54.7
	12 ≤ TL ≤ 16 hours	51	21.6	76.3
	TL ≥ 16 hours	56	23.7	100.0

Table 4. Significant associations

Measures of association	Category	Tenure	Employment regime	Year of graduation	International-isation	Research intensity	Professional experience
Sex	$\chi2(4)=14.83$ p=0.002 $\phi_c=0.252$			$\chi2(4)=10.80$ p=0.025 $\phi_c=0.223$			$\chi2(1)=6.12$ p=0.015 $\phi_c=0.161$
Category		$\chi2(3)=52.74$ p<0.0001 $\phi_c=0.499$		$\chi2(12)=60.08$ p<0.0001 $\phi_c=0.306$	$\chi2(3)=7.82$ p=0.049 $\phi_c=0.183$	$\chi2(6)=63.74$ p<0.0001 $\phi_c=0.371$	
Tenure			$\chi2(2)=51.13$ p<0.0001 $\phi_c=0.496$			$\chi2(2)=29.21$ p<0.0001 $\phi_c=0.371$	$\chi2(1)=21.88$ p<0.0001 $\phi_c=0.320$
Employment regime						$\chi2(4)=27.73$ p<0.0001 $\phi_c=0.246$	
Inbreeding					$\chi2(2)=103.68$ p<0.0001 $\phi_c=0.661$		
Internationalisation						$\chi2(2)=31.33$ p<0.0001 $\phi_c=0.364$	
Research intensity							$\chi2(2)=19.87$ p<0.0001 $\phi_c=0.290$